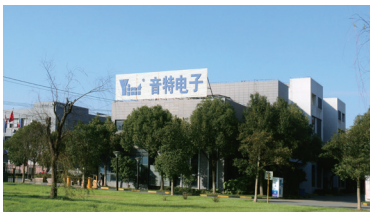
ABOUT US 关于我们

音特电子，行业领先的保护元器件及解决方案服务商，公司集研发、生产、销售和服务于一体，产品拥有自主知识产权，销往国内二十多个省市及东南亚、欧美等十多个国家，公司以优质的产品和服务在国内外市场上树立了良好的品牌形象和信誉。



公司主要产品和服务包括：TVS瞬态抑制二极管、ESD静电保护元件、PPTC自恢复保险丝、TSS半导体放电管、GDT气体放电管、SBR肖特基二极管、MOV压敏电阻、NTC热敏电阻、RD整流二极管、个性化的电路保护设计、专业化的客户解决方案等。

公司于2007年以零缺陷通过了ISO9001质量管理体系认证。拥有一流的生产和检测设备，产品材料均已通过RoHS检测；系列产品完成UL、VDE、CSA等国际标准论证，产品各项性能指标均处于行业领先水平。

公司以“一流的匠心，打造一流的产品和服务”为宗旨，以“改善、创新、节约、双赢”为经营理念，秉承“一丝不苟、精益求精”的企业精神，致力为新老客户提供最佳的产品和服务，并将引领行业进步作为企业的使命！

YINT Electronics, a leading provider of circuit protector and solution service, integrates R&D, production, sales and service in one. The company has its own intellectual property rights in all the products, the products are mainly sold to more than 20 domestic provinces and cities and more than 10 countries, such as Southeast Asia, Europe, United States, etc. YINT has set up a good brand image in domestic and foreign markets with best quality products and services.

The main products and services including: Transient Voltage Suppressors (TVS), Polymetric Positive Temperature Coefficient (PPTC), ElectroStatic Discharge Devices (ESD), Thyristor Surge Suppressors (TSS),Gas Discharge Tubes (GDT), Metal Oxide Varistors (MOV), Schottky Barrier Rectifiers (SBR) , Negative Temperature Coefficient (NTC), Rectifier Diode (RD), specialized circuit protection design, professional circuit solutions, etc.

YINT has been accredited with ISO9001 quality system certification in 2007. The company has advanced production and testing equipment, all the products comply with RoHS requirements; many series of products are certified by international safety regulatory agencies, such as UL, VDE, CSA, etc, the performance indicators are at the industrial- leading level.

Adhering the tenets of “providing best products and services with great ingenuity” and “improvement, innovation, economy and win-win”, with the spirit of “keep improvement and pursue perfection” , YINT is committed to provide best products and services for customers, and will lead the progress of electronic protection industry!

OUR ADVANTAGES 我们的优势

质量稳定

测试手段完备，产品符合相关国际国内行业标准。

High Quality

Complete testing methods, products meet relevant international and domestic industry standards.

服务周到

可提供技术支持、方案设计、测试评估增值服务

Good Service

Professional technical support, project design, testing and evaluation services.

交货准时

配置先进PMC系统，强大的常规器件备库能力。

Fast Delivery

Advanced PMC system and effective warehouse management system.

性价比高

自动化流水线，规模化生产，优质的产品和服务。

Cost-Effective

Automated assembly line and large-scale production, quality products and services.

ENTERPRISE QUALIFICATION 企业资质


商标注册证


ISO 9001


麦克风的静音保护电路专利


电池组保护电路专利


插座保护模块专利


USB接口保护电路专利


CAN总线保护电路专利


RS485防护电路专利


RS232防护电路专利


MOSFET栅源保护电路专利


LED驱动电源雷击浪涌防护电路专利

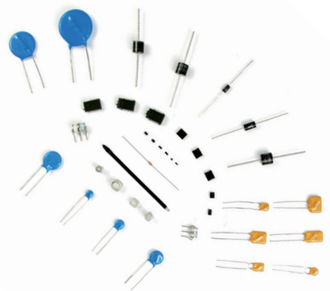

LCD保护电路专利


IEEE1394接口保护电路专利


ESD选型软件


TVS选型软件

CONTENTS 产品目录



瞬态抑制二极管 TVS（Transient Voltage Suppressors）

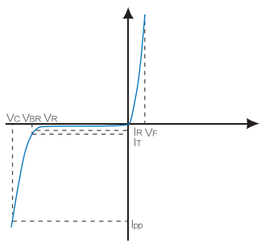
TVS是一种限压型的过压保护器，它将过高的电压钳制至一个安全范围，藉以保护后面的电路，有着比其它保护元件更快的反应时间，这使TVS可用在防护lighting、switching、ESD等快速破坏性瞬态电压。
TVS广泛应用在敏感电子零件过压保护，包括电脑、通讯、工业产品、消费性电子及汽车市场。

TVS Diode is a type of voltage suppressing device that limits over voltages to a safe range to prevent circuit from damaging and has a faster response time than other protection components. This allows TVS to be used in suppressing fast damaging transient voltage, such as lighting, switching, ESD, etc. TVS Diodes are widely used in over voltage protection of sensitive electronic components, including computer, telecommunication, industrial products, consumer electronic, automotive market, etc.

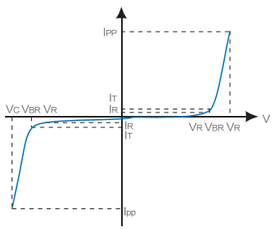
应用 Application

- 家用电器 Home appliances
- 汽车 Auto
- 通信设备 Communication Equipment
- 家用娱乐系统 Family entertainment
- 工业控制 Industrial Control
- 照明 Lighting
- 移动设备 Mobile Devices
- 电脑 等 PC etc.

I-V Curve Characterisitics



Uni-directional



Bi-directional

V_R	Reverse Stand off Voltage	反向关断电压，当TVS两端电压小于等于此值时，TVS处于截止状态
V_{BR}	Breakdown Voltage	击穿电压，当TVS两端电压大于此值时，TVS开始导通
V_C	Maxinum Clamping Voltage@I_{PP}	钳位电压，正常情况下TVS两端电压不会大于此值
I_R	Maxinum Reverse Leakage@V_R	最大漏电流
I_T	Test current	测试电流
I_{PP}	Maximum Reverse Surge Current	最大反向浪涌电流，当通过TVS的电流超过此值时，TVS可能损坏。通常情况下TVS使用10/1000μs波形的电流源测试所得。

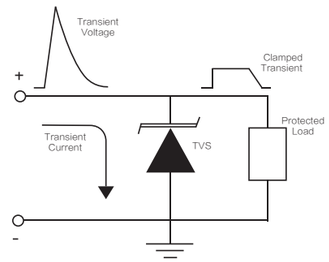


Figure 1. Transient Current is Diverted to Ground Through TVS

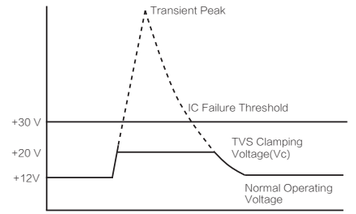


Figure 2. Transients of Several Thousand Volts can be “clamped” to a Safe Level by the TVS

在这个电路中，正常情况下TVS是不工作的，只有当电路中出现异常浪涌TVS才会起作用。TVS的参数如：击穿电压（VBR），漏电流（IR）和寄生电容C都不能影响电路的正常工作。TVS的击穿电压通常比反向关断电压高10%

In a circuit, TVS is often "hidden" until a transient event occurs, the electrical parameters such as: Breakdown Voltage (VBR), leakage current (IR) and capacitor C should not affect normal circuit operation.
TVS Breakdown Voltage (VBR) is often higher than the reverse voltage (VRWM) value of 10%.

Pppm(W)	Device	Package	
		Family	Type
200	SMF Series	Surface Mount	SOD-123FL
400	SMAJ Series	Surface Mount	DO-214AC (SMA)
500	SA Series	Plastic axial	DO-15
600	SMBJ Series	Surface Mount	DO-214AA (SMB)
	P6SMB Series	Surface Mount	DO-214AA (SMB)
	P6KE Series	Plastic axial	DO-15
800	P8SMB Series	Surface Mount	DO-214AA (SMB)
1000	1.0SMB Series	Surface Mount	DO-214AA (SMB)
1500	SMCJ Series	Surface Mount	DO-214AB (SMC)
	1.5KE Series	Plastic axial	DO-201
3000	SMDJ Series	Surface Mount	DO-214AB (SMC)
	3KP Series	Plastic axial	P600
5000	5.0SMDJ Series	Surface Mount	DO-214AB (SMC)
	5KP Series	Plastic axial	P600
6600	SM8 Series	Surface Mount	DO-218AB
8000	8KP Series	Plastic axial	P600
15000	15KP Series	Plastic axial	P600

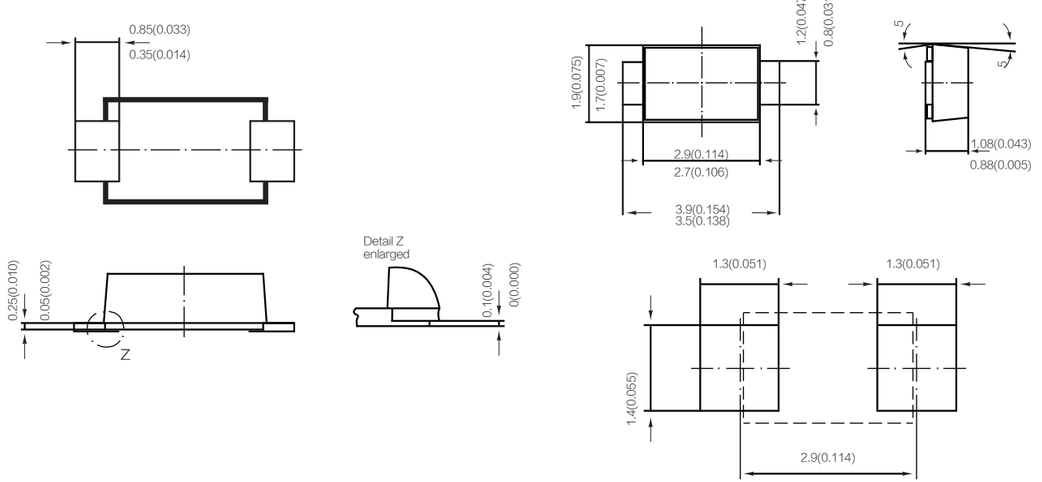
SMF Series 200W (SOD-123FL)

Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} ($V_{OL_{TE}}$)@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMF5.0CA	SMF5.0A	5.0CA	5.0A	5.0	6.40	7.00	10	400	21.70	9.2
SMF6.0CA	SMF6.0A	6.0CA	6.0A	6.0	6.67	7.37	10	400	19.40	10.3
SMF6.5CA	SMF6.5A	6.5CA	6.5A	6.5	7.22	7.98	10	250	17.90	11.2
SMF7.0CA	SMF7.0A	7.0CA	7.0A	7.0	7.78	8.60	10	100	16.70	12.0
SMF7.5CA	SMF7.5A	7.5CA	7.5A	7.5	8.33	9.21	1.0	50	15.50	12.9
SMF8.0CA	SMF8.0A	8.0CA	8.0A	8.0	8.89	9.83	1.0	25	14.70	13.6
SMF8.5CA	SMF8.5 A	8.5CA	8.5A	8.5	9.44	10.4	1.0	10	13.90	14.4
SMF9.0CA	SMF9.0 A	9.0CA	9.0A	9	10.0	11.1	1.0	5.0	13.00	15.4
SMF10CA	SMF10A	10CA	10A	10	11.1	12.3	1.0	2.0	11.80	17.0
SMF11CA	SMF11A	11CA	11A	11	12.2	13.5	1.0	2.0	11.00	18.2
SMF12CA	SMF12A	12CA	12A	12	13.3	14.7	1.0	2.0	10.10	19.9
SMF13CA	SMF13A	13CA	13A	13	14.4	15.9	1.0	1.0	9.30	21.5
SMF14CA	SMF14A	14CA	14A	14	15.6	17.2	1.0	1.0	8.62	23.2
SMF15CA	SMF15A	15CA	15A	15	16.7	18.5	1.0	1.0	8.20	24.4
SMF16CA	SMF16A	16CA	16A	16	17.8	19.7	1.0	1.0	7.69	26.0
SMF17CA	SMF17A	17CA	17A	17	18.9	20.9	1.0	1.0	7.25	27.6
SMF18CA	SMF18A	18CA	18A	18	20.0	22.1	1.0	1.0	6.85	29.2
SMF19CA	SMF19A	19CA	19A	19	21.0	23.3	1.0	1.0	6.54	30.6
SMF20CA	SMF20A	20CA	20A	20	22.2	24.5	1.0	1.0	6.17	32.4
SMF22CA	SMF22A	22CA	22A	22	24.4	26.9	1.0	1.0	5.63	35.5
SMF24CA	SMF24A	24CA	24A	24	26.7	29.5	1.0	1.0	5.14	38.9
SMF26CA	SMF26A	26CA	26A	26	28.9	31.9	1.0	1.0	4.75	42.1
SMF28CA	SMF28A	28CA	28A	28	31.1	34.4	1.0	1.0	4.41	45.4
SMF30CA	SMF30A	30CA	30A	30	33.3	36.8	1.0	1.0	4.13	48.4
SMF33CA	SMF33A	33CA	33A	33	36.7	40.6	1.0	1.0	3.75	53.3
SMF36CA	SMF36A	36CA	36A	36	40.0	44.2	1.0	1.0	3.44	58.1
SMF40CA	SMF40A	40CA	40A	40	44.4	49.1	1.0	1.0	3.10	64.5
SMF43CA	SMF43A	43CA	43A	43	47.8	52.8	1.0	1.0	2.88	69.4
SMF45CA	SMF45A	45CA	45A	45	50.0	55.3	1.0	1.0	2.75	72.7
SMF48CA	SMF48A	48CA	48A	48	53.3	58.9	1.0	1.0	2.58	77.4
SMF51CA	SMF51A	51CA	51A	51	56.7	62.7	1.0	1.0	2.43	82.4
SMF54CA	SMF54A	54CA	54A	54	60.0	66.3	1.0	1.0	2.30	87.1
SMF58CA	SMF58A	58CA	58A	58	64.4	71.2	1.0	1.0	2.14	93.6
SMF60CA	SMF60A	60CA	60A	60	66.7	73.7	1.0	1.0	2.07	96.8
SMF64CA	SMF64A	64CA	64A	64	71.1	78.6	1.0	1.0	1.94	103
SMF70CA	SMF70A	70CA	70A	70	77.8	86.0	1.0	1.0	1.77	113
SMF75CA	SMF75A	75CA	75A	75	83.3	92.1	1.0	1.0	1.65	121

SMF Series 200W (SOD-123FL)

Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} ($V_{OL_{TE}}$)@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMF78CA	SMF78A	78CA	78A	78	86.7	95.8	1.0	1.0	1.59	126
SMF80CA	SMF80A	80CA	80A	80	88.8	97.6	1.0	1.0	1.55	129
SMF85CA	SMF85A	85CA	85A	85	94.4	104	1.0	1.0	1.46	137
SMF90CA	SMF90A	90CA	90A	90	100	111	1.0	1.0	1.37	146
SMF100CA	SMF100A	100CA	100A	100	111	123	1.0	1.0	1.23	162
SMF110CA	SMF110A	110CA	110A	110	122	135	1.0	1.0	1.13	177
SMF120CA	SMF120A	120CA	120A	120	133	147	1.0	1.0	1.04	193
SMF130CA	SMF130A	130CA	130A	130	144	159	1.0	1.0	0.96	209
SMF140CA	SMF140A	140CA	140A	140	155	171	1.0	1.0	0.89	224
SMF150CA	SMF150A	150CA	150A	150	167	185	1.0	1.0	0.82	243
SMF160CA	SMF160A	160CA	160A	160	178	197	1.0	1.0	0.77	259
SMF170CA	SMF170A	170CA	170A	170	189	209	1.0	1.0	0.73	275
SMF180CA	SMF180A	180CA	180A	180	200	220	1.0	1.0	0.69	290

PACKAGE OUTLINE DIMENSIONS in millimeters (inches) SOD123FL



SMAJ Series 400W(DO-214AC)

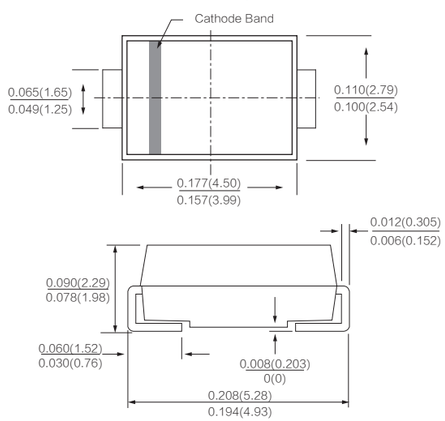
Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMAJ5.0CA	SMAJ5.0A	WE	AE	5.0	6.40	7.00	10	500	43.5	9.2
SMAJ6.0CA	SMAJ6.0A	WG	AG	6.0	6.67	7.37	10	500	38.8	10.3
SMAJ 6.5CA	SMAJ 6.5A	WK	AK	6.5	7.22	7.90	10	300	35.7	11.2
SMAJ7.0CA	SMAJ7.0A	WM	AM	7.0	7.78	8.60	10	200	33.3	12.0
SMAJ 7.5CA	SMAJ 7.5A	WP	AP	7.5	8.33	9.21	1	100	31.0	12.9
SMAJ 8.0CA	SMAJ 8.0A	WR	AR	8.0	8.89	9.83	1	50	29.4	13.6
SMAJ8.5CA	SMAJ8.5A	WT	AT	8.5	9.44	10.40	1	20	27.8	14.4
SMAJ9.0CA	SMAJ9.0A	WV	AV	9.0	10.00	11.10	1	10	26.0	15.4
SMAJ10CA	SMAJ10 A	WX	AX	10.0	11.10	12.30	1	5	23.5	17.0
SMAJ11CA	SMAJ11 A	WZ	AZ	11.0	12.20	13.50	1	1	22.0	18.2
SMAJ12CA	SMAJ12A	XE	BE	12.0	13.30	14.70	1	1	20.1	19.9
SMAJ13CA	SMAJ13A	XG	BG	13.0	14.40	15.90	1	1	18.6	21.5
SMAJ14CA	SMAJ14A	XK	BK	14.0	15.60	17.20	1	1	17.2	23.2
SMAJ15CA	SMAJ15A	XM	BM	15.0	16.70	18.50	1	1	16.4	24.4
SMAJ16CA	SMAJ16A	XP	BP	16.0	17.80	19.70	1	1	15.4	26.0
SMAJ17CA	SMAJ17A	XR	BR	17.0	18.90	20.90	1	1	14.5	27.6
SMAJ18CA	SMAJ18A	XT	BT	18.0	20.00	22.10	1	1	13.7	29.2
SMAJ20CA	SMAJ20A	XV	BV	20.0	22.20	24.50	1	1	12.3	32.4
SMAJ22CA	SMAJ22A	XX	BX	22.0	24.40	26.90	1	1	11.3	35.5
SMAJ24CA	SMAJ24A	XZ	BZ	24.0	26.70	29.50	1	1	10.3	38.9
SMAJ26CA	SMAJ26A	YE	CE	26.0	28.90	31.90	1	1	9.5	42.1
SMAJ28CA	SMAJ28A	YG	CG	28.0	31.10	34.40	1	1	8.8	45.4
SMAJ30CA	SMAJ30A	YK	CK	30.0	33.30	36.80	1	1	8.3	48.4
SMAJ33CA	SMAJ33A	YM	CM	33.0	36.70	40.60	1	1	7.5	53.3
SMAJ36CA	SMAJ36A	YP	CP	36.0	40.00	44.20	1	1	6.9	58.1
SMAJ40CA	SMAJ40A	YR	CR	40.0	44.40	49.10	1	1	6.2	64.5
SMAJ43CA	SMAJ43A	YT	CT	43.0	47.80	52.80	1	1	5.8	69.4
SMAJ45CA	SMAJ45A	YV	CV	45.0	50.00	55.30	1	1	5.5	72.7
SMAJ48CA	SMAJ48A	YX	CX	48.0	53.30	58.90	1	1	5.2	77.4
SMAJ51CA	SMAJ51A	YZ	CZ	51.0	56.70	62.70	1	1	4.9	82.4
SMAJ54CA	SMAJ54A	ZE	RE	54.0	60.00	66.30	1	1	4.6	87.1
SMAJ58CA	SMAJ58A	ZG	RG	58.0	64.40	71.20	1	1	4.3	93.6
SMAJ60CA	SMAJ60A	ZK	RK	60.0	66.70	73.70	1	1	4.1	96.8
SMAJ64CA	SMAJ64A	ZM	RM	64.0	71.10	78.60	1	1	3.9	103.0
SMAJ70CA	SMAJ70A	ZP	RP	70.0	77.80	86.00	1	1	3.5	113.0
SMAJ75CA	SMAJ75A	ZR	RR	75.0	83.30	92.10	1	1	3.3	121.0
SMAJ78CA	SMAJ78A	ZT	RT	78.0	86.70	95.80	1	1	3.2	126.0

SMAJ Series 400W(DO-214AC)

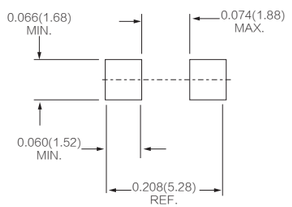
Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMAJ85CA	SMAJ85A	ZV	RV	85.0	94.4	104.0	1	1	2.9	137.0
SMAJ90CA	SMAJ90A	ZX	RX	90.0	100.0	111.0	1	1	2.7	146.0
SMAJ100CA	SMAJ100A	ZZ	RZ	100.0	111.0	123.0	1	1	2.5	162.0
SMAJ110CA	SMAJ110A	VE	SE	110.0	122.0	135.0	1	1	2.3	177.0
SMAJ120CA	SMAJ120A	VG	SG	120.0	133.0	147.0	1	1	2.1	193.0
SMAJ130CA	SMAJ130A	VK	SK	130.0	144.0	159.0	1	1	1.9	209.0
SMAJ150CA	SMAJ150A	VM	SM	150.0	167.0	185.0	1	1	1.6	243.0
SMAJ160CA	SMAJ160A	VP	SP	160.0	178.0	197.0	1	1	1.5	259.0
SMAJ170CA	SMAJ170A	VR	SR	170.0	189.0	209.0	1	1	1.5	275.0
SMAJ180CA	SMAJ180A	VT	ST	180.0	201.0	222.0	1	1	1.4	292.0
SMAJ190CA	SMAJ190A	YU	SU	190.0	211.0	233.0	1	1	1.3	308.0
SMAJ200CA	SMAJ200A	VV	SV	200.0	224.0	247.0	1	1	1.2	324.0
SMAJ210CA	SMAJ210A	YW	SW	210.0	237.0	263.0	1	1	1.2	340.0
SMAJ220CA	SMAJ220A	VX	GE	220.0	246.0	272.0	1	1	1.1	356.0
SMAJ250CA	SMAJ250A	VZ	SZ	250.0	279.0	309.0	1	1	1.0	405.0
SMAJ300CA	SMAJ300A	UE	TE	300.0	335.0	371.0	1	1	0.8	486.0
SMAJ350CA	SMAJ350A	UG	TG	350.0	391.0	432.0	1	1	0.7	567.0
SMAJ400CA	SMAJ400A	UK	TK	400.0	447.0	494.0	1	1	0.6	648.0
SMAJ440CA	SMAJ440A	UM	TM	440.0	492.0	543.0	1	1	0.6	713.0

PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-214AC

DO-214AC (SMA)



Mounting Pad Layout



SMBJ Series 600W (DO-214AA)

Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMBJ5.0CA	SMBJ5.0A	AE	KE	5.0	6.40	7.00	10	500	65.2	9.2
SMBJ6.0CA	SMBJ6.0A	AG	KG	6.0	6.67	7.37	10	500	58.3	10.3
SMBJ6.5CA	SMBJ6.5A	AK	KK	6.5	7.22	7.9	10	300	53.6	11.2
SMBJ7.0CA	SMBJ7.0A	AM	KM	7.0	7.78	8.60	10	200	50.0	12.0
SMBJ7.5CA	SMBJ7.5A	AP	KP	7.5	8.33	9.21	1	100	46.6	12.9
SMBJ8.0CA	SMBJ8.0A	AR	KR	8.0	8.89	9.83	1	50	44.2	13.6
SMBJ8.5CA	SMBJ8.5A	AT	KT	8.5	9.44	10.40	1	20	41.7	14.4
SMBJ9.0CA	SMBJ9.0A	AV	KV	9.0	10.00	11.10	1	10	39.0	15.4
SMBJ10CA	SMBJ10A	AX	KX	10.0	11.10	12.30	1	5	35.3	17.0
SMBJ11CA	SMBJ11A	AZ	KZ	11.0	12.20	13.50	1	1	33.0	18.2
SMBJ12CA	SMBJ12A	BE	LE	12.0	13.30	14.70	1	1	30.2	19.9
SMBJ13CA	SMBJ13A	BG	LG	13.0	14.40	15.90	1	1	28.0	21.5
SMBJ14CA	SMBJ14A	BK	LK	14.0	15.60	17.20	1	1	25.9	23.2
SMBJ15CA	SMBJ15A	BM	LM	15.0	16.70	18.50	1	1	24.6	24.4
SMBJ16CA	SMBJ16A	BP	LP	16.0	17.80	19.70	1	1	23.1	26.0
SMBJ17CA	SMBJ17A	BR	LR	17.0	18.90	20.90	1	1	21.8	27.6
SMBJ18CA	SMBJ18A	BT	LT	18.0	20.00	22.10	1	1	20.6	29.2
SMBJ20CA	SMBJ20A	BV	LV	20.0	22.20	24.50	1	1	18.6	32.4
SMBJ22CA	SMBJ22A	BX	LX	22.0	24.40	26.90	1	1	16.9	35.5
SMBJ24CA	SMBJ24A	BZ	LZ	24.0	26.70	29.50	1	1	15.5	38.9
SMBJ26CA	SMBJ26A	CE	ME	26.0	28.90	31.90	1	1	14.3	42.1
SMBJ28CA	SMBJ28A	CG	MG	28.0	31.10	34.40	1	1	13.3	45.4
SMBJ30CA	SMBJ30A	CK	MK	30.0	33.30	36.80	1	1	12.4	48.4
SMBJ33CA	SMBJ33A	CM	MM	33.0	36.70	40.60	1	1	11.3	53.3
SMBJ36CA	SMBJ36A	CP	MP	36.0	40.00	44.20	1	1	10.4	58.1
SMBJ40CA	SMBJ40A	CR	MR	40.0	44.40	49.10	1	1	9.3	64.5
SMBJ43CA	SMBJ43A	CT	MT	43.0	47.80	52.80	1	1	8.7	69.4
SMBJ45CA	SMBJ45A	CV	MV	45.0	50.00	55.30	1	1	8.3	72.7

SMBJ Series 600W (DO-214AA)

Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMBJ48CA	SMBJ48A	CX	MX	48.0	53.30	58.90	1	1	7.8	77.4
SMBJ51CA	SMBJ51A	CZ	MZ	51.0	56.70	62.70	1	1	7.3	82.4
SMBJ54CA	SMBJ54A	DE	NE	54.0	60.00	66.30	1	1	6.9	87.1
SMBJ58CA	SMBJ58A	DG	NG	58.0	64.40	71.20	1	1	6.5	93.6
SMBJ60CA	SMBJ60A	DK	NK	60.0	66.70	73.70	1	1	6.2	96.8
SMBJ64CA	SMBJ64A	DM	NM	64.0	71.10	78.60	1	1	5.9	103.0
SMBJ70CA	SMBJ70A	DP	NP	70.0	77.80	86.00	1	1	5.3	113.0
SMBJ75CA	SMBJ75A	DR	NR	75.0	83.30	92.10	1	1	5.0	121.0
SMBJ78CA	SMBJ78A	DT	NT	78.0	86.70	95.80	1	1	4.8	126.0
SMBJ85CA	SMBJ85A	DV	NV	85.0	94.4	104.0	1	1	4.4	137.0
SMBJ90CA	SMBJ90A	DX	NX	90.0	100.0	111.0	1	1	4.1	146.0
SMBJ100CA	SMBJ100A	DZ	NZ	100.0	111.0	123.0	1	1	3.7	162.0
SMBJ110CA	SMBJ110A	EE	PE	110.0	122.0	135.0	1	1	3.4	177.0
SMBJ120CA	SMBJ120A	EG	PG	120.0	133.0	147.0	1	1	3.1	193.0
SMBJ130CA	SMBJ130A	EK	PK	130.0	144.0	159.0	1	1	2.9	209.0
SMBJ150CA	SMBJ150A	EM	PM	150.0	167.0	185.0	1	1	2.5	243.0
SMBJ160CA	SMBJ160A	EP	PP	160.0	178.0	197.0	1	1	2.3	259.0
SMBJ170CA	SMBJ170A	ER	PR	170.0	189.0	209.0	1	1	2.2	275.0
SMBJ180CA	SMBJ180A	ET	PT	180.0	201.0	222.0	1	1	2.1	292.0
SMBJ190CA	SMBJ190A	EC	PA	190.0	211.0	233.0	1	1	2.0	308.0
SMBJ200CA	SMBJ200A	EV	PV	200.0	224.0	247.0	1	1	1.9	324.0
SMBJ210CA	SMBJ210A	ED	PB	210.0	237.0	263.0	1	1	1.8	340.0
SMBJ220CA	SMBJ220A	EX	PX	220.0	246.0	272.0	1	1	1.7	356.0
SMBJ250CA	SMBJ250A	EZ	PZ	250.0	279.0	309.0	1	1	1.5	405.0
SMBJ300CA	SMBJ300A	FE	QE	300.0	335.0	371.0	1	1	1.3	486.0
SMBJ350CA	SMBJ350A	FG	QG	350.0	391.0	432.0	1	1	1.1	567.0
SMBJ400CA	SMBJ400A	FK	QK	400.0	447.0	494.0	1	1	0.9	648.0
SMBJ440CA	SMBJ440A	FM	QM	440.0	492.0	543.0	1	1	0.9	713.0

P6SMB Series 600W (DO-214AA)

Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
P6SMB6.8CA	P6SMB6.8A	6V8C	6V8A	5.8	6.45	7.14	10	800	58.1	10.5
P6SMB7.5CA	P6SMB7.5A	7V5C	7V5A	6.4	7.13	7.88	10	500	54.0	11.3
P6SMB8.2CA	P6SMB8.2A	8V2C	8V2A	7.02	7.79	8.61	10	200	50.4	12.1
P6SMB9.1CA	P6SMB9.1A	9V1C	9V1A	7.78	8.65	9.55	10	50	45.5	13.4
P6SMB10CA	P6SMB10A	10C	10A	8.55	9.50	10.50	10	10	42.1	14.5
P6SMB11CA	P6SMB11A	11C	11A	9.40	10.50	11.60	1	5	39.1	15.6
P6SMB12CA	P6SMB12A	12C	12A	10.20	11.40	12.60	1	5	36.5	16.7
P6SMB13CA	P6SMB13A	13C	13A	11.10	12.40	13.70	1	1	33.5	18.2
P6SMB15CA	P6SMB15A	15C	15A	12.80	14.30	15.80	1	1	28.8	21.2
P6SMB16CA	P6SMB16A	16C	16A	13.60	15.20	16.80	1	1	27.1	22.5
P6SMB18CA	P6SMB18A	18C	18A	15.30	17.10	18.90	1	1	24.2	25.2
P6SMB20CA	P6SMB20A	20C	20A	17.10	19.00	21.00	1	1	22.0	27.7
P6SMB22CA	P6SMB22A	22C	22A	18.80	20.90	23.10	1	1	19.9	30.6
P6SMB24CA	P6SMB24A	24C	24A	20.50	22.80	25.20	1	1	18.4	33.2
P6SMB27CA	P6SMB27A	27C	27A	23.10	25.70	28.40	1	1	16.3	37.5
P6SMB30CA	P6SMB30A	30C	30A	25.60	28.50	31.50	1	1	14.7	41.4
P6SMB33CA	P6SMB33A	33C	33A	28.20	31.40	34.70	1	1	13.3	45.7
P6SMB36CA	P6SMB36A	36C	36A	30.80	34.20	37.80	1	1	12.2	49.9
P6SMB39CA	P6SMB39A	39C	39A	33.30	37.10	41.00	1	1	11.3	53.9
P6SMB43CA	P6SMB43A	43C	43A	36.80	40.90	45.20	1	1	10.3	59.3
P6SMB47CA	P6SMB47A	47C	47A	40.20	44.70	49.40	1	1	9.4	64.8
P6SMB51CA	P6SMB51A	51C	51A	43.60	48.50	53.60	1	1	8.7	70.1
P6SMB56CA	P6SMB56A	56C	56A	47.80	53.20	58.80	1	1	7.9	77.0
P6SMB62CA	P6SMB62A	62C	62A	53.00	58.90	65.10	1	1	7.2	85.0
P6SMB68CA	P6SMB68A	68C	68A	58.10	64.60	71.40	1	1	6.6	92.0
P6SMB75CA	P6SMB75A	75C	75A	64.10	71.30	78.00	1	1	5.9	103.0
P6SMB82CA	P6SMB82A	82C	82A	70.10	77.90	86.10	1	1	5.4	113.0
P6SMB91CA	P6SMB91A	91C	91A	77.80	86.50	95.50	1	1	4.9	125.0
P6SMB100CA	P6SMB100A	100C	100A	85.50	95.0	105.0	1	1	4.5	137.0
P6SMB110CA	P6SMB110A	110C	110A	94.00	105.0	116.0	1	1	4.0	152.0
P6SMB120CA	P6SMB120A	120C	120A	102.0	114.0	126.0	1	1	3.7	165.0
P6SMB130CA	P6SMB130A	130C	130A	111.0	124.0	137.0	1	1	3.4	179.0
P6SMB150CA	P6SMB150A	150C	150A	128.0	143.0	158.0	1	1	2.9	207.0
P6SMB160CA	P6SMB160A	160C	160A	136.0	152.0	168.0	1	1	2.8	219.0
P6SMB170CA	P6SMB170A	170C	170A	145.0	162.0	179.0	1	1	2.6	234.0
P6SMB180CA	P6SMB180A	180C	180A	154.0	171.0	189.00	1	1	2.5	246.0
P6SMB200CA	P6SMB200A	200C	200A	171.0	190.0	210.0	1	1	2.2	274.0

P8SMB Series 800W (DO-214AA)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
P8SMB5.0CA	P8SMB5.0A	5.0	6.4	7.25	10	800	86.96	9.2
P8SMB6.0CA	P8SMB6.0A	6.0	6.67	7.67	10	800	77.67	10.3
P8SMB6.5CA	P8SMB6.5A	6.5	7.22	8.30	10	500	71.43	11.2
P8SMB7.0CA	P8SMB7.0A	7.0	7.78	8.95	10	200	66.67	12.0
P8SMB7.5CA	P8SMB7.5A	7.5	8.33	9.58	1	100	62.02	12.9
P8SMB8.0CA	P8SMB8.0A	8.0	8.89	10.23	1	50	58.82	13.6
P8SMB8.5CA	P8SMB8.5A	8.5	9.44	10.82	1	20	55.56	14.4
P8SMB9.0CA	P8SMB9.0A	9.0	10.00	11.50	1	10	51.95	15.4
P8SMB10CA	P8SMB10A	10.0	11.1	12.3	1	10	47.06	17.0
P8SMB11CA	P8SMB11A	11.0	12.20	14.00	1	1	43.96	18.2
P8SMB12CA	P8SMB12A	12.0	13.3	14.7	1	1	40.20	19.9
P8SMB13CA	P8SMB13A	13.0	14.40	16.50	1	1	37.21	21.5
P8SMB14CA	P8SMB14A	14.0	15.60	17.2	1	1	34.48	23.2
P8SMB15CA	P8SMB15A	15.0	16.70	19.20	1	1	32.79	24.4
P8SMB16CA	P8SMB16A	16.0	17.8	19.7	1	1	30.77	26.0
P8SMB17CA	P8SMB17A	17.0	18.90	21.70	1	1	28.99	27.6
P8SMB18CA	P8SMB18A	18.0	20.00	23.30	1	1	27.40	29.2
P8SMB20CA	P8SMB20A	20.0	22.20	25.50	1	1	24.69	32.4
P8SMB22CA	P8SMB22A	22.0	24.40	28.00	1	1	22.54	35.5
P8SMB24CA	P8SMB24A	24.0	26.70	30.70	1	1	20.57	38.9
P8SMB26CA	P8SMB26A	26.0	28.90	33.20	1	1	19.00	42.1
P8SMB28CA	P8SMB28A	28.0	31.10	35.80	1	1	17.62	45.4
P8SMB30CA	P8SMB30A	30.0	33.30	38.30	1	1	16.53	48.4
P8SMB33CA	P8SMB33A	33.0	36.70	42.20	1	1	15.01	53.3
P8SMB36CA	P8SMB36A	36.0	40.00	46.00	1	1	13.77	58.1

P8SMB Series 800W (DO-214AA)

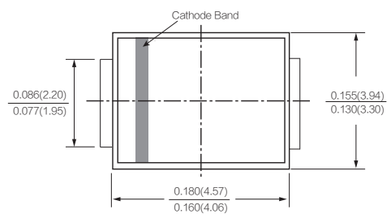
Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
P8SMB40CA	P8SMB40A	40.0	44.40	51.10	1	1	12.40	64.5
P8SMB43CA	P8SMB43A	43.0	47.80	52.80	1	1	11.53	69.4
P8SMB45CA	P8SMB45A	45.0	50.00	57.50	1	1	11.00	72.7
P8SMB48CA	P8SMB48A	48.0	53.3	58.9	1	1	10.34	77.4
P8SMB51CA	P8SMB51A	51.0	56.70	65.20	1	1	9.71	82.4
P8SMB54CA	P8SMB54A	54.0	60.0	66.3	1	1	9.18	87.1
P8SMB58CA	P8SMB58A	58.0	64.40	74.10	1	1	8.55	93.6
P8SMB60CA	P8SMB60A	60.0	66.7	73.7	1	1	8.26	96.8
P8SMB64CA	P8SMB64A	64.0	71.10	81.80	1	1	7.77	103.0
P8SMB70CA	P8SMB70A	70.0	77.80	89.50	1	1	7.08	113.0
P8SMB75CA	P8SMB75A	75.0	83.3	92.1	1	1	6.61	121.0
P8SMB78CA	P8SMB78A	78.0	86.70	99.70	1	1	6.35	126.0
P8SMB85CA	P8SMB85A	85.0	94.40	108.20	1	1	5.84	137.0
P8SMB90CA	P8SMB90A	90.0	100.0	111.0	1	1	5.48	146.0
P8SMB100CA	P8SMB100A	100.0	110.00	128.00	1	1	4.94	162.0
P8SMB110CA	P8SMB110A	110.0	122.00	140.50	1	1	4.52	177.0
P8SMB120CA	P8SMB120A	120.0	133.00	147.00	1	1	4.15	193.0
P8SMB130CA	P8SMB130A	130.0	144.00	165.50	1	1	3.83	209.0
P8SMB150CA	P8SMB150A	150.0	167.00	192.50	1	1	3.29	243.0
P8SMB160CA	P8SMB160A	160.0	178.00	197.00	1	1	3.09	259.0
P8SMB170CA	P8SMB170A	170.0	189.00	217.50	1	1	2.91	275.0
P8SMB180CA	P8SMB180A	180.0	201.00	222.00	1	1	2.74	292.0
P8SMB200CA	P8SMB200A	200.0	224.00	247.00	1	1	2.47	324.0
P8SMB220CA	P8SMB220A	220.0	246.00	272.00	1	1	2.25	356.0
P8SMB350CA	P8SMB350A	350	391	432	1	1	1.41	567

1.0SMB Series 1000W (DO-214AA)

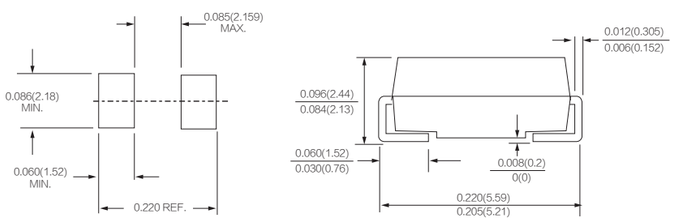
Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
1.0SMB6.8CA	1.0SMB6.8A	N10A	A10A	5.8	6.46	7.14	10	900	95.2	10.5
1.0SMB7.5CA	1.0SMB7.5A	N10B	A10B	6.4	7.13	7.88	10	400	88.5	11.3
1.0SMB8.2CA	1.0SMB8.2A	N10C	A10C	7.0	7.79	8.61	10	180	82.6	12.1
1.0SMB9.1CA	1.0SMB9.1A	N10D	A10D	7.8	8.65	9.56	1	45	74.6	13.4
1.0SMB10CA	1.0SMB10A	N10E	A10E	8.6	9.50	10.50	1	8	69.0	14.5
1.0SMB11CA	1.0SMB11A	N10F	A10F	9.4	10.45	11.55	1	4	64.1	15.6
1.0SMB12CA	1.0SMB12A	N10G	A10G	10.2	11.40	12.60	1	1	59.9	16.7
1.0SMB13CA	1.0SMB13A	N10H	A10H	11.1	12.35	13.65	1	1	54.9	18.2
1.0SMB15CA	1.0SMB15A	N10I	A10I	12.8	14.25	15.75	1	1	47.2	21.2
1.0SMB16CA	1.0SMB16A	N10J	A10J	13.6	15.20	16.80	1	1	44.4	22.5
1.0SMB18CA	1.0SMB18A	N10K	A10K	15.3	17.10	18.90	1	1	39.7	25.2
1.0SMB20CA	1.0SMB20A	N10L	A10L	17.1	19.00	21.00	1	1	36.1	27.7
1.0SMB22CA	1.0SMB22A	N10M	A10M	18.8	20.90	23.10	1	1	32.7	30.6
1.0SMB24CA	1.0SMB24A	N10N	A10N	20.5	22.80	25.20	1	1	30.1	33.2
1.0SMB27CA	1.0SMB27A	N10O	A10O	23.1	25.65	28.35	1	1	26.7	37.5
1.0SMB30CA	1.0SMB30A	N10P	A10P	25.6	28.50	31.50	1	1	24.2	41.4
1.0SMB33CA	1.0SMB33A	N10Q	A10Q	28.2	31.35	34.65	1	1	21.9	45.7
1.0SMB36CA	1.0SMB36A	N10R	A10R	30.8	34.20	37.80	1	1	20.0	49.9
1.0SMB39CA	1.0SMB39A	N10S	A10S	33.3	37.05	40.95	1	1	18.6	53.9
1.0SMB43CA	1.0SMB43A	N10T	A10T	36.8	40.85	45.15	1	1	16.9	59.3
1.0SMB47CA	1.0SMB47A	N10U	A10U	40.2	44.65	49.35	1	1	15.4	64.8

PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-214AA

DO-214AA (SMB)



Mounting Pad Layout



SMCJ Series 1500W(DO-214AB)

Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMCJ5.0CA	SMCJ5.0A	BDE	GDE	5.0	6.40	7.00	10	500	163.0	9.2
SMCJ6.0CA	SMCJ6.0A	BDG	GDG	6.0	6.67	7.37	10	500	145.6	10.3
SMCJ6.5CA	SMCJ6.5A	BDK	GDK	6.5	7.22	7.90	10	300	134.0	11.2
SMCJ7.0CA	SMCJ7.0A	BDM	GDM	7.0	7.78	8.60	10	200	125.0	12.0
SMCJ7.5CA	SMCJ7.5A	BDP	GDP	7.5	8.33	9.21	1	100	116.3	12.9
SMCJ8.0CA	SMCJ8.0A	BDR	GDR	8.0	8.89	9.83	1	50	110.3	13.6
SMCJ8.5CA	SMCJ8.5A	BDT	GDT	8.5	9.44	10.40	1	20	104.2	14.4
SMCJ9.0CA	SMCJ9.0A	BDV	GDV	9.0	10.00	11.10	1	10	97.4	15.4
SMCJ10CA	SMCJ10A	BDX	GDX	10.0	11.10	12.30	1	1	88.3	17.0
SMCJ11CA	SMCJ11A	BDZ	GDZ	11.0	12.20	13.50	1	1	82.5	18.2
SMCJ12CA	SMCJ12A	BEE	GEE	12.0	13.30	14.70	1	1	75.4	19.9
SMCJ13CA	SMCJ13A	BEG	GEG	13.0	14.40	15.90	1	1	69.8	21.5
SMCJ14CA	SMCJ14A	BEK	GEK	14.0	15.60	17.20	1	1	64.7	23.2
SMCJ15CA	SMCJ15A	BEM	GEM	15.0	16.70	18.50	1	1	61.5	24.4
SMCJ16CA	SMCJ16A	BEP	GEP	16.0	17.80	19.70	1	1	57.7	26.0
SMCJ17CA	SMCJ17A	BER	GER	17.0	18.90	20.90	1	1	54.4	27.6
SMCJ18CA	SMCJ18A	BET	GET	18.0	20.00	22.10	1	1	51.4	29.2
SMCJ20CA	SMCJ20A	BEV	GEV	20.0	22.20	24.50	1	1	46.3	32.4
SMCJ22CA	SMCJ22A	BEX	GEX	22.0	24.40	26.90	1	1	42.3	35.5
SMCJ24CA	SMCJ24A	BEZ	GEZ	24.0	26.70	29.50	1	1	38.6	38.9
SMCJ26CA	SMCJ26A	BFE	GFE	26.0	28.90	31.90	1	1	35.7	42.1
SMCJ28CA	SMCJ28A	BFG	GFG	28.0	31.10	34.40	1	1	33.1	45.4
SMCJ30CA	SMCJ30A	BFK	GFK	30.0	33.30	36.80	1	1	31.0	48.4
SMCJ33CA	SMCJ33A	BFM	GFM	33.0	36.70	40.60	1	1	28.2	53.3
SMCJ36CA	SMCJ36A	BFP	GFP	36.0	40.00	44.20	1	1	25.9	58.1
SMCJ40CA	SMCJ40A	BFR	GFR	40.0	44.40	49.10	1	1	23.3	64.5
SMCJ43CA	SMCJ43A	BFT	GFT	43.0	47.80	52.80	1	1	21.7	69.4
SMCJ45CA	SMCJ45A	BFV	GFV	45.0	50.00	55.30	1	1	20.6	72.7

SMCJ Series 1500W(DO-214AB)

Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMCJ48CA	SMCJ48A	BFX	GFX	48.0	53.30	58.90	1	1	19.4	77.4
SMCJ51CA	SMCJ51A	BFZ	GFZ	51.0	56.70	62.70	1	1	18.2	82.4
SMCJ54CA	SMCJ54A	BGE	GGE	54.0	60.00	66.30	1	1	17.3	87.1
SMCJ58CA	SMCJ58A	BGG	GGG	58.0	64.40	71.20	1	1	16.1	93.6
SMCJ60CA	SMCJ60A	BGK	GGK	60.0	66.70	73.70	1	1	15.5	96.8
SMCJ64CA	SMCJ64A	BGM	GGM	64.0	71.10	78.60	1	1	14.6	103.0
SMCJ70CA	SMCJ70A	BGP	GGP	70.0	77.80	86.00	1	1	13.3	113.0
SMCJ75CA	SMCJ75A	BGR	GGR	75.0	83.30	92.10	1	1	12.4	121.0
SMCJ78CA	SMCJ78A	BGT	GGT	78.0	86.70	95.80	1	1	11.9	126.0
SMCJ85CA	SMCJ85A	BGV	GGV	85.0	94.4	104.0	1	1	11.0	137.0
SMCJ90CA	SMCJ90A	BGX	GGX	90.0	100.0	111.0	1	1	10.3	146.0
SMCJ100CA	SMCJ100A	BGZ	GGZ	100.0	111.0	123.0	1	1	9.3	162.0
SMCJ110CA	SMCJ110A	BHE	GHE	110.0	122.0	135.0	1	1	8.5	177.0
SMCJ120CA	SMCJ120A	BHG	GHG	120.0	133.0	147.0	1	1	7.8	193.0
SMCJ130CA	SMCJ130A	BHK	GHK	130.0	144.0	159.0	1	1	7.2	209.0
SMCJ150CA	SMCJ150A	BHM	GHM	150.0	167.0	185.0	1	1	6.2	243.0
SMCJ160CA	SMCJ160A	BHP	GHP	160.0	178.0	197.0	1	1	5.8	259.0
SMCJ170CA	SMCJ170A	BHR	GHR	170.0	189.0	209.0	1	1	5.5	275.0
SMCJ180CA	SMCJ180A	BHT	GHT	180.0	201.0	222.0	1	1	5.1	292.0
SMCJ190CA	SMCJ190A	BHU	GHU	190.0	211.0	233.0	1	1	4.8	308.0
SMCJ200CA	SMCJ200A	BHV	GHV	200.0	224.0	247.0	1	1	4.6	324.0
SMCJ210CA	SMCJ210A	BHW	GHW	210.0	237.0	263.0	1	1	4.4	340.0
SMCJ220CA	SMCJ220A	BHX	GHX	220.0	246.0	272.0	1	1	4.2	356.0
SMCJ250CA	SMCJ250A	BHZ	GHZ	250.0	279.0	309.0	1	1	3.7	405.0
SMCJ300CA	SMCJ300A	BJE	GJE	300.0	335.0	371.0	1	1	3.1	486.0
SMCJ350CA	SMCJ350A	BJG	GJG	350.0	391.0	432.0	1	1	2.6	567.0
SMCJ400CA	SMCJ400A	BJK	GJK	400.0	447.0	494.0	1	1	2.3	648.0
SMCJ440CA	SMCJ440A	BJM	GJM	440.0	492.0	543.0	1	1	2.1	713.0

SMDJ Series 3000W(DO-214AB)

Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMDJ5.0CA	SMDJ5.0A	DDE	RDE	5.0	6.40	7.00	10	800	326.1	9.2
SMDJ6.0CA	SMDJ6.0A	DDG	RDG	6.0	6.67	7.37	10	800	291.3	10.3
SMDJ6.5CA	SMDJ6.5A	DDK	RDK	6.5	7.22	7.98	10	500	267.9	11.2
SMDJ7.0CA	SMDJ7.0 A	DDM	PDM	7.0	7.78	8.60	10	200	250.0	12.0
SMDJ7.5CA	SMDJ7.5A	DDP	PDP	7.5	8.33	9.21	1	100	232.6	12.9
SMDJ8.0CA	SMDJ8.0A	DDR	PDR	8.0	8.89	9.83	1	50	220.6	13.6
SMDJ8.5CA	SMDJ8.5A	DDT	PDT	8.5	9.44	10.40	1	20	208.3	14.4
SMDJ9.0CA	SMDJ9.0A	DDV	PDV	9.0	10.00	11.10	1	10	194.8	15.4
SMDJ10CA	SMDJ10A	DDX	PDX	10.0	11.10	12.30	1	5	176.5	17.0
SMDJ11CA	SMDJ11A	DDZ	PDZ	11.0	12.20	13.50	1	2	164.8	18.2
SMDJ12CA	SMDJ12A	DEE	PEE	12.0	13.30	14.70	1	2	150.8	19.9
SMDJ13CA	SMDJ13A	DEG	PEG	13.0	14.40	15.90	1	2	139.5	21.5
SMDJ14CA	SMDJ14A	DEK	PEK	14.0	15.60	17.20	1	2	129.3	23.2
SMDJ15CA	SMDJ15A	DEM	PEM	15.0	16.70	18.50	1	2	123.0	24.4
SMDJ16CA	SMDJ16A	DEP	PEP	16.0	17.80	19.70	1	2	115.4	26.0
SMDJ17CA	SMDJ17A	DER	PER	17.0	18.90	20.90	1	2	108.7	27.6
SMDJ18CA	SMDJ18A	DET	PET	18.0	20.00	22.10	1	2	102.7	29.2
SMDJ20CA	SMDJ20A	DEV	PEV	20.0	22.20	24.50	1	2	92.6	32.4
SMDJ22CA	SMDJ22A	DEX	PEX	22.0	24.40	26.90	1	2	84.5	35.5
SMDJ24CA	SMDJ24A	DEZ	PEZ	24.0	26.70	29.50	1	2	77.1	38.9
SMDJ26CA	SMDJ26A	DFE	PFE	26.0	28.90	31.90	1	2	71.3	42.1
SMDJ28CA	SMDJ28A	DFG	PFG	28.0	31.10	34.40	1	2	66.1	45.4
SMDJ30CA	SMDJ30A	DFK	PFK	30.0	33.30	36.80	1	2	62.0	48.4
SMDJ33CA	SMDJ33A	DFM	PFM	33.0	36.70	40.60	1	2	56.3	53.3
SMDJ36CA	SMDJ36A	DFP	PFP	36.0	40.00	44.20	1	2	51.6	58.1
SMDJ40CA	SMDJ40A	DFR	PFR	40.0	44.40	49.10	1	2	46.5	64.5

SMDJ Series 3000W(DO-214AB)

Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
SMDJ43CA	SMDJ43A	DFT	PFT	43.0	47.80	52.80	1	2	43.2	69.4
SMDJ45CA	SMDJ45A	DFV	PFV	45.0	50.00	55.30	1	2	41.3	72.7
SMDJ48CA	SMDJ48A	DFX	PFX	48.0	53.30	58.90	1	2	38.8	77.4
SMDJ51CA	SMDJ51A	DFZ	PFZ	51.0	56.70	62.70	1	2	36.4	82.4
SMDJ54CA	SMDJ54A	DGE	RGE	54.0	60.00	66.30	1	2	34.4	87.1
SMDJ58CA	SMDJ58A	DGG	PGG	58.0	64.40	71.20	1	2	32.1	93.6
SMDJ60CA	SMDJ60A	DGK	PGK	60.0	66.70	73.70	1	2	31.0	96.8
SMDJ64CA	SMDJ64A	DGM	PGM	64.0	71.10	78.60	1	2	29.1	103.0
SMDJ70CA	SMDJ70A	DGP	PGP	70.0	77.80	86.00	1	2	26.5	113.0
SMDJ75CA	SMDJ75A	DGR	PGR	75.0	83.30	92.10	1	2	24.8	121.0
SMDJ78CA	SMDJ78A	DGT	PGT	78.0	86.70	95.80	1	2	23.8	126.0
SMDJ85CA	SMDJ85A	DGV	PGV	85.0	94.40	104.0	1	2	21.9	137.0
SMDJ90CA	SMDJ90A	DGX	PGX	90.0	100.0	111.0	1	2	20.5	146.0
SMDJ100CA	SMDJ100A	DGZ	PGZ	100.0	111.0	123.0	1	2	18.5	162.0
SMDJ110CA	SMDJ110A	DHE	PHE	110.0	122.0	135.0	1	2	16.9	177.0
SMDJ120CA	SMDJ120A	DHG	PHG	120.0	133.0	147.0	1	2	15.5	193.0
SMDJ130CA	SMDJ130A	DHK	PHK	130.0	144.0	159.0	1	2	14.4	209.0
SMDJ150CA	SMDJ150A	DHM	PHM	150.0	167.0	185.0	1	2	12.3	243.0
SMDJ160CA	SMDJ160A	DHP	PHP	160.0	178.0	197.0	1	2	11.6	259.0
SMDJ170CA	SMDJ170A	DHR	PHR	170.0	189.0	209.0	1	2	10.9	275.0
SMDJ180CA	SMDJ180A	IHT	HHT	180.0	201.0	222.0	1	2	10.3	292.0
SMDJ190CA	SMDJ190A	IHV	HHV	190.0	211.0	233.0	1	2	9.7	308.0
SMDJ200CA	SMDJ200A	IHX	HHX	200.0	224.0	247.0	1	2	9.3	324.0
SMDJ210CA	SMDJ210A	IHZ	HHZ	210.0	237.0	263.0	1	2	8.8	340.0
SMDJ220CA	SMDJ220A	IIIE	HIE	220.0	246.0	272.0	1	2	8.4	356.0

5.0SMDJ Series 5000W(DO-214AB)

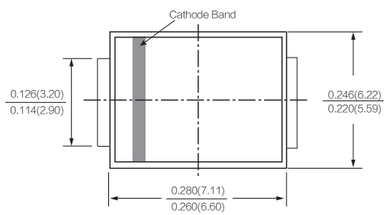
Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
5.0SMDJ11CA	5.0SMDJ11A	5BEN	5PEN	11.0	12.20	13.50	10	800	275.00	18.2
5.0SMDJ12CA	5.0SMDJ12A	5BEP	5PEP	12.0	13.30	14.70	10	800	252.00	19.9
5.0SMDJ13CA	5.0SMDJ13A	5BEQ	5PEQ	13.0	14.40	15.90	10	500	233.00	21.5
5.0SMDJ14CA	5.0SMDJ14A	5BER	5PER	14.0	15.60	17.20	10	200	216.00	23.2
5.0SMDJ15CA	5.0SMDJ15A	5BES	5PES	15.0	16.70	18.50	1	100	205.00	24.4
5.0SMDJ16CA	5.0SMDJ16A	5BET	5PET	16.0	17.80	19.70	1	50	193.00	26.0
5.0SMDJ17CA	5.0SMDJ17A	5BEU	5PEU	17.0	18.90	20.90	1	20	181.00	27.6
5.0SMDJ18CA	5.0SMDJ18A	5BEV	5PEV	18.0	20.00	22.10	1	10	172.00	29.2
5.0SMDJ20CA	5.0SMDJ20A	5BEW	5PEW	20.0	22.20	24.50	1	2	155.00	32.4
5.0SMDJ22CA	5.0SMDJ22A	5BEX	5PEX	22.0	24.40	26.90	1	2	141.00	35.5
5.0SMDJ24CA	5.0SMDJ24A	5BEZ	5PEZ	24.0	26.70	29.50	1	2	129.00	38.9
5.0SMDJ26CA	5.0SMDJ26A	5BFE	5PFE	26.0	28.90	31.90	1	2	119.00	42.1
5.0SMDJ28CA	5.0SMDJ28A	5BFG	5PFG	28.0	31.10	34.40	1	2	110.00	45.4
5.0SMDJ30CA	5.0SMDJ30A	5BFK	5PFK	30.0	33.30	36.80	1	2	103.00	48.4
5.0SMDJ33CA	5.0SMDJ33A	5BFM	5PFM	33.0	36.70	40.60	1	2	93.90	53.3
5.0SMDJ36CA	5.0SMDJ36A	5BFP	5PFP	36.0	40.00	44.20	1	2	86.10	58.1
5.0SMDJ40CA	5.0SMDJ40A	5BFR	5PFR	40.0	44.40	49.10	1	2	77.60	64.5
5.0SMDJ43CA	5.0SMDJ43A	5BFT	5PFT	43.0	47.80	52.80	1	2	72.10	69.4
5.0SMDJ45CA	5.0SMDJ45A	5BFV	5PFV	45.0	50.00	55.30	1	2	68.80	72.7
5.0SMDJ48CA	5.0SMDJ48A	5BFX	5PFX	48.0	53.30	58.90	1	2	64.70	77.4
5.0SMDJ51CA	5.0SMDJ51A	5BFZ	5PFZ	51.0	56.70	62.70	1	2	60.70	82.4
5.0SMDJ54CA	5.0SMDJ54A	5BGE	5PGE	54.0	60.00	66.30	1	2	57.50	87.1
5.0SMDJ58CA	5.0SMDJ58A	5BGG	5PGG	58.0	64.40	71.20	1	2	53.50	93.6
5.0SMDJ60CA	5.0SMDJ60A	5BGK	5PGK	60.0	66.70	73.70	1	2	51.70	96.8
5.0SMDJ64CA	5.0SMDJ64A	5BGM	5PGM	64.0	71.10	78.60	1	2	48.60	103.0

5.0SMDJ Series 5000W(DO-214AB)

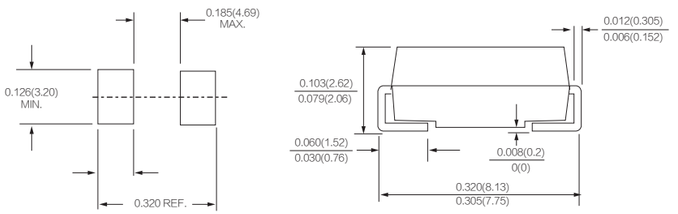
Part Number (Bi)	Part Number (Uni)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Vol_{ts})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
		BI	UNI		Min .V	Max.V				
5.0SMDJ70CA	5.0SMDJ70A	5BGP	5PGP	70.0	77.80	86.00	1	2	44.30	113.0
5.0SMDJ75CA	5.0SMDJ75A	5BGR	5PGR	75.0	83.30	92.10	1	2	41.40	121.0
5.0SMDJ78CA	5.0SMDJ78A	5BGT	5PGT	78.0	86.70	95.80	1	2	39.70	126.0
5.0SMDJ85CA	5.0SMDJ85A	5BGV	5PGV	85.0	94.40	104.00	1	2	36.50	137.0
5.0SMDJ90CA	5.0SMDJ90A	5BGX	5PGX	90.0	100.00	111.00	1	2	34.30	146.0
5.0SMDJ100CA	5.0SMDJ100A	5BGZ	5PGZ	100.0	111.00	123.00	1	2	30.90	162.0
5.0SMDJ110CA	5.0SMDJ110A	5BHE	5PHE	110.0	122.00	135.00	1	2	28.30	177.0
5.0SMDJ120CA	5.0SMDJ120A	5BHG	5PHG	120.0	133.00	147.00	1	2	26.00	193.0
5.0SMDJ130CA	5.0SMDJ130A	5BHK	5PHK	130.0	144.00	159.00	1	2	24.00	209.0
5.0SMDJ150CA	5.0SMDJ150A	5BHM	5PHM	150.0	167.00	185.00	1	2	20.60	243.0
5.0SMDJ160CA	5.0SMDJ160A	5BHB	5PHP	160.0	178.00	197.00	1	2	19.30	259.0
5.0SMDJ170CA	5.0SMDJ170A	5BHR	5PHR	170.0	189.00	209.00	1	2	18.20	275.0

PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-214AB

DO-214AB(SMC)



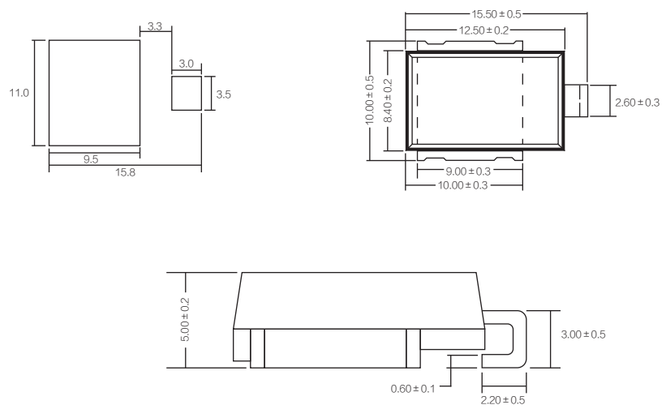
Mounting Pad Layout



SM8 Series 6600W(DO-218AB)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} ($V_{OL_{IS}}$)@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum I_R @V_{RWM} T_J=175 (uA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V					
SM8S18CA	SM8S18A	18	20.00	22.10	5	10	150	226.0	29.2
SM8S22CA	SM8S22A	22	24.40	26.90	5	10	150	186.0	35.5
SM8S24CA	SM8S24A	24	26.70	29.50	5	10	150	170.0	38.9
SM8S26CA	SM8S26A	26	28.90	31.90	5	10	150	157.0	42.1
SM8S28CA	SM8S28A	28	31.10	34.40	5	10	150	145.0	45.4
SM8S30CA	SM8S30A	30	33.30	36.80	5	10	150	136.0	48.4
SM8S33CA	SM8S33A	33	36.70	40.60	5	10	150	124.0	53.3
SM8S36CA	SM8S36A	36	40.00	44.20	5	10	150	114.0	58.1
SM8S40CA	SM8S40A	40	44.40	49.10	5	10	150	102.0	64.5
SM8S43CA	SM8S43A	43	47.80	52.80	5	10	150	95.1	69.4

PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-218AB



SA Series 500W (DO-15)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} ($V_{OL_{IS}}$)@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
SA5.0CA	SA5.0A	5.0	6.40	7.00	10	120	55.4	9.2
SA6.0CA	SA6.0A	6.0	6.67	7.37	10	120	49.5	10.3
SA6.5CA	SA6.5A	6.5	7.22	7.90	10	100	45.5	11.2
SA7.0CA	SA7.0A	7.0	7.78	8.60	10	100	42.5	12.0
SA7.5CA	SA7.5A	7.5	8.33	9.21	1	20	39.5	12.9
SA8.0CA	SA8.0A	8.0	8.89	9.83	1	15	37.5	13.6
SA8.5CA	SA8.5A	8.5	9.44	10.40	1	10	35.4	14.4
SA9.0CA	SA9.0A	9.0	10.00	11.10	1	5	33.1	15.4
SA10CA	SA10A	10	11.10	12.30	1	1	30.0	17.0
SA11CA	SA11A	11	12.20	13.50	1	1	28.0	18.2
SA12CA	SA12A	12	13.30	14.70	1	1	25.6	19.9
SA13CA	SA13A	13	14.40	15.90	1	1	23.7	21.5
SA14CA	SA14A	14	15.60	17.20	1	1	22.0	23.2
SA15CA	SA15A	15	16.70	18.50	1	1	20.9	24.4
SA16CA	SA16A	16	17.80	19.70	1	1	19.6	26.0
SA17CA	SA17A	17	18.90	20.90	1	1	18.5	27.6
SA18CA	SA18A	18	20.00	22.10	1	1	17.5	29.2
SA20CA	SA20A	20	22.20	24.50	1	1	15.7	32.4
SA22CA	SA22A	22	24.40	26.90	1	1	14.4	35.5
SA24CA	SA24A	24	26.70	29.50	1	1	13.1	38.9
SA26CA	SA26A	26	28.90	31.90	1	1	12.1	42.1
SA28CA	SA28A	28	31.10	34.40	1	1	11.2	45.4
SA30CA	SA30A	30	33.30	36.80	1	1	10.5	48.4
SA33CA	SA33A	33	36.70	40.60	1	1	9.6	53.3

SA Series 500W (DO-15)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
SA36CA	SA36A	36	40.00	44.20	1	1	8.8	58.1
SA40CA	SA40A	40	44.40	49.10	1	1	7.9	64.5
SA43CA	SA43A	43	47.80	52.80	1	1	7.3	69.4
SA45CA	SA45A	45	50.00	55.30	1	1	7.0	72.7
SA48CA	SA48A	48	53.30	58.90	1	1	6.6	77.4
SA51CA	SA51A	51	56.70	62.70	1	1	6.2	82.4
SA54CA	SA54A	54	60.00	66.30	1	1	5.9	87.1
SA58CA	SA58A	58	64.40	71.20	1	1	5.4	93.6
SA60CA	SA60A	60	66.70	73.70	1	1	5.3	96.8
SA64CA	SA64A	64	71.10	78.60	1	1	5.0	103.0
SA70CA	SA70A	70	77.80	86.00	1	1	4.5	113.0
SA75CA	SA75A	75	83.30	92.10	1	1	4.2	121.0
SA78CA	SA78A	78	86.70	95.80	1	1	4.0	126.0
SA85CA	SA85A	85	94.4	104.0	1	1	3.7	137.0
SA090CA	SA90A	90	100.0	111.0	1	1	3.5	146.0
SA100CA	SA100A	100	111.0	123.0	1	1	3.1	162.0
SA110CA	SA110A	110	122.0	135.0	1	1	2.9	177.0
SA120CA	SA120A	120	133.0	147.0	1	1	2.6	193.0
SA130CA	SA130A	130	144.0	159.0	1	1	2.4	209.0
SA150CA	SA150A	150	167.0	185.0	1	1	2.1	243.0
SA160CA	SA160A	160	178.0	197.0	1	1	2.0	259.0
SA170CA	SA170A	170	189.0	209.0	1	1	1.9	275.0
SA180CA	SA180A	180	201.0	222.0	1	1	1.7	292.0
SA190CA	SA190A	190	211.0	233.0	1	1	1.6	308.0

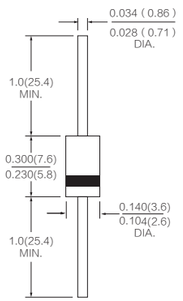
P6KE Series 600W (DO-15)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
P6KE6.8CA	P6KE6.8A	5.80	6.45	7.14	10	600	58.1	10.5
P6KE7.5CA	P6KE7.5A	6.40	7.13	7.88	10	400	54.0	11.3
P6KE8.2CA	P6KE8.2A	7.02	7.79	8.61	10	200	50.4	12.1
P6KE9.1CA	P6KE9.1A	7.78	8.65	9.55	1	50	45.5	13.4
P6KE10CA	P6KE10A	8.55	9.50	10.50	1	10	42.1	14.5
P6KE11CA	P6KE11A	9.40	10.50	11.60	1	5	39.1	15.6
P6KE12CA	P6KE12A	10.20	11.40	12.60	1	5	36.5	16.7
P6KE13CA	P6KE13A	11.10	12.40	13.70	1	1	33.5	18.2
P6KE15CA	P6KE15A	12.80	14.30	15.80	1	1	28.8	21.2
P6KE16CA	P6KE16A	13.60	15.20	16.80	1	1	27.1	22.5
P6KE18CA	P6KE18A	15.30	17.10	18.90	1	1	24.2	25.2
P6KE20CA	P6KE20A	17.10	19.00	21.00	1	1	22.0	27.7
P6KE22CA	P6KE22A	18.80	20.90	23.10	1	1	19.9	30.6
P6KE24CA	P6KE24A	20.50	22.80	25.20	1	1	18.4	33.2
P6KE27CA	P6KE27A	23.10	25.70	28.40	1	1	16.3	37.5
P6KE30CA	P6KE30A	25.60	28.50	31.50	1	1	14.7	41.4
P6KE33CA	P6KE33A	28.20	31.40	34.70	1	1	13.3	45.7
P6KE36CA	P6KE36A	30.80	34.20	37.80	1	1	12.2	49.9
P6KE39CA	P6KE39A	33.30	37.10	41.00	1	1	11.3	53.9
P6KE43CA	P6KE43A	36.80	40.90	45.20	1	1	10.3	59.3
P6KE47CA	P6KE47A	40.20	44.70	49.40	1	1	9.4	64.8
P6KE51CA	P6KE51A	43.60	48.5	53.60	1	1	8.7	70.1
P6KE56CA	P6KE56A	47.80	53.20	58.80	1	1	7.9	77.0
P6KE62CA	P6KE62A	53.00	58.90	65.10	1	1	7.2	85.0
P6KE68CA	P6KE68A	58.10	64.60	71.40	1	1	6.6	92.0
P6KE75CA	P6KE75A	64.10	71.30	78.80	1	1	5.9	103.0
P6KE82CA	P6KE82A	70.10	77.90	86.10	1	1	5.4	113.0
P6KE91CA	P6KE91A	77.80	86.50	95.50	1	1	4.9	125.0
P6KE100CA	P6KE100A	85.50	95.00	105.00	1	1	4.5	137.0
P6KE110CA	P6KE110A	94.00	105.00	116.00	1	1	4.0	152.0
P6KE120CA	P6KE120A	102.00	114.00	126.00	1	1	3.7	165.0

P6KE Series 600W (DO-15)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
P6KE130CA	P6KE130A	111.00	124.00	137.00	1	1	3.4	179.0
P6KE150CA	P6KE150A	128.00	143.00	158.00	1	1	2.9	207.0
P6KE160CA	P6KE160A	136.00	152.00	168.00	1	1	2.8	219.0
P6KE170CA	P6KE170A	145.00	162.00	179.00	1	1	2.6	234.0
P6KE180CA	P6KE180A	154.00	171.00	189.00	1	1	2.5	246.0
P6KE200CA	P6KE200A	171.00	190.00	210.00	1	1	2.2	274.0
P6KE220CA	P6KE220A	185.00	209.00	231.00	1	1	1.9	328.0
P6KE250CA	P6KE250A	214.00	237.00	263.00	1	1	1.8	344.0
P6KE300CA	P6KE300A	256.00	285.00	315.00	1	1	1.5	414.0
P6KE350CA	P6KE350A	300.00	332.00	368.00	1	1	1.3	482.0
P6KE400CA	P6KE400A	342.00	380.00	420.00	1	1	1.1	548.0
P6KE440CA	P6KE440A	376.00	418.00	462.00	1	1	1.0	602.0
P6KE480CA	P6KE480A	408.00	456.00	504.00	1	1	0.9	658.0
P6KE510CA	P6KE510A	434.00	485.00	535.00	1	1	0.9	698.0
P6KE530CA	P6KE530A	450.00	503.00	556.00	1	1	0.8	725.0
P6KE540CA	P6KE540A	459.00	513.00	567.00	1	1	0.8	740.0
P6KE550CA	P6KE550A	467.00	522.50	577.50	1	1	0.8	760.0
P6KE600CA	P6KE600A	512.00	570.00	630.00	1	1	0.75	828.0

PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-15



DO-204AC(DO-15)

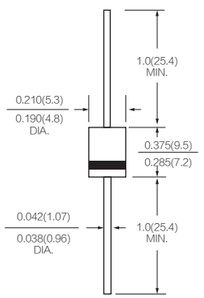
1.5KE Series 1500W (Do-201)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
1.5KE6.8CA	1.5KE6.8A	5.80	6.45	7.14	10	600	144.8	10.5
1.5KE7.5CA	1.5KE7.5A	6.40	7.13	7.88	10	400	134.5	11.3
1.5KE8.2CA	1.5KE8.2A	7.02	7.79	8.61	10	200	125.6	12.1
1.5KE9.1CA	1.5KE9.1A	7.78	8.65	9.50	1	50	113.4	13.4
1.5KE10CA	1.5KE10A	8.55	9.50	10.50	1	10	104.8	14.5
1.5KE11CA	1.5KE11A	9.40	10.50	11.60	1	5	97.4	15.6
1.5KE12CA	1.5KE12A	10.20	11.40	12.60	1	5	91.0	16.7
1.5KE13CA	1.5KE13A	11.10	12.40	13.70	1	1	83.5	18.2
1.5KE15CA	1.5KE15A	12.80	14.30	15.80	1	1	71.7	21.2
1.5KE16CA	1.5KE16A	13.60	15.20	16.80	1	1	67.6	22.5
1.5KE18CA	1.5KE18A	15.30	17.10	18.90	1	1	60.3	25.2
1.5KE20CA	1.5KE20A	17.10	19.00	21.00	1	1	54.9	27.7
1.5KE22CA	1.5KE22A	18.80	20.90	23.10	1	1	49.7	30.6
1.5KE24CA	1.5KE24A	20.50	22.80	25.20	1	1	45.8	33.2
1.5KE27CA	1.5KE27A	23.10	25.70	28.40	1	1	40.5	37.5
1.5KE30CA	1.5KE30A	25.60	28.50	31.50	1	1	36.7	41.4
1.5KE33CA	1.5KE33A	28.20	31.40	34.70	1	1	33.3	45.7
1.5KE36CA	1.5KE36A	30.80	34.20	37.80	1	1	30.5	49.9
1.5KE39CA	1.5KE39A	33.30	37.10	41.00	1	1	28.2	53.9
1.5KE43CA	1.5KE43A	36.80	40.90	45.20	1	1	25.6	59.3
1.5KE47CA	1.5KE47A	40.20	44.70	49.40	1	1	23.5	64.8
1.5KE51CA	1.5KE51A	43.60	48.50	53.60	1	1	21.7	70.1
1.5KE56CA	1.5KE56A	47.80	53.20	58.80	1	1	19.7	77.0
1.5KE62CA	1.5KE62A	53.00	58.90	65.10	1	1	17.9	85.0
1.5KE68CA	1.5KE68A	58.10	64.60	71.40	1	1	16.5	92.0
1.5KE75CA	1.5KE75A	64.10	71.30	78.80	1	1	14.8	103.0
1.5KE82CA	1.5KE82A	70.10	77.90	86.10	1	1	13.5	113.0
1.5KE91CA	1.5KE91A	77.80	86.50	95.50	1	1	12.2	125.0
1.5KE100CA	1.5KE100A	85.50	95.00	105.00	1	1	11.1	137.0
1.5KE110CA	1.5KE110A	94.00	105.00	116.00	1	1	10.0	152.0
1.5KE120CA	1.5KE120A	102.00	114.00	126.00	1	1	9.2	165.0

1.5KE Series 1500W (Do-201)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
1.5KE130CA	1.5KE130A	111.00	124.00	137.00	1	1	8.5	179.0
1.5KE150CA	1.5KE150A	128.00	143.00	158.00	1	1	7.3	207.0
1.5KE160CA	1.5KE160A	136.00	152.00	168.00	1	1	6.9	219.0
1.5KE170CA	1.5KE170A	145.00	162.00	179.00	1	1	6.5	234.0
1.5KE180CA	1.5KE180A	154.00	171.00	189.00	1	1	6.2	246.0
1.5KE200CA	1.5KE200A	171.00	190.00	210.00	1	1	5.5	274.0
1.5KE220CA	1.5KE220A	185.00	209.00	231.00	1	1	4.6	328.0
1.5KE250CA	1.5KE250A	214.00	237.00	263.00	1	1	4.4	344.0
1.5KE300CA	1.5KE300A	256.00	285.00	315.00	1	1	3.7	414.0
1.5KE350CA	1.5KE350A	300.00	332.00	368.00	1	1	3.2	482.0
1.5KE400CA	1.5KE400A	342.00	380.00	420.00	1	1	2.8	548.0
1.5KE440CA	1.5KE440A	376.00	418.00	462.00	1	1	2.5	602.0
1.5KE480CA	1.5KE480A	408.00	456.00	504.00	1	1	2.3	658.0
1.5KE510CA	1.5KE510A	434.00	485.00	535.00	1	1	2.1	698.0
1.5KE530CA	1.5KE530A	450.00	503.00	556.00	1	1	2.1	725
1.5KE540CA	1.5KE540A	459.00	513.00	567.00	1	1	2.0	740.0
1.5KE550CA	1.5KE550A	467.00	522.50	577.50	1	1	2.0	760.0

PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-201



3KP Series 3000W (P-600)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
3KP5.0CA	3KP5.0A	5.00	6.40	7.00	50	800	326.1	9.2
3KP6.0CA	3KP6.0A	6.00	6.67	7.37	50	800	291.3	10.3
3KP6.5CA	3KP6.5A	6.50	7.22	7.98	50	500	267.9	11.2
3KP7.0CA	3KP7.0A	7.00	7.78	8.60	50	200	250.0	12.0
3KP7.5CA	3KP7.5A	7.50	8.33	9.21	5	100	232.6	12.9
3KP8.0CA	3KP8.0A	8.00	8.99	10.23	5	50	220.6	13.6
3KP8.5CA	3KP8.5A	8.50	9.44	10.40	5	20	208.3	14.4
3KP9.0CA	3KP9.0A	9.00	10.00	11.1.	5	10	194.8	15.4
3KP10CA	3KP10A	10.0	11.10	12.30	5	5	176.5	17.0
3KP11CA	3KP11A	11.0	12.20	13.50	5	2	164.8	18.2
3KP12CA	3KP12A	12.0	13.30	14.70	5	2	150.8	19.9
3KP13CA	3KP13A	13.0	14.40	15.90	5	2	139.5	21.5
3KP14CA	3KP14A	14.0	15.60	17.20	5	2	129.3	23.2
3KP15CA	3KP15A	15.0	16.70	18.50	5	2	123.0	24.4
3KP16CA	3KP16A	16.0	17.80	19.70	5	2	115.4	26.0
3KP17CA	3KP17A	17.0	18.90	20.90	5	2	108.7	27.6
3KP18CA	3KP18A	18.0	20.00	22.10	5	2	102.7	29.2
3KP20CA	3KP20A	20.0	22.20	24.50	5	2	92.6	32.4
3KP22CA	3KP22A	22.0	24.40	26.90	5	2	84.5	35.5
3KP24CA	3KP24A	24.0	26.70	29.50	5	2	77.1	38.9
3KP26CA	3KP26A	26.0	28.90	31.90	5	2	71.3	42.1
3KP28CA	3KP28A	28.0	31.10	34.40	5	2	66.1	45.4
3KP30CA	3KP30A	30.0	33.30	36.80	5	2	62.0	48.4
3KP33CA	3KP33A	33.0	36.70	40.60	5	2	53.3	56.3
3KP36CA	3KP36A	36.0	40.00	44.20	5	2	51.6	58.1

3KP Series 3000W (P-600)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I $_{PP}$ (V)
			Min .V	Max.V				
3KP40CA	3KP40A	40.0	44.40	49.10	5	2	46.5	64.5
3KP43CA	3KP43A	43.0	47.80	52.80	5	2	43.2	69.4
3KP45CA	3KP45A	45.0	50.00	55.30	5	2	41.3	72.7
3KP48CA	3KP48A	48.0	53.30	58.90	5	2	38.8	77.4
3KP51CA	3KP51A	51.0	56.70	62.70	5	2	36.4	82.4
3KP54CA	3KP54A	54.0	60.00	66.30	5	2	34.4	87.1
3KP58CA	3KP58A	58.0	64.40	71.20	5	2	32.1	93.6
3KP60CA	3KP60A	60.0	66.70	73.70	5	2	31.0	96.8
3KP64CA	3KP64A	64.0	71.10	78.60	5	2	29.1	103.0
3KP70CA	3KP70A	70.0	77.80	86.00	5	2	26.5	113.0
3KP75CA	3KP75A	75.0	83.30	92.10	5	2	24.8	121.0
3KP78CA	3KP78A	78.0	86.70	95.80	5	2	23.8	126.0
3KP85CA	3KP85A	85.0	94.40	104.00	5	2	21.9	137.0
3KP90CA	3KP90A	90.0	100.00	111.00	5	2	20.5	146.0
3KP100CA	3KP100A	100.0	111.00	123.00	5	2	18.5	162.0
3KP110CA	3KP110A	110.0	122.00	135.00	5	2	16.9	177.0
3KP120CA	3KP120A	120.0	133.00	147.00	5	2	15.5	193.0
3KP130CA	3KP130A	130.0	144.00	159.00	5	2	14.4	209.0
3KP150CA	3KP150A	150.0	167.00	185.00	5	2	12.3	243.0
3KP160CA	3KP160A	160.0	178.00	197.00	5	2	11.6	259.0
3KP170CA	3KP170A	170.0	189.00	209.00	5	2	10.9	275.0
3KP180CA	3KP180A	180.0	200.00	221.00	5	2	10.4	289.0
3KP190CA	3KP190A	190.0	211.00	233.00	5	2	9.7	310.0
3KP200CA	3KP200A	200.0	222.00	246.00	5	2	9.1	329.2
3KP210CA	3KP210A	210.0	233.00	258.00	5	2	8.6	349.5
3KP220CA	3KP220A	220.0	244.00	270.00	5	2	8.1	371.1

5KP Series 5000W (P-600)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I $_{PP}$ (V)
			Min .V	Max.V				
5KP5.0CA	5KP5.0A	5.00	6.40	7.00	50	5000	554.3	9.2
5KP6.0CA	5KP6.0A	6.00	6.67	7.37	50	5000	495.1	10.3
5KP6.5CA	5KP6.5A	6.50	7.22	7.98	50	2000	455.4	11.2
5KP7.0CA	5KP7.0A	7.00	7.78	8.60	50	1000	425.0	12.0
5KP7.5CA	5KP7.5A	7.50	8.33	9.21	5	250	395.3	12.9
5KP8.0CA	5KP8.0A	8.00	8.99	10.23	5	150	375.0	13.6
5KP8.5CA	5KP8.5A	8.50	9.44	10.40	5	500	354.2	14.4
5KP9.0CA	5KP9.0A	9.00	10.00	11.1.	5	20	331.2	15.4
5KP10CA	5KP10A	10.0	11.10	12.30	5	15	300.0	17.0
5KP11CA	5KP11A	11.0	12.20	13.50	5	2	280.2	18.2
5KP12CA	5KP12A	12.0	13.30	14.70	5	2	256.3	19.9
5KP13CA	5KP13A	13.0	14.40	15.90	5	2	237.2	21.5
5KP14CA	5KP14A	14.0	15.60	17.20	5	2	219.8	23.2
5KP15CA	5KP15A	15.0	16.70	18.50	5	2	209.0	24.4
5KP16CA	5KP16A	16.0	17.80	19.70	5	2	196.2	26.0
5KP17CA	5KP17A	17.0	18.90	20.90	5	2	184.8	27.6
5KP18CA	5KP18A	18.0	20.00	22.10	5	2	174.7	29.2
5KP20CA	5KP20A	20.0	22.20	24.50	5	2	157.4	32.4
5KP22CA	5KP22A	22.0	24.40	26.90	5	2	143.7	35.5
5KP24CA	5KP24A	24.0	26.70	29.50	5	2	131.1	38.9
5KP26CA	5KP26A	26.0	28.90	31.90	5	2	121.1	42.1
5KP28CA	5KP28A	28.0	31.10	34.40	5	2	112.3	45.4
5KP30CA	5KP30A	30.0	33.30	36.80	5	2	105.4	48.4

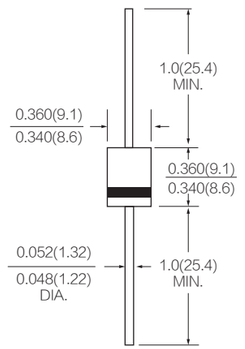
5KP Series 5000W (P-600)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
5KP33CA	5KP33A	33.0	36.70	40.60	5	2	95.7	56.3
5KP36CA	5KP36A	36.0	40.00	44.20	5	2	87.8	58.1
5KP40CA	5KP40A	40.0	44.40	49.10	5	2	79.1	64.5
5KP43CA	5KP43A	43.0	47.80	52.80	5	2	73.5	69.4
5KP45CA	5KP45A	45.0	50.00	55.30	5	2	70.2	72.7
5KP48CA	5KP48A	48.0	53.30	58.90	5	2	65.9	77.4
5KP51CA	5KP51A	51.0	56.70	62.70	5	2	61.9	82.4
5KP54CA	5KP54A	54.0	60.00	66.30	5	2	58.6	87.1
5KP58CA	5KP58A	58.0	64.40	71.20	5	2	54.5	93.6
5KP60CA	5KP60A	60.0	66.70	73.70	5	2	52.7	96.8
5KP64CA	5KP64A	64.0	71.10	78.60	5	2	49.5	103.0
5KP70CA	5KP70A	70.0	77.80	86.00	5	2	45.1	113.0
5KP75CA	5KP75A	75.0	83.30	92.10	5	2	42.1	121.0
5KP78CA	5KP78A	78.0	86.70	95.80	5	2	40.5	126.0
5KP85CA	5KP85A	85.0	94.40	104.00	5	2	37.2	137.0
5KP90CA	5KP90A	90.0	100.00	111.00	5	2	34.9	146.0
5KP100CA	5KP100A	100.0	111.00	123.00	5	2	31.5	162.0
5KP110CA	5KP110A	110.0	122.00	135.00	5	2	28.8	177.0
5KP120CA	5KP120A	120.0	133.00	147.00	5	2	26.4	193.0
5KP130CA	5KP130A	130.0	144.00	159.00	5	2	24.4	209.0
5KP150CA	5KP150A	150.0	167.00	185.00	5	2	21.0	243.0
5KP160CA	5KP160A	160.0	178.00	197.00	5	2	19.7	259.0
5KP170CA	5KP170A	170.0	189.00	209.00	5	2	18.5	275.0
5KP180CA	5KP180A	180.0	200.00	221.00	5	2	17.5	289.0

5KP Series 5000W (P-600)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
5KP190CA	5KP190A	190.0	211.00	233.00	5	2	16.5	310.0
5KP200CA	5KP200A	200.0	222.00	246.00	5	2	15.5	329.2
5KP210CA	5KP210A	210.0	233.00	258.00	5	2	14.6	349.5
5KP220CA	5KP220A	220.0	244.00	270.00	5	2	13.7	371.1
5KP250CA	5KP250A	250.0	277.00	306.00	5	2	12.0	425.0

PACKAGE OUTLINE DIMENSIONS in inches (millimeters) P600



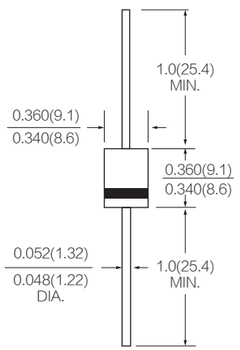
15KP Series 15000W (P-600)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
15KP17CA	15KP17A	17.0	18.88	20.80	50	5000	515.4	29.3
15KP18CA	15KP18A	18.0	20.00	22.20	50	5000	488.7	30.9
15KP20CA	15KP20A	20.0	22.20	24.60	20	1500	440.2	34.3
15KP22CA	15KP22A	22.0	24.40	27.00	10	500	407.0	37.1
15KP24CA	15KP24A	24.0	26.60	29.40	5	150	371.0	40.7
15KP26CA	15KP26A	26.0	28.80	31.80	5	50	343.2	44.0
15KP28CA	15KP28A	28.0	31.10	34.40	5	25	317.9	47.5
15KP30CA	15KP30A	30.0	33.30	36.90	5	15	297.8	50.7
15KP33CA	15KP33A	33.0	36.60	40.50	5	2	276.1	54.7
15KP36CA	15KP36A	36.0	39.90	44.10	5	2	252.5	59.8
15KP40CA	15KP40A	40.0	44.40	49.10	5	2	229.5	65.8
15KP43CA	15KP43A	43.0	47.80	52.80	5	2	216.3	69.8
15KP45CA	15KP45A	45.0	50.10	55.50	5	2	207.4	72.8
15KP48CA	15KP48A	48.0	53.40	59.10	5	2	194.3	77.7
15KP51CA	15KP51A	51.0	56.70	62.70	5	2	182.1	82.9
15KP54CA	15KP54A	54.0	60.00	66.30	5	2	172.2	87.7
15KP58CA	15KP58A	58.0	64.40	71.20	5	2	161.0	93.8
15KP60CA	15KP60A	60.0	66.60	73.50	5	2	155.0	97.4
15KP64CA	15KP64A	64.0	71.10	78.60	5	2	144.9	104.2
15KP70CA	15KP70A	70.0	77.80	86.00	5	2	132.9	113.6
15KP75CA	15KP75A	75.0	83.30	92.10	5	2	123.8	122.0
15KP78CA	15KP78A	78.0	86.70	95.70	5	2	119.7	126.1
15KP85CA	15KP85A	85.0	94.40	104.0	5	2	109.7	137.6
15KP90CA	15KP90A	90.0	99.90	110.4	5	2	103.7	145.6
15KP100CA	15KP100A	100.0	111.0	123.0	5	2	93.6	161.3
15KP110CA	15KP110A	110.0	122.0	135.0	5	2	84.5	178.6
15KP120CA	15KP120A	120.0	133.2	147.3	5	2	78.5	192.3
15KP130CA	15KP130A	130.0	144.0	159.0	5	2	72.5	208.3

15KP Series 15000W (P-600)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (V_{OLTS})@I_T		Test Current I_T (mA)	Maximum Reverse Leakage I_R@ V_R (μA)	Maximum Peak Pulse Current I pp (A)	Maximum Clamping Voltage V_C@I_{pp} (V)
			Min .V	Max.V				
15KP150CA	15KP150A	150.0	167.0	185.0	5	2	62.4	241.9
15KP160CA	15KP160A	160.0	178.0	197.0	5	2	58.4	258.6
15KP170CA	15KP170A	170.0	189.0	209.0	5	2	55.4	272.7
15KP180CA	15KP180A	180.0	200.1	221.0	5	2	52.3	288.5
15KP200CA	15KP200A	200.0	222.0	247.0	5	2	47.3	319.1
15KP220CA	15KP220A	220.0	244.0	272.0	5	2	35.2	352.5
15KP240CA	15KP240A	240.0	267.4	293.9	5	2	39.3	384.6
15KP260CA	15KP260A	260.0	289.6	318.2	5	2	36.2	416.7
15KP280CA	15KP280A	280.0	312.1	342.5	5	2	33.2	454.5

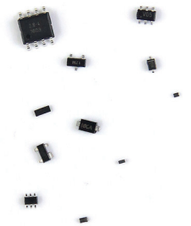
PACKAGE OUTLINE DIMENSIONS in inches (millimeters) P600



静电保护元件 ESD（Electrostatic Discharge Devices）

YINT静电保护元件阵列可保护电子设备免受雷击和静电放电（ESD）等快速瞬态电压的破坏，为输入/输出接口和数字与模拟信号线提供了理想的保护方案。
Yint的ESD器件封装通常包括：SOD323，SOD523，SOD882，SOD923，SOT23，SOT553，SOT563，SOT353，SOT363，SOT143，SOT23-6L，SOP-8，and μDFN等。

The array of ESD could preventing electronic equipment from damaging by fast transient voltages such as lightning and electrostatic discharge (ESD), providing an effective protection solution for input/output interfaces and digital and analog signal lines.
The packaging of ESD including: SOD323, SOD523, SOD882, SOD923, SOT23, SOT553, SOT563, SOT353, SOT363, SOT143, SOT23-6L, SOP-8, μDFN, etc.



特点 Features

- 响应速度快 Fast response time
- 小尺寸封装 Small package size
- 低钳位电压 Low clamping voltage
- 低漏电流 Low leakage current
- YINT可提供三种类型的ESD器件：标准电容（大于100pf），低电容（5-100pF），超低电容（小于5pf）
  YINT offers three types of TVS Diode Arrays: Standard Capacitance(more than 100pF), Low Capacitance (5-100pF), Ultra Low Capacitance(less than 5pF)
- 符合IEC 61000-4-2(ESD) : Air 15KV , Contact 8KV
  Compatible with IEC 61000-4-2(ESD) : Air 15KV , Contact 8KV

Some of the applications discussed in this guide are:

- USB1.1/2.0/3.0
- HDMI
- DisplayPort
- DVI
- 10/100/1000 Ethernet
- eSATA
- 1394a/b
- LVDS
- Audio (Speaker/Microphone)
- Analog Video
- SIM Sockets
- RS-232
- RS-485
- CAN Bus
- Keypad/Push button
- LCD/Camera display interfaces

Many of these applications can be found in electronic devices such as:

- PC’s
- Portable Medical Devices
- Set Top Boxes
- LCD/PDP
- Portable Navigation Devices
- Keyboards/Mouse
- Mobile Handsets
- MP3/PMP’s
- PDA’s
- Digital Cameras
- SIM/SD Cards
- External Storage
- Switches/Routers
- Smart Phone




Definitions and Terms

Reverse Standoff Voltage(V_{RWM})
The V_{RWM} of ESD should be equal to, or greater than the peak operating voltage of circit(or part of the circuit)to be protected.This is to ensure the normal operation of circuit will not be affected.

Reverse breakdown Voltage(V_{BR})

Clamp Voltage(VC)
Maximum voltage which can be measured across the protector when subjected to the maximum peak pulse current

Reverse Leakage Current(IR)
Maximum of state current measured at specified voltage

Junction Capacitance（C）
VR=0V, f = 1MHz Between I/0 pins or Any I/O pin to ground

术语定义

反向关断电压（V_{RWM}）
ESD的V_{RWM}必须大于或者等于被保护电路（或者被保护电路一部分）的峰值操作电压，这是为了确保ESD器件不影响电路的正常工作。

反向击穿电压(V_{BR})

钳位电压（VC）
当受到最大的浪涌电流冲击时，保护器件两端测量到的最大电压

反向漏电流（IR）
在额定电压下最大的漏电流

结电容（C）
I/O pin之间或I/O pin与地之间的寄生电容

SOD323

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD3V3D3	3.3	10	5	1	6.5	350	500	SOD-323
ESD5V0D3	5	10	6		9.8	350	350	
ESD8V0D3	8	10	8.5		13.4	350	150	
ESD12VD3	12	1	13.3		19	350	120	
ESD15VD3	15	1	16.7		24	350	100	
ESD24VD3	24	1	26.7		43	350	80	
ESD36VD3	36	1	40		60	350	30	

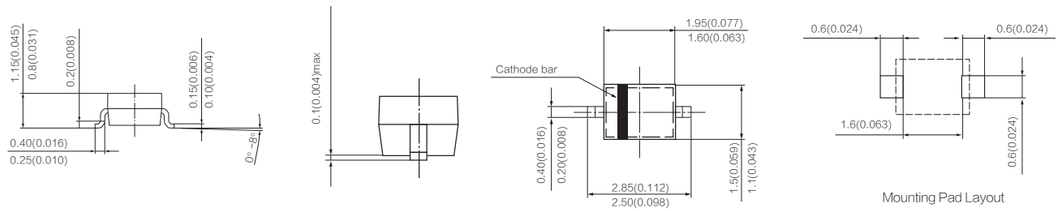
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD3V3D3B	3.3	200	4	1	7	320	350	SOD-323
ESD5V0D3B	5	10	6		9.8	320	260	
ESD8V0D3B	8	5	8.5		13.4	320	120	
ESD12VD3B	12	1	13.3		19	320	110	
ESD15VD3B	15	1	16.7		24	320	100	
ESD24VD3B	24	1	26.7		43	320	75	
ESD36VD3B	36	1	40		60	320	35	

SOD323

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESDLC3V3D3	3.3	40	4	1	5.15	350	1	SOD-323
ESDLC5V0D3	5	5	6		9.8	350	1	
ESDLC8V0D3	8	2	8.5		13.4	350	1	
ESDLC12VD3	12	1	13.3		19	350	1	
ESDLC15VD3	15	1	16.7		24	350	1	
ESDLC24VD3	24	1	26.7		43	350	1	

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESDLC3V3D3B	3.3	40	4	1	7.5	350	1	SOD-323
ESDLC5V0D3B	5	5	6		9.8	350	1	
ESDLC8V0D3B	8	2	8.5		13.4	350	1	
ESDLC12VD3B	12	1	13.3		19	350	1	
ESDLC15VD3B	15	1	16.7		24	350	1	
ESDLC24VD3B	24	1	26.7		43	350	1	

PACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOD323



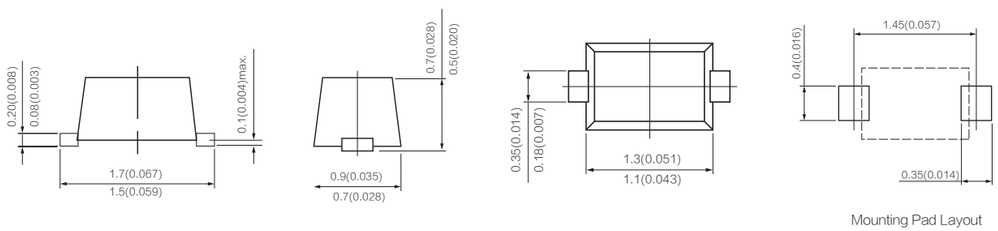
Mounting Pad Layout

SOD523

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD3V3D5	3.3	1	4	1	7	200	105	SOD523
ESD5V0D5	5	1	6		9.8	200	25	
ESD8V0D5	8	5	8.5		13	200	70	
ESD12VD5	12	1	13.3		15	200	45	
ESD15VD5	15	1	16.6		21	200	50	
ESD24VD5	24	1	27		40	200	40	
ESDULC5V0D5	5	1	5.4		12.9	200	0.5	

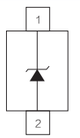
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD3V3D5B	3.3	2.5	4	1	7	100	18	SOD523
ESD5V0D5B	5	1	6.2		9.8	200	80	
ESD8V0D5B	8	1	8.5		17.5	100	10	
ESDULC5V0D5B	5	1	6		12.9	200	0.5	

PACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOD523



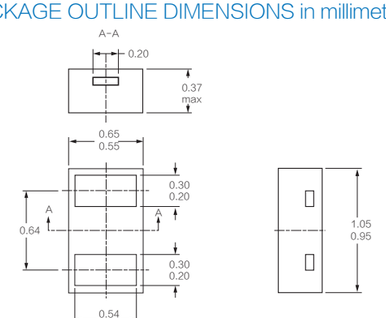
Mounting Pad Layout

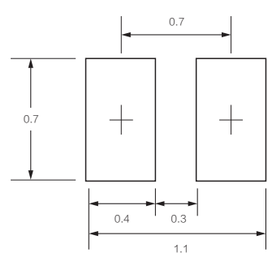
SOD882

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
1  2 SOD882								
ESD3V3D8	3.3	2.5	5	1	10.4	102	80	SOD882
ESD5V0D8	5	1	6.2		12.3	107	65	
ESD12VD8	12	1	13.3		23.7	140	30	
ESD24VD8	24	1	26.7		36	100	25	
ESDULC3V3D8	3.3	1	4.8		12	60	0.5	
ESDULC5V0D8	5	1	5.4		9.8	120	0.5	

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
1  2 SOD882								
ESD3V3D8B	3.3	1	5	1	8.4	150	25	SOD882
ESD5V0D8B	5	1	5.6		11.6	100	15	
ESD12VD8B	12	1	13.3		18	72	9.5	
ESDLC5V0D8B	5	1	5.5		11.5	100	3.5	
ESDLC24VD8B	24	1	27		35	180	10	
ESDULC3V3D8B	3.3	1	4.8		10	150	0.5	
ESDULC5V0D8B	5	1	6		11	100	0.5	

PACKAGE OUTLINE DIMENSIONS in millimeters :SOD882



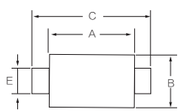


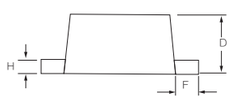
SOD923

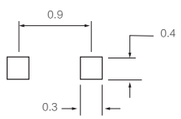
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD3V3D9	3.3	2.5	5	1	6.5	88	45	SOD-923
ESD5V0D9	5	1	6.2		9.8	107	65	
ESD12VD9	12	1	13.5		23.7	140	30	
ESDULC3V3D9	3.3	1	4.8		12	50	0.5	
ESDULC5V0D9	5	1	5.4		9.8	50	0.5	

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD3V3D9B	3.3	1	5.1	1	14.1	150	25	SOD-923
ESD5V0D9B	5	1	6		18.6	150	15	
ESD12V0D9B	12	1	13.8		30	150	14	
ESDULC3V3D9B	3.3	1	4.8		10	50	0.9	
ESDULC5V0D9B	5	1	5.4		12.9	50	0.9	

ACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOD923







Mounting Pad Layout(mm)

Dim	Inches MIN	Inches MAX	Millimeters MIN	Millimeters MAX
A	0.030	0.033	0.75	0.85
B	0.022	0.026	0.55	0.65
C	0.037	0.041	0.95	1.05
D	0.014	0.017	0.36	0.43
E	0.006	0.010	0.15	0.25
F	0.002	0.006	0.05	0.15
H	0.003	0.007	0.07	0.17

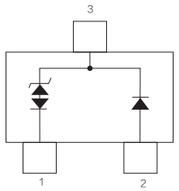
SOT23

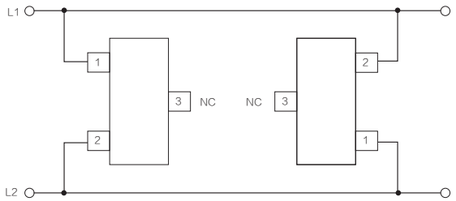
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD3V3AP	3.3	10	5.9	1	9.3	300	120	SOT23
ESD5V0AP	5	10	6.2		9.8	300	110	
ESD8V0AP	8	5	8.5		16.9	300	250	
ESD12VAP	12	1	13.3		19	300	60	
ESD15VAP	15	1	16.7		30	300	100	
ESD24VAP	24	1	26.7		49	300	90	
ESD36VAP	36	1	40		76.8	300	75	

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD3V3APB	3.3	40	4	1	10.5	350	220	SOT23
ESD5V0APB	5	1	6		12	300	80	
ESD8V0APB	8	1	8.5		24	350	75	
ESD12VAPB	12	1	13.3		30	300	35	
ESD15VAPB	15	1	16.7		38	350	60	
ESD24VAPB	24	1	27		45	300	25	
ESD36VAPB	36	1	38		60	300	20	
ESDLC5V0APB	5	1	5.8		10	50	15	

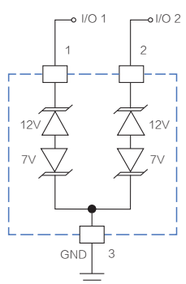
SOT23

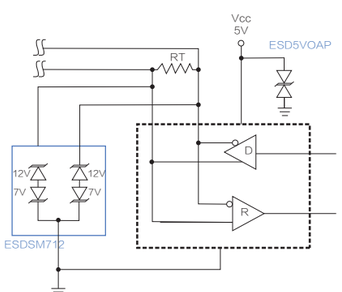
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESDSLVU2.8	2.8	1	3	1	15	400	2	SOT23





Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESDSM712	Pin 1 or 2 to 3	12	1	13.3	1	26	400	45	SOT23
	Pin 3 to 1 or 2	7	20	7.5		12			

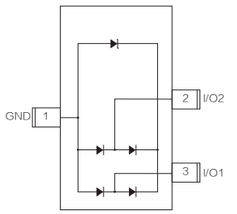




SOT23

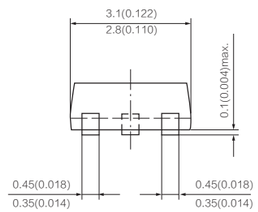
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESDSR05AP	5	1	6	1	8.5	150	1.2	SOT-23

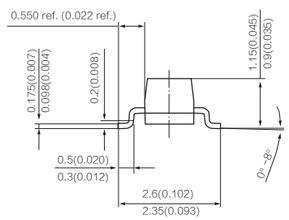
SOT-23

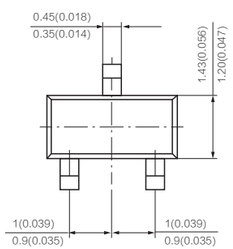


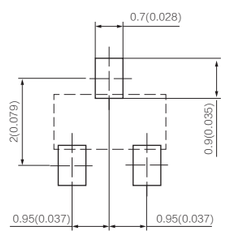
SOT-23-3L(Top view)

ACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOT-23





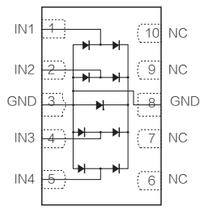


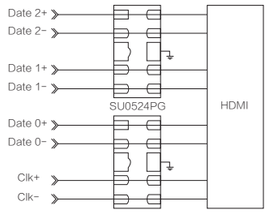


Mounting Pad Layout

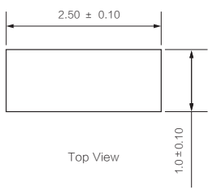
DFN

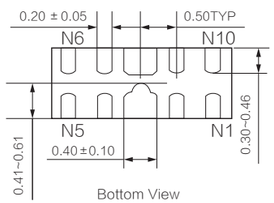
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V）@IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD0524P	5	1	6	1	8.5	150	0.35	DFN-10-2.5*1.0*0.6-0.5

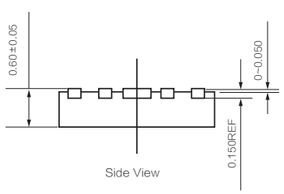




DFN-10-2.5*1.0*0.6-0.5 (1)

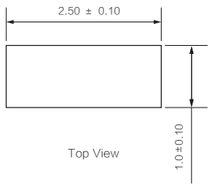


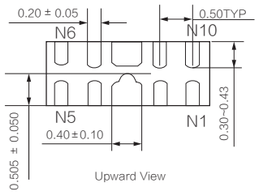


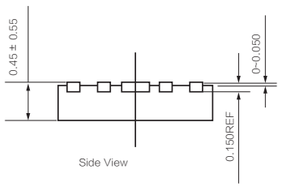


DFN

DFN-10-2.5*1.0*0.6-0.5 (2)





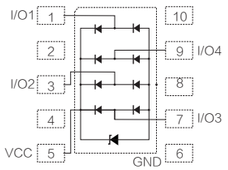


DFN

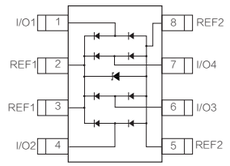
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V）@IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD3304P	3.3	1	3.8	1	12	450	3.5	DFN-10-2.5*2.5*0.6-0.5
ESD3304S	3.3	1	3.8	1	12	450	3.5	SOP-8-225-1.27

DFN-10-2.5X2.5X0.6-0.5

SOP-8-255-1.27

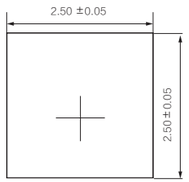


DFN-10-2.5X2.5X0.6-0.5(Top view)

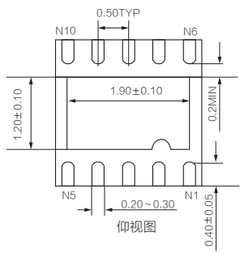


SOP-8-225-1.27(Top view)

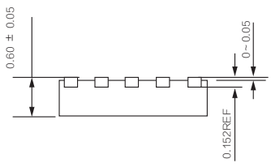
DFN-10-2.5×2.5×0.6-0.5



俯视图

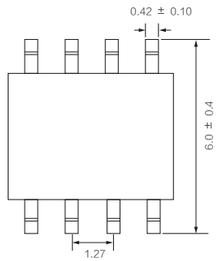


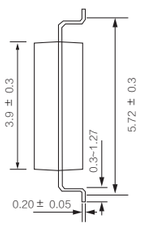
仰视图

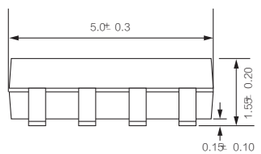


侧视图

SOP-8-225-1.27

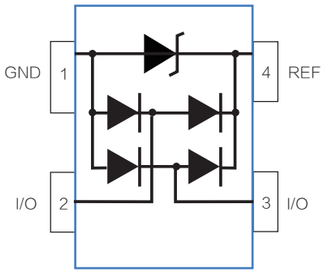


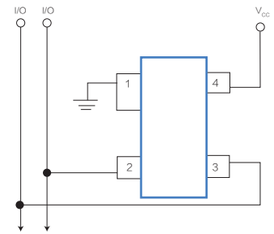


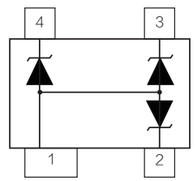


SOT-143

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V）@IPP=1A	IPP (A)	Ppk (W)	C (pF)	PACKAGE
ESDSR05	5	5	6	1	9.8	12	500	2.5	SOT-143
ESD5V0L3	5	5	6	1	9.8	12	100	30	SOT-143

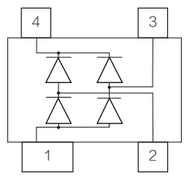




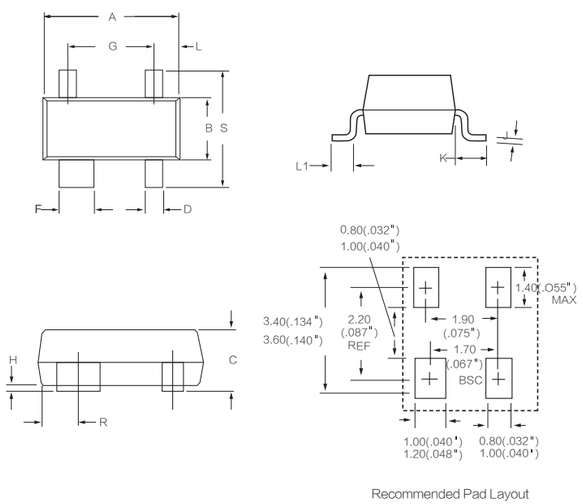


SOT-143

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V）@IPP=1A	IPP (A)	Ppk (W)	C (pF)	PACKAGE
ESDSR70	70	5	85	50	1.5	24	/	3	SOT-143



PACKAGE OUTLINE DIMENSIONS in inches (millimeters) SOT-143

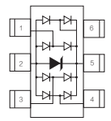


Recommended Pad Layout

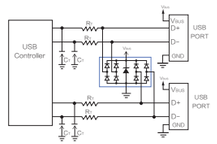
Dim	Inches MIN	Inches MAX	Millimeters MIN	Millimeters MAX
A	2.80	3.04	0.110	0.120
B	1.20	1.39	0.047	0.055
C	0.84	1.14	0.033	0.045
D	0.39	0.50	0.015	0.020
F	0.79	0.93	0.031	0.037
G	1.78	2.03	0.070	0.080
J	0.08	0.15	0.003	0.006
K	0.46	0.60	0.018	0.024
L	0.045	0.60	0.0175	0.024
L1	0.4	0.60	0.016	0.024
R	0.72	0.83	0.028	0.033
S	2.11	2.48	0.083	0.098

SOT23-6L

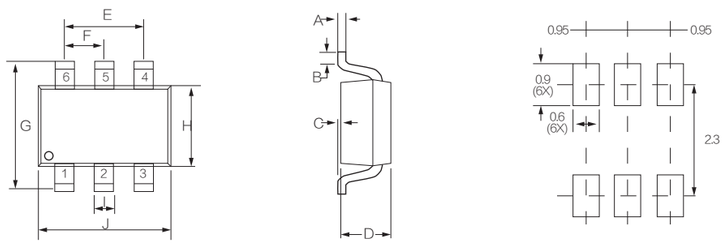
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V）@IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESDSRV05-4	5	1	6	1	12.5	350	2.5	SOT23-6L
ESDSRVLC05-4	5	1	6	1	12.5	350	0.8	



SOT-23 6L(Top view)



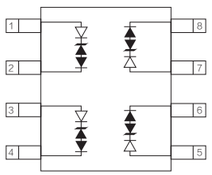
PACKAGE OUTLINE DIMENSIONS in inches (millimeters) SOT23-6L

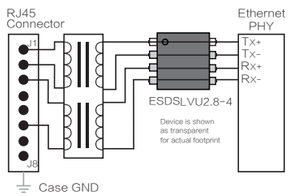


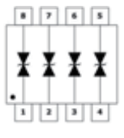
SYMBOL	DIMENSIONS INCHES MIN	DIMENSIONS INCHES MAX	DIMENSIONS MILLIMETERS MIN	DIMENSIONS MILLIMETERS MAX
A	0.004	0.007	0.11	0.19
B	0.016	-	0.40	-
C	-	0.004	-	0.10
D	0.039	0.047	1.00	1.20
E	0.074	0.075	1.88	1.92
F	0.037	0.038	0.93	0.97
G	0.102	0.118	2.60	3.00
H	0.059	0.067	1.50	1.70
I	0.016	00.016	41	41
J	0.110	0.118	2.80	3.00

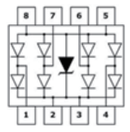
SOP-8

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	IPP (A)	Ppk (W)	C (pF)	PACKAGE
ESDSLVU2.8-4	2.8	1	3	1	5.5	24	400	3	SOP-8
ESDSMDA15C	15	1	16.7	1	30	5	500	80	
ESDSRDA3.3-4	3.3	40	4	1	15.5	27	500	5	

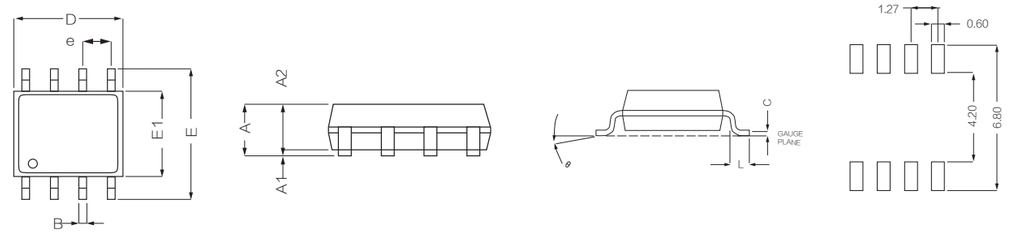








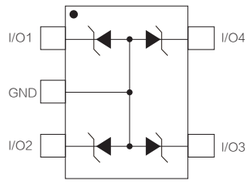
PACKAGE OUTLINE DIMENSIONS SOP-8

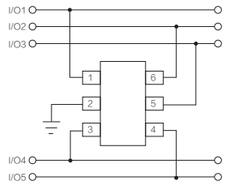


SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.053	0.069	1.35	1.75
A1	0.004	0.010	0.10	0.25
A2	0.050	0.065	1.25	1.65
B	0.012	0.020	0.31	0.51
c	0.007	0.010	0.17	0.25
D	0.189	0.197	4.80	5.00
E	0.228	0.244	5.80	6.20
E1	0.150	0.157	3.80	4.00
e	0.050BSC		1.27BSC	
L	0.016	0.050	0.40	1.27

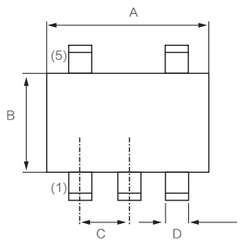
SOT-553

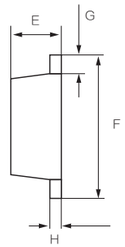
Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V） @IPP=1A	Ppk (W)	C (pF)	PACKAGE
ESD5V0L4	5	1	6	1	9.8	20	8	SOT-553
ESD3V0J4	3	1	5.3	1	8	20	9	SOT-353
ESD5V0J4	5	5	6	1	12	60	30	SOT-353

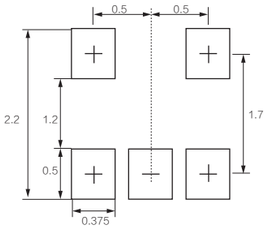




PACKAGE OUTLINE DIMENSIONS : SOT - 553



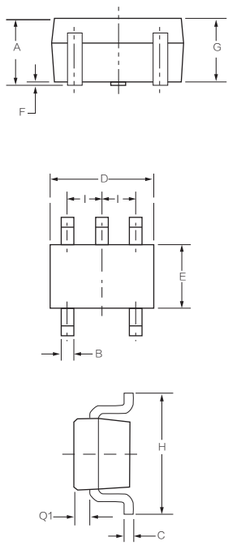




SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50BSC		0.020BSC	
D	0.17	0.27	0.007	0.011
E	0.50	0.60	0.020	0.024
F	1.50	1.70	0.059	0.067
G	0.10	0.30	0.004	0.012
H	0.08	0.16	0.003	0.006

SOT-353

PACKAGE OUTLINE DIMENSIONS : SOT - 353

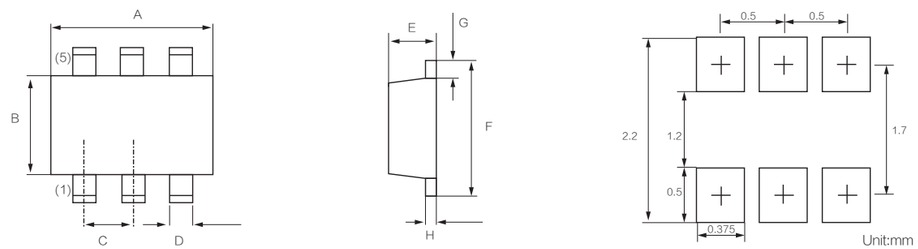


Dimension	MM (INCHES) MAX	MIN
A	0.80 (0.031)	1.10 (0.043)
B	0.15 (0.006)	0.30 (0.012)
C	0.10 (0.004)	0.18 (0.007)
D	1.80 (0.071)	2.20 (0.087)
E	1.15 (0.045)	1.35 (0.053)
F		0.10 (0.004)
G	0.80 (0.031)	1.00 (0.039)
H	1.80 (0.071)	2.40 (0.094)
I	TYP:	0.65 (0.026)
Q1	0.10 (0.004)	0.40 (0.016)

Part number	VRWM (V)	IR (μA) @ VRWM	VBR (V) @ IT	IT(mA)	VC（V）@IPP=1A	Ppk (W)	C (pF)	PACKAGE
			6 5 4		I/O1 I/O2 I/O3			
			1 2 3		I/O4 I/O5		ESDULC5V-4K5	
ESD5V0M5	5	5	6	1	12	60	30	SOT-563
ESD5V0K5	5	5	6	1	12	60	30	SOT-363
ESDULC5V-4K5	5	1	6	1	20	100	0.8	SOT-363

SOT-563

ACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOT-563

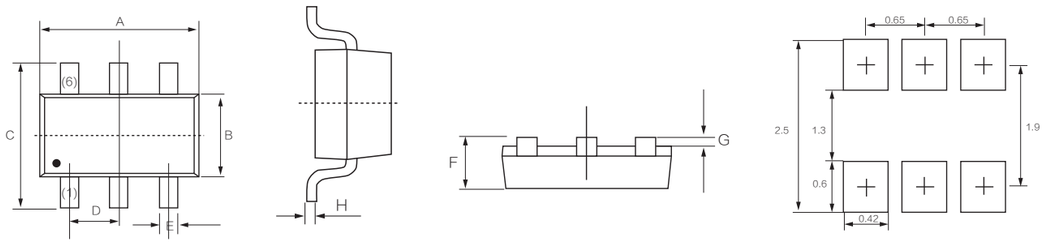


SYMBOL	DIMENSIONS INCHES MIN	MAX	MILLIMETERS MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50BSC		0.020BSC	
D	0.17	0.27	0.007	0.011
E	0.50	0.60	0.020	0.024
F	1.50	1.70	0.059	0.067
G	0.10	0.30	0.004	0.012
H	0.08	0.16	0.003	0.006

ESD

SOT-363

PACKAGE OUTLINE DIMENSIONS : SOT-363



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	2.0	2.2	0.079	0.087
B	1.15	1.35	0.045	0.053
C	2.15	2.45	0.085	0.096
D	0.65BSC		0.026BSC	
E	0.15	0.35	0.006	0.014
F	0.90	1.10	0.035	0.043
G	0.00	0.10	0.000	0.004
H	0.08	0.15	0.003	0.006

ESD抑制器电容很小，可适用于高速信号电路(IEEE 1394, USB 2.0, HDMI, DVI, etc.)的保护，并且有单路和多路的封装，在提供ESD保护的同时，也可保证信号的完整性。

ESD Suppressors offer extremely low capacitance which makes them ideal for use in high-speed data circuits (IEEE 1394, USB 2.0, HDMI, DVI, etc.). Available in single-line and multi-line packages, they provide ESD protection while ensuring that signal integrity is maintained.

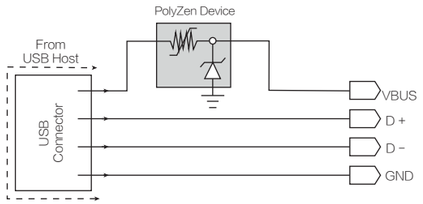
Part Number	Working Voltage DC	Clamping Voltage 8/20uS 1A	Reverse Leakage Current	Capacitance @1MHZ	IEC61000-4-2
	V	VC Max	IR	Ref.PF	
ESD040205P015	5.0	30	1	0.15	Contact :>8KV Air : >15KV
ESD040208P030	8.0	45	1	0.3	
ESD040212P060	12.0	50	1	0.6	
ESD040215P080	15.0	60	1	0.8	
ESD040218P080	18.0	65	1	0.8	
ESD040224P080	24.0	80	1	0.8	
ESD060305P015	5.0	30	1	0.15	
ESD060308P030	8.0	45	1	0.3	
ESD060312P060	12.0	50	1	0.6	
ESD060315P080	15.0	60	1	0.8	
ESD060318P080	18.0	65	1	0.8	
ESD060324P080	24.0	80	1	0.8	

- The application tolerates very little added capacitance (high speed data lines or RF circuits)
- ESD is the only transient threat
- Protection is required on data, signal, and control lines (not power supply lines)

自恢复保险丝 PPTC（Polymeric Positive Temperature Coefficient）

正温度系数器件，也就是人们所说的自恢复保险丝，为电子电路或者电子设备提供过流保护。PTCs的电阻随着温度的升高而升高，利用这个特性，当安全电流通过时，阻值变化很小，当有异常的电流时，阻值剧烈变化，达到限制异常电流的目的。当异常排除，温度回到安全水平时，阻值自动“重置”。
YINT提供的正温度系数聚合物（PPTC）作为一种过流保护器件，可以减少保修，维护和维修成本。是异常过电流频繁区域设备或者高可靠性设备的理想选择。常被应用在消费电子，电源线，电信，I/O口，过程控制和医疗设备。

Positive temperature coefficient devices, also known as re-settable fuses, providing over-current protection for electronic circuits and devices. The resistance of PTCs rises as the temperature rises. With this feature, the value change of resistance is not obvious when the safe current passes, the resistance value changes drastically when abnormal current passes, this reaches the purpose of limiting abnormal current, the resistance value will “reset” automatically when the abnormality is eliminated and temperature returns to a safe level .
YINT offers a polymeric positive temperature coefficient (PPTC) as an over-current protection device that could reduce the costs of warranty and maintenance. It is an ideal choice for equipment with frequent abnormal over-current flowing area. PPTC often used in consumer electronics, power lines, telecommunications, I/O connectors, process control and medical equipment.



插件系列 Radial leaded series

- 保护电压最高到600Vdc Protection devices up to 600Vdc
- 非常高的保持电流 A very hign hold current
- 低电流比 Low trip - to-hold current ratio
- 低阻抗 Low rasistance

贴片产品 Suface mount devices

- 小体积设计 Small volume design
- 低保持电流 Low hold current
- 快速响应 Very fast trip current
- 低阻抗 Low resitance

假如以下产品不能满足您的要求，一定条件下我们也可以提供定制产品，具体可联系YINT电子。

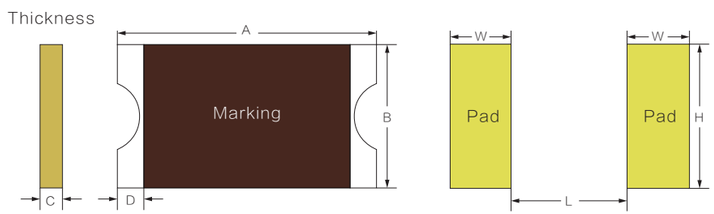
If your application requirements fall outside of our product range, in certain instances we can offer customized solutions. Please contact YINT for more information.

I_h	Hold current: maximum current at which the device will not trip at 25 still air	保持电流：25度环境温度下，器件不断开的最大电流值
I_t	Trip current minimum current at which the device will always trip at 25℃ still air	断开电流：25度环境温度下，让器件断开的最小电流值
V_{MAX}	Maximum voltage device can withstand without damage at rated current	器件耐压值
I_{MAX}	Maximum fault current device can withstand without damage at rated voltage	器件能承受的最大异常电流
T_{trip}	Maximum time to trip at 5 times hold current	5倍Ih下器件断开的最长时间
R_{MAX}	Maximum device resistance at 25 prior to tripping	25度下器件的最大阻值
R_{MIN}	Minimum device resistance at 25 prior to tripping	25度下器件的最小阻值
P_{dtyp}	Typical power dissipation from device when in the tripped state at 25℃ still air	典型功耗：25度环境温度下，器件断开状态的典型功耗

Test Procedures and Requirements

Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @ 25℃	Rmin≤R≤R1max
Time to Trip	Vmax, 25℃, In still air @ 25℃	T≤max. time to trip(seconds)
Hold Current	30 min. at IH, In still air @ 25℃	No trip
Trip Cycle Life	Vmax, Imax, 100 cycles, In still air @ 25℃	No arcing or burning
Trip Endurance	Vmax, 1 hours, In still air @ 25℃	No arcing or burning

Suface mount devices:



Electrical Characteristics

Product model	A	B	C	D	W	H	L
	Max	Max	Max	Min	±0.1	±0.1	±0.1
SMD0603	1.85	1.05	1.00	0.15	1.0	1.0	0.8
SMD0805	2.20	1.50	1.80	0.20	1.0	1.5	1.2
SMD1206	3.50	1.80	1.20	0.15	1.0	1.9	2.0
SMD1210	3.43	2.80	1.40	0.30	1.0	2.5	2.0
SMD1812	4.73	3.41	1.20	0.30	1.78	3.2	3.2
SMD2018	5.44	4.93	1.10	0.30	1.5	4.6	3.4
SMD2920	7.98	5.44	1.15	0.30	2.3	5.6	5.1

Resettable PTCS – 0603 Series

Electrical Characteristics

Products model	Vmax (dc)	Imax (A)	I_{hold} @ 25℃ (A)	I_{trip} @ 25℃ (A)	Pd Max (W)	Max Time to trip		Resistance	
						Current (A)	Time (Sec)	Rmin (Ω)	R1max(Ω)
SMD0603-010	15	40	0.10	0.30	0.5	0.5	1.00	0.900	6.000
SMD0603-020	9	40	0.20	0.50	0.5	1.0	0.60	0.550	3.500
SMD0603-025	9	40	0.25	0.55	0.5	8.0	0.08	0.500	3.000
SMD0603-035	6	40	0.35	0.75	0.5	8.0	0.10	0.200	1.400
SMD0603-050	6	40	0.50	1.00	0.5	8.0	0.10	0.100	0.800
SMD0603-075	6	40	0.75	1.40	0.5	8.0	0.10	0.060	0.450
SMD0603-100	6	40	1.00	2.00	0.5	8.0	0.10	0.040	0.300

Thermal Deration Chart-Ihold

Model	Max ambient operating temperature VS.Hold current(Ihold)								
	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
SMD0603-010	0.13	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.03
SMD0603-020	0.27	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
SMD0603-025	0.32	0.29	0.27	0.25	0.21	0.18	0.16	0.14	0.10
SMD0603-035	0.47	0.41	0.38	0.35	0.29	0.26	0.24	0.20	0.14
SMD0603-050	0.67	0.59	0.54	0.50	0.41	0.37	0.34	0.29	0.20
SMD0603-075	0.98	0.86	0.81	0.75	0.62	0.51	0.46	0.39	0.27
SMD0603-100	1.33	1.18	1.08	1.00	0.80	0.74	0.68	0.57	0.40

Resettable PTCS – 0805 Series

Electrical Characteristics

Products model	Vmax (dc)	Imax (A)	I_{hold} @ 25℃ (A)	I_{trip} @ 25℃ (A)	Pd Max (W)	Max Time to trip		Resistance	
						Current (A)	Time (Sec)	Rmin (Ω)	R1max(Ω)
SMD0805-010	15	100	0.10	0.30	0.5	0.5	1.50	1.000	6.000
SMD0805-020	9/15	100	0.20	0.50	0.5	8.0	0.02	0.650	3.500
SMD0805-035	6	100	0.35	0.75	0.5	8.0	0.10	0.250	1.200
SMD0805-050	6	100	0.50	1.00	0.5	8.0	0.10	0.150	0.850
SMD0805-075	6	40.0	0.75	1.50	0.6	8.0	0.20	0.090	0.385
SMD0805-100	6/8.5	100	1.00	1.95	0.6	8.0	0.30	0.060	0.230
SMD0805-110	6	100	1.10	2.20	0.6	8.0	0.30	0.060	0.210
SMD0805-125	6	100	1.25	2.50	0.6	8.0	0.60	0.030	0.140

Thermal Deration Chart-Ihold

Model	Max ambient operating temperature VS.Hold current(Ihold)								
	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
SMD0805-010	0.14	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.03
SMD0805-020	0.28	0.25	0.23	0.20	0.17	0.14	0.12	0.10	0.07
SMD0805-035	0.47	0.44	0.39	0.35	0.30	0.27	0.24	0.20	0.14
SMD0805-050	0.68	0.62	0.55	0.50	0.40	0.37	0.33	0.29	0.23
SMD0805-075	1.00	0.90	0.79	0.75	0.63	0.57	0.53	0.41	0.34
SMD0805-100	1.35	1.25	1.15	1.00	0.82	0.74	0.65	0.55	0.42
SMD0805-110	1.50	1.37	1.27	1.10	0.90	0.81	0.72	0.60	0.46
SMD0805-125	1.70	1.56	1.42	1.25	1.02	0.93	0.81	0.69	0.52

Resettable PTCS – 1206 Series

Electrical Characteristics

Products model	Vmax (dc)	Imax (A)	I_{hold} @ 25℃ (A)	I_{trip} @ 25℃ (A)	Pd Max (W)	Max Time to trip		Resistance	
						Current (A)	Time (Sec)	Rmin (Ω)	R1max(Ω)
SMD1206-005	60	100	0.050	0.15	0.4	0.3	1.50	3.600	50.00
SMD1206-010	60	100	0.100	0.25	0.4	0.5	1.00	1.600	15.00
SMD1206-012	60	100	0.125	0.29	0.6	1.0	0.20	1.500	15.00
SMD1206-020	24	100	0.200	0.460	0.6	8.0	0.08	0.350	2.500
SMD1206-025	16	100	0.250	0.50	0.6	8.0	0.08	0.350	2.500
SMD1206-035	6/16	100	0.350	0.75	0.6	8.0	0.10	0.250	1.300
SMD1206-050	6 /16/24	100	0.500	1.00	0.6	8.0	0.10	0.150	0.700
SMD1206-075	6/16	100	0.750	1.50	0.6	8.0	0.20	0.090	0.500
SMD1206-100	6	100	1.00	1.80	0.6	8.0	0.30	0.055	0.270
SMD1206-110	6	100	1.10	2.00	0.6	8.0	0.30	0.055	0.270
SMD1206-150	6/13.2	100	1.50	3.00	0.8	8.0	1.00	0.040	0.130
SMD1206-200	6	100	2.00	3.50	0.60	8.0	1.50	0.018	0.080

Thermal Deration Chart-Ihold

Model	Max ambient operating temperature VS.Hold current(Ihold)								
	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
SMD1206-010	0.145	0.33	0.115	0.100	0.085	0.075	0.07	0.06	0.055
SMD1206-012	0.180	0.16	0.14	0.125	0.010	0.090	0.08	0.07	0.05
SMD1206-020	0.33	0.30	0.24	0.20	0.170	0.13	0.11	0.09	0.07
SMD1206-025	0.37	0.33	0.29	0.25	0.22	0.20	0.17	0.15	0.12
SMD1206-035	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
SMD1206-050	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
SMD1206-075	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
SMD1206-100	1.45	1.31	1.15	1.00	0.84	0.77	0.69	0.61	0.48
SMD1206-110	1.49	1.35	1.19	1.10	0.89	0.80	0.74	0.68	0.52
SMD1206-150	2.18	1.94	1.72	1.50	1.28	1.17	1.06	0.96	0.77
SMD1206-200	2.05	2.76	2.30	2.00	1.78	1.56	1.43	1.21	1.05

Resettable PTCS – 1210 Series

Electrical Characteristics

Products model	Vmax (dc)	Imax (A)	I_{hold} @ 25℃ (A)	I_{trip} @ 25℃ (A)	Pd Max (W)	Max Time to trip		Resistance	
						Current (A)	Time (Sec)	Rmin (Ω)	R1max(Ω)
SMD1210-005	30	100	0.05	0.10	0.6	0.30	1.50	2.80	50.0
SMD1210-010	30	100	0.10	0.20	0.6	0.50	0.60	0.80	15.0
SMD1210-020	30	100	0.20	0.40	0.6	8.00	0.02	0.40	5.0
SMD1210-035	6	100	0.35	0.70	0.6	8.00	0.20	0.20	1.30
SMD1210-050	13.2	100	0.50	1.00	0.6	8.00	0.10	0.18	0.90
SMD1210-075	6	100	0.75	1.50	0.6	8.00	0.10	0.07	0.40
SMD1210-110	6	100	1.10	2.20	0.6	8.00	0.30	0.05	0.21
SMD1210-150	6	100	1.50	3.00	0.6	8.00	0.50	0.03	0.11

Thermal Deration Chart-Ihold

Model	Max ambient operating temperature VS.Hold current(Ihold)								
	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
SMD1210-005	0.08	0.07	0.06	0.05	0.04	0.04	0.03	0.03	0.02
SMD1210-010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.03
SMD1210-020	0.29	0.26	0.22	0.20	0.16	0.14	0.13	0.11	0.08
SMD1210-035	0.47	0.45	0.40	0.35	0.33	0.28	0.24	0.21	0.18
SMD1210-050	0.76	0.67	0.58	0.50	0.43	0.40	0.36	0.32	0.28
SMD1210-075	1.00	0.97	0.86	0.75	0.64	0.59	0.54	0.48	0.40
SMD1210-110	1.69	1.48	1.29	1.10	0.88	0.76	0.65	0.57	0.43
SMD1210-150	2.13	1.92	1.71	1.50	1.26	1.14	1.01	0.89	0.71

Resettable PTCS – 1812 Series

Electrical Characteristics

Products model	Vmax (dc)	Imax (A)	I_{hold} @ 25℃ (A)	I_{trip} @ 25℃ (A)	Pd Max (W)	Max Time to trip		Resistance	
						Current (A)	Time (Sec)	Rmin (Ω)	R1max(Ω)
SMD1812-010	30/60	100	0.10	0.30	0.8	0.5	1.50	0.750	15.00
SMD1812-014	60	100	0.14	0.34	0.8	1.5	1.15	0.650	6.000
SMD1812-020	30/60	100	0.20	0.40	0.8	8.0	0.20	0.350	5.000
SMD1812-030	30	100	0.30	0.60	0.8	8.0	0.10	0.250	3.000
SMD1812-050	15/33/60	100	0.50	1.00	0.8	8.0	0.15	0.150	1.000
SMD1812-075	13.2/33	100	0.75	1.50	0.8	8.0	0.20	0.090	0.450
SMD1812-110	8/16/24/33	100	1.10	2.20	0.8	8.0	0.30	0.050	0.250
SMD1812-125	16	100	1.25	2.50	0.8	8.0	0.40	0.050	0.140
SMD1812-150	8/16/24	100	1.50	3.00	0.8	8.0	0.50	0.040	0.160
SMD1812-160	8	100	1.60	2.80	0.8	8.0	1.00	0.030	0.130
SMD1812-200	8/16	100	2.00	4.00	0.8	8.0	2.00	0.020	0.100
SMD1812-260	8	100	2.60	5.00	0.8	8.0	2.50	0.015	0.050
SMD1812-300	8	100	3.00	5.00	0.8	8.0	4.00	0.012	0.040
SMD1812-350	6	100	3.50	6.00	2.0	10.0	4.00	0.008	0.030

Thermal Deration Chart-Ihold

Model	Max ambient operating temperature VS.Hold current(Ihold)								
	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
SMD1812-010	0.16	0.14	0.12	0.11	0.08	0.07	0.06	0.05	0.03
SMD1812-014	0.23	0.19	0.17	0.14	0.12	0.10	0.09	0.08	0.06
SMD1812-020	0.29	0.26	0.23	0.20	0.17	0.15	0.14	0.12	0.10
SMD1812-030	0.44	0.39	0.35	0.30	0.26	0.23	0.21	0.18	0.15
SMD1812-050	0.59	0.57	0.55	0.50	0.45	0.43	0.35	0.30	0.23
SMD1812-075	1.10	0.99	0.87	0.75	0.63	0.57	0.49	0.45	0.35
SMD1812-110	1.60	1.45	1.28	1.10	0.92	0.83	0.71	0.66	0.52
SMD1812-125	2.00	1.75	1.52	1.25	1.00	0.95	0.90	0.75	0.53
SMD1812-150	2.30	2.05	1.77	1.50	1.23	1.09	0.95	0.82	0.61
SMD1812-160	2.10	1.96	1.88	1.60	1.26	1.12	0.98	0.84	0.63
SMD1812-200	2.88	2.61	2.25	2.00	1.80	1.66	1.45	1.09	0.80
SMD1812-260	3.90	3.42	2.96	2.60	2.33	2.07	1.94	1.35	1.00
SMD1812-300	4.15	3.76	3.46	3.00	2.55	2.28	2.01	1.61	1.33
SMD1812-350	4.84	4.39	4.04	3.50	2.98	2.66	2.35	1.88	1.55

Resettable PTCS – 2018 Series

Electrical Characteristics

Products model	Vmax (dc)	Imax (A)	I_{hold} @ 25℃ (A)	I_{trip} @ 25℃ (A)	Pd Max (W)	Max Time to trip		Resistance	
						Current (A)	Time (Sec)	Rmin (Ω)	R1max(Ω)
SMD2018-030	60	100	0.30	0.60	0.9	1.5	3.0	0.50	2.30
SMD2018-050	60	100	0.55	1.20	1.0	2.5	3.0	0.20	1.00
SMD2018-100	15/33	100	1.10	2.2	1.1	8.0	0.4	0.06	0.36
SMD2018-150	15	100	1.50	3.0	1.1	8.0	0.8	0.05	0.17
SMD2018-200	10	100	2.00	4.0	1.1	8.0	2.4	0.03	0.10

Thermal Deration Chart-Ihold

Model	Max ambient operating temperature VS.Hold current(Ihold)								
	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
SMD2018-030	0.48	0.42	0.35	0.30	0.24	0.21	0.17	0.15	0.10
SMD2018-050	0.87	0.77	0.67	0.55	0.46	0.41	0.36	0.31	0.23
SMD2018-100	1.71	1.52	1.32	1.10	0.94	0.84	0.74	0.64	0.50
SMD2018-150	2.38	2.10	1.82	1.50	1.27	1.13	0.99	0.85	0.64
SMD2018-200	2.95	2.65	2.35	2.00	1.74	1.59	1.44	1.29	1.06

Resettable PTCS – 2920 Series

Electrical Characteristics

Products model	Vmax (dc)	Imax (A)	I_{hold} @ 25℃ (A)	I_{trip} @ 25℃ (A)	Pd Max (W)	Max Time to trip		Resistance	
						Current (A)	Time (Sec)	Rmin (Ω)	R1max(Ω)
SMD2920-030	60	10	0.30	0.60	1.5	1.5	3.0	0.600	4.800
SMD2920-050	60	10	0.50	1.00	1.5	2.5	4.0	0.180	1.400
SMD2920-075	33	40	0.75	1.50	1.5	8.0	0.3	0.100	1.000
SMD2920-100	33	40	1.00	2.00	1.5	8.0	0.5	0.065	0.410
SMD2920-125	33	40	1.25	2.50	1.5	8.0	2.0	0.050	0.250
SMD2920-150	33	40	1.50	3.00	1.5	8.0	2.0	0.035	0.230
SMD2920-185	33	40	1.85	3.70	1.5	8.0	2.5	0.030	0.150
SMD2920-200	16/24	40	2.00	4.00	1.5	8.0	4.5	0.020	0.120
SMD2920-250	16	40	2.50	5.00	1.5	8.0	16.0	0.020	0.085
SMD2920-260	6	40	2.60	5.20	1.5	8.0	10.0	0.014	0.075
SMD2920-300	6/16	40	3.00	6.00	1.5	8.0	20.0	0.012	0.048

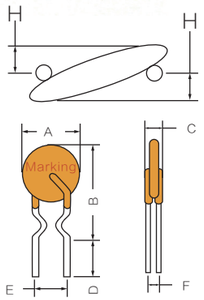
Thermal Deration Chart-Ihold

Model	Max ambient operating temperature VS.Hold current(Ihold)								
	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
SMD2920-030	0.45	0.40	0.35	0.30	0.25	0.23	0.20	0.17	0.14
SMD2920-050	0.76	0.67	0.59	0.50	0.42	0.38	0.33	0.29	0.23
SMD2920-075	1.13	1.01	0.88	0.75	0.62	0.56	0.50	0.44	0.34
SMD2920-100	1.66	1.47	1.29	1.00	0.91	0.83	0.73	0.64	0.50
SMD2920-125	1.89	1.68	1.46	1.25	1.04	0.94	0.83	0.73	0.56
SMD2920-150	2.27	2.01	1.76	1.50	1.25	1.13	1.00	0.87	0.74
SMD2920-185	2.80	2.47	2.17	1.85	1.54	1.39	1.22	1.07	0.85
SMD2920-200	3.02	2.68	2.34	2.00	1.66	1.50	1.32	1.16	0.90
SMD2920-250	3.78	3.35	2.93	2.50	2.08	1.88	1.65	1.45	1.13
SMD2920-260	3.64	3.25	2.91	2.60	2.26	2.08	1.95	1.74	1.13
SMD2920-300	4.53	4.02	3.51	3.00	2.52	2.26	1.99	1.75	1.34

Resettable PTCS – 6V Series

Package Dimensions

Product model	A	B	C	D	E	H	Lead Size
	Max	Max	Max	Min	Max	Typical	
6V-075	8.0	8.3	3.0	7.6	5.8	1.0	d:0.5
6V-090	7.4	11.6	3.0	7.6	5.8	1.0	d:0.5
6V-110	7.4	12.7	3.0	7.6	5.8	1.7	d:0.5
6V-120	7.4	11.7	3.0	7.6	5.8	1.0	d:0.5
6V-135	7.4	12.7	3.0	7.6	5.8	1.0	d:0.5
6V-160	7.6	13.5	3.0	7.6	5.8	1.2	d:0.5
6V-185	7.9	13.7	3.0	7.6	5.8	1.2	d:0.5
6V-250	9.4	14.5	3.0	7.6	5.8	1.5	d:0.5



Electrical Characteristics

Products model	IH	IT	IMAX	VMAX	Trip		Pdtyp	Rmin	Rmax	R1max
	(A)	(A)	(A)	(V)	(A)	(S)	(W)	(Ω)	(Ω)	(Ω)
6V-075	075	1.30	40	6.0	8.0	0.4	0.30	0.110	0.175	0.23
6V-090	0.90	1.80	40	16.0	8.0	1.2	0.60	0.070	0.120	0.18
6V-110	1.10	2.20	40	6.0	8.0	2.3	0.70	0.050	0.095	0.14
6V-120	1.20	2.00	40	6.0	8.0	0.5	0.60	0.070	0.097	0.14
6V-135	1.35	2.70	40	16.0	8.0	0.4	0.81	0.040	0.074	0.11
6V-160	1.60	3.20	40	16.0	8.0	9.0	0.90	0.030	0.061	0.11
6V-185	1.85	3.70	40	16.0	8.0	10.0	1.00	0.030	0.051	0.09
6V-250	2.50	5.00	40	16.0	8.0	40.0	1.21	0.020	0.036	0.06

Thermal Deration Chart-Ihold

Part number	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
6V-075	1.05	0.95	0.85	0.75	0.65	0.60	0.55	0.50	0.43
6V-090	1.40	1.25	1.10	0.90	0.75	0.69	0.65	0.60	0.50
6V-110	1.75	1.52	1.33	1.10	0.99	0.90	0.80	0.73	0.63
6V-120	1.69	1.52	1.36	1.20	1.04	0.96	0.88	0.80	0.68
6V-135	2.15	1.94	1.70	1.35	1.20	1.14	1.00	0.90	0.81
6V-160	2.49	2.21	1.94	1.60	1.42	1.31	1.19	1.03	0.88
6V-185	2.87	2.59	2.28	1.85	1.63	1.52	1.33	1.21	1.05
6V-250	3.82	3.44	3.03	2.50	2.17	2.00	1.81	1.59	1.39

Resettable PTCS – 16V Series

Package Dimensions

Product model	A	B	C	D	E	图式
	Max	Max	Typ	Min	Max	Fig
16V-075	6.9	11.4	5.1	7.6	3.0	Fig1
16V-090	7.4	13.4	5.1	7.6	3.0	Fig2
16V-110	7.9	14.2	5.1	7.6	3.0	Fig2
16V-120	7.4	12.1	5.1	7.6	3.0	Fig1
16V-135	8.9	13.5	5.1	7.6	3.0	Fig2
16V-160	8.9	15.9	5.1	7.6	3.0	Fig2
16V-185	10.7	15.7	5.1	7.6	3.0	Fig2
16V-250	11.5	18.4	5.1	7.6	3.0	Fig2
16V-300	7.1	11.0	5.1	7.6	3.0	Fig1&2
16V-400	8.9	12.8	5.1	7.6	3.0	Fig1&2
16V-500	10.4	14.3	5.1	7.6	3.0	Fig1&2
16V-600	10.7	17.1	5.1	7.6	3.0	Fig1&2
16V-700	11.2	19.7	5.1	7.6	3.0	Fig1&2
16V-800	12.7	20.9	5.1	7.6	3.0	Fig1&2
16V-900	14.0	21.7	5.1	7.6	3.0	Fig1&2
16V-1000	16.5	25.2	5.1	7.6	3.0	Fig1&2
16V-1100	17.5	26.0	5.1	7.6	3.0	Fig1&2
16V-1200	17.5	28.0	5.1	7.6	3.5	Fig1&2
16V-1400	23.5	27.9	10.2	7.6	3.5	Fig1&2

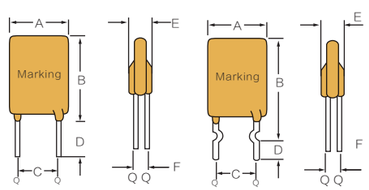


Fig2(引线打弯形，请特殊说明)

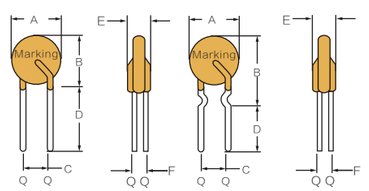


Fig2(引线打弯形，请特殊说明)

PPTC

Resettable PTCS – 16V Series

Electrical Characteristics

Products model	IH	IT	IMAX	VMAX	Trip		Pdtyp	Rmin	Rmax	R1max
	(A)	(A)	(A)	(V)	(A)	(S)	(W)	(Ω)	(Ω)	(Ω)
16V-075	0.75	1.30	40	16	3.75	0.4	0.30	0.14	0.23	0.30
16V-090	0.90	1.80	40	16	4.50	1.2	0.60	0.10	0.18	0.24
16V-110	1.10	2.20	40	16	5.50	2.3	0.70	0.08	0.14	0.21
16V-120	1.20	2.00	40	16	6.00	0.5	0.60	0.08	0.14	0.21
16V-135	1.35	2.70	40	16	6.75	4.5	0.81	0.06	0.12	0.19
16V-160	1.60	3.20	40	16	8.00	9.0	0.90	0.05	0.11	0.18
16V-185	1.85	3.70	40	16	9.25	10.0	1.00	0.05	0.09	0.14
16V-250	2.50	5.00	40	16	12.5	10.0	1.21	0.03	0.06	0.12
16V-300	3.0	5.1	100	16	15.0	2.0	2.3	0.038	0.070	0.090
16V-400	4.0	6.8	100	16	20.0	3.5	2.4	0.021	0.040	0.060
16V-500	5.0	8.5	100	16	25.0	3.6	2.6	0.015	0.025	0.032
16V-600	6.0	10.2	100	16	30.0	5.8	2.8	0.010	0.020	0.026
16V-700	7.0	11.9	100	16	35.0	8.0	3.0	0.008	0.015	0.020
16V-800	8.0	13.6	100	16	40.0	9.0	3.0	0.006	0.012	0.016
16V-900	9.0	15.3	100	16	45.0	12.0	3.3	0.005	0.011	0.014
16V-1000	10.0	17.0	100	16	50.0	12.5	3.6	0.004	0.009	0.011
16V-1100	11.0	18.7	100	16	55.0	13.5	3.7	0.004	0.008	0.010
16V-1200	12.0	20.4	100	16	60.0	16.0	4.2	0.004	0.007	0.009
16V-1400	14.0	23.8	100	16	70.0	20.0	4.6	0.003	0.005	0.007

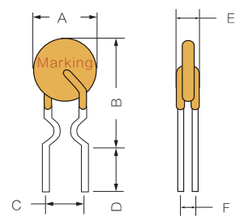
Thermal Deration Chart-Ihold

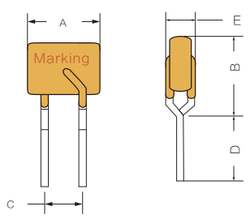
Part number	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
16V-075	1.05	0.95	0.85	0.75	0.65	0.60	0.55	0.50	0.43
16V-090	1.40	1.25	1.10	0.90	0.75	0.69	0.65	0.60	0.50
16V-110	1.75	1.52	1.33	1.10	0.99	0.90	0.80	0.73	0.63
16V-120	1.69	1.52	1.36	1.20	1.04	0.96	0.88	0.80	0.68
16V-135	2.15	1.94	1.70	1.35	1.20	1.14	1.00	0.90	0.81
16V-160	2.49	2.21	1.94	1.60	1.42	1.31	1.19	1.03	0.88
16V-185	2.87	2.59	2.28	1.85	1.63	1.52	1.33	1.21	1.05
16V-250	3.82	3.44	3.03	2.50	2.17	2.00	1.81	1.59	1.39
16V-300	4.40	4.00	3.60	3.00	2.60	2.40	2.10	1.90	1.40
16V-400	5.90	5.30	4.80	4.00	3.50	3.20	2.80	2.50	1.90
16V-500	7.30	6.60	6.00	5.00	4.40	4.00	3.60	3.10	2.40
16V-600	8.80	8.00	7.20	6.00	5.20	4.80	4.20	3.80	2.80
16V-700	10.3	9.30	8.40	7.00	6.20	5.60	5.00	4.40	3.30
16V-800	11.7	10.7	9.60	8.00	6.90	6.40	5.60	5.10	3.70
16V-900	13.2	11.9	10.7	9.00	7.90	7.20	6.40	5.60	4.20
16V-1000	14.7	13.3	12.0	10.0	8.70	8.00	7.00	6.30	4.70
16V-1100	16.1	14.6	13.1	11.0	9.70	8.80	7.80	6.90	5.20
16V-1200	17.6	16.0	14.4	12.0	10.4	9.60	8.40	7.60	5.60
16V-1400	20.5	18.7	16.8	14.0	12.1	11.2	9.80	8.90	6.50

Resettable PTCS – 30V Series

Package Dimensions

Product model	A	B	C	D	E	Size(ø)
	Max	Max	Max	Min	Max	Unit:mm
30V-040	7.9	13.7	5.1	7.6	3.0	0.6+0.05 C
30V-050	7.4	12.2	5.1	7.6	3.0	0.6+0.05 C
30V-075	7.4	12.2	5.1	7.6	3.0	0.6+0.05 C
30V-090	7.4	12.2	5.1	7.6	3.0	0.6+0.05
30V-110	7.4	14.2	5.1	7.6	3.0	0.6+0.05
30V-135	8.9	13.5	5.1	7.6	3.0	0.6+0.05
30V-160	8.9	15.2	5.1	7.6	3.0	0.6+0.05
30V-185	10.2	15.7	5.1	7.6	3.0	0.6+0.05
30V-200	10.2	15.2	5.1	7.6	3.0	0.6+0.05
30V-250	11.4	18.3	5.1	7.6	3.0	0.6+0.05
30V-300	11.4	17.3	5.1	7.6	3.0	0.8+0.05
30V-400	14.0	20.1	5.1	7.6	3.0	0.8+0.05
30V-500	14.0	24.9	10.2	7.6	3.0	0.8+0.05
30V-600	18.0	24.9	10.2	7.6	3.0	0.8+0.05
30V-700	19.1	26.7	10.2	7.6	3.0	0.8+0.05
30V-800	21.6	29.2	10.2	7.6	3.0	0.8+0.05
30V-900	24.1	29.7	10.2	7.6	3.0	0.8+0.05





Resettable PTCS – 30V Series

Electrical Characteristics

Products model	IH	IT	IMAX	VMAX	Trip		Pdtyp	Rmin	Rmax
	(A)	(A)	(A)	(V)	(A)	(S)	(W)	(Ω)	(Ω)
30V-040	0.40	0.80	40	30	2.00	5.0	0.6	0.40	1.0 (R1)
30V-050	0.50	1.00	40	30	2.50	4.8	0.6	0.290	0.510
30V-075	0.75	1.50	40	30	3.50	5.2	0.6	0.140	0.200
30V-090	0.90	1.80	40	30	4.50	5.9	0.6	0.070	0.12
30V-110	1.10	2.20	40	30	5.58	6.6	0.7	0.050	0.10
30V-135	1.35	2.70	40	30	6.75	7.3	0.8	0.040	0.08
30V-160	1.60	3.20	40	30	8.00	8.0	0.9	0.030	0.07
30V-185	1.85	3.70	40	30	9.25	8.7	1.0	0.030	0.06
30V-200	2.00	4.00	40	30	10.0	9.5	1.2	0.040	0.01
30V-250	2.50	5.00	40	30	12.50	10.3	1.2	0.020	0.04
30V-300	3.00	6.00	40	30	15.00	10.8	2.0	0.020	0.05
30V-400	4.00	8.00	40	30	20.00	12.7	2.5	0.010	0.03
30V-500	5.00	10.00	40	30	25.00	14.5	3.0	0.010	0.03
30V-600	6.00	12.00	40	30	30.00	16.0	3.5	0.005	0.02
30V-700	7.00	14.00	40	30	35.00	17.5	3.8	0.005	0.02
30V-800	8.00	16.00	40	30	40.00	18.8	4.0	0.005	0.02
30V-900	9.00	18.00	40	30	45.00	20.0	4.2	0.005	0.01

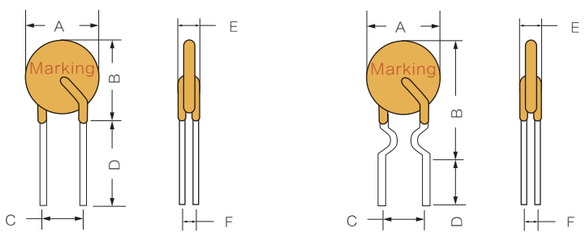
Thermal Deration Chart-Ihold

Part number	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
30V-040	0.66	0.59	0.50	0.40	0.33	0.30	0.26	0.20	0.14
30V-050	0.83	0.74	0.63	0.50	0.41	0.36	0.30	0.25	0.18
30V-075	1.26	1.11	0.95	0.75	0.61	0.54	0.45	0.39	0.28
30V-090	1.40	1.25	1.10	0.90	0.75	0.69	0.65	0.60	0.50
30V-110	1.75	1.52	1.33	1.10	0.99	0.90	0.80	0.73	0.63
30V-135	2.15	1.94	1.70	1.35	1.20	1.14	1.00	0.90	0.81
30V-160	2.49	2.21	1.94	1.60	1.42	1.31	1.19	1.03	0.88
30V-185	2.87	2.59	2.28	1.85	1.63	1.52	1.33	1.21	1.05
30V-200	3.06	2.75	2.42	2.00	1.74	2.60	1.45	1.27	1.12
30V-250	3.82	3.44	3.03	2.50	2.17	2.00	1.81	1.59	1.39
30V-300	4.55	4.10	3.60	3.00	2.65	2.51	2.24	2.01	1.74
30V-400	6.00	5.40	4.74	4.00	3.47	3.28	2.82	2.63	2.26
30V-500	7.44	6.68	5.80	5.00	4.30	4.03	3.58	3.22	2.77
30V-600	8.90	7.99	7.08	6.00	5.13	4.82	4.27	3.84	3.30
30V-700	10.35	9.30	8.21	7.00	5.95	5.58	4.96	4.46	3.84
30V-800	11.60	10.60	9.35	8.00	6.79	6.36	5.64	5.07	4.36
30V-900	13.25	11.90	10.49	9.00	7.53	7.12	6.32	5.69	4.88

Resettable PTCS – 60V Series

Package Dimensions

Product model	A	B	C	D	E	Lead ø	
	Max	Max	Max	Min	Max	Unit:mm	
60V-005	7.4	12.7	5.1	7.6	3.1	DI	0.5
60V-010	7.4	11.6	5.1	7.6	3.1	DI	0.5
60V-017	7.4	12.7	5.1	7.6	3.1	DI	0.5
60V-020	7.4	11.7	5.1	7.6	3.1	DI	0.5
60V-025	7.4	12.7	5.1	7.6	3.1	DI	0.5
60V-030	7.4	12.7	5.1	7.6	3.1	DI	0.5
60V-040	7.6	13.5	5.1	7.6	3.1	DI	0.5
60V-050	7.9	13.7	5.1	7.6	3.1	DI	0.5
60V-065	9.4	14.5	5.1	7.6	3.1	DI	0.6
60V-075	10.2	15.2	5.1	7.6	3.1	DI	0.6
60V-090	11.2	15.8	5.1	7.6	3.1	DI	0.6
60V-110	12.8	17.5	5.1	7.6	3.1	DZ	0.8
60V-135	14.5	19.1	5.1	7.6	3.1	DZ	0.8
60V-160	16.3	20.8	5.1	7.6	3.1	DZ	0.8
60V-185	17.5	22.4	5.1	7.6	3.1	DZ	0.8
60V-250	20.8	25.4	10.2	7.6	3.1	DZ	0.8
60V-300	23.9	28.6	10.2	7.6	3.1	DZ	0.8
60V-375	27.2	31.8	10.2	7.6	3.1	DZ	0.8
60V-500	27.2	31.8	10.2	7.6	3.1	DZ	0.8



PPTC

Resettable PTCS – 60V Series

Electrical Characteristics

Products model	IH	IT	IMAX	VMAX	Trip		Pdtyp	Rmin	Rmax	R1max
	(A)	(A)	(A)	(V)	(A)	(S)	(W)	(Ω)	(Ω)	(Ω)
60V-005	0.05	0.10	40	60	0.25	5.0	0.30	7.50	12.0	15.0
60V-010	0.10	0.20	40	60	0.50	8.0	0.51	2.50	4.50	6.0
60V-017	0.17	0.34	40	60	0.85	5.0	0.60	2.00	3.20	4.5
60V-020	0.20	0.40	40	60	1.00	3.6	0.52	1.50	2.84	3.8
60V-025	0.25	0.50	40	60	1.25	3.2	0.52	1.00	1.95	2.8
60V-030	0.30	0.60	40	60	1.50	3.0	0.59	0.76	1.36	1.80
60V-040	0.40	0.80	40	60	2.00	3.8	0.66	0.52	0.86	1.10
60V-050	0.50	1.00	40	60	2.50	4.0	0.80	0.41	0.77	1.00
60V-065	0.65	1.30	40	60	3.25	5.3	0.90	0.27	0.48	0.60
60V-075	0.75	1.50	40	60	3.75	6.3	0.95	0.18	0.40	0.50
60V-090	0.90	1.80	40	60	4.5	7.2	1.00	0.14	0.31	0.42
60V-110	1.10	2.20	40	60	5.5	8.2	1.51	0.14	0.25	0.33
60V-135	1.35	2.70	40	60	6.75	9.6	1.71	0.12	0.19	0.26
60V-160	1.60	3.20	40	60	8.0	11.4	1.98	0.09	0.14	0.19
60V-185	1.85	3.70	40	60	9.25	12.6	2.10	0.08	0.12	0.16
60V-250	2.50	5.00	40	60	12.5	15.6	2.50	0.05	0.08	0.11
60V-300	3.00	6.00	40	60	15.00	19.8	2.80	0.04	0.06	0.08
60V-375	3.75	7.50	40	60	18.75	24.0	3.20	0.03	0.05	0.07
60V-500	5.00	10.0	40	60	25.00	30.0	4.20	0.02	0.07	0.10

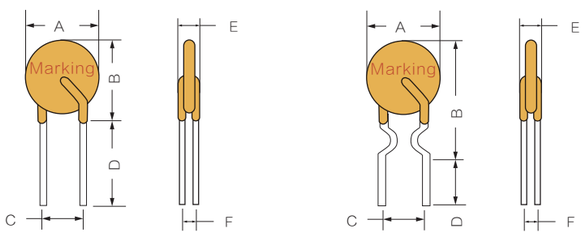
Thermal Deration Chart-Ihold

Part number	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
60V-005	0.077	0.069	0.061	0.050	0.044	0.040	0.036	0.032	0.025
60V-010	0.18	0.15	0.13	0.10	0.08	0.07	0.06	0.05	0.03
60V-017	0.28	0.24	0.20	0.17	0.14	0.12	0.10	0.09	0.06
60V-020	0.34	0.29	0.25	0.20	0.16	0.14	0.13	0.10	0.07
60V-025	0.42	0.36	0.31	0.25	0.20	0.18	0.16	0.12	0.09
60V-030	0.52	0.44	0.38	0.30	0.24	0.22	0.18	0.14	0.10
60V-040	0.66	0.57	0.50	0.40	0.32	0.29	0.24	0.20	0.14
60V-050	0.83	0.74	0.63	0.50	0.41	0.36	0.30	0.25	0.18
60V-065	1.10	0.95	0.82	0.65	0.53	0.47	0.40	0.33	0.24
60V-075	1.26	1.11	0.95	0.75	0.61	0.54	0.45	0.39	0.28
60V-090	1.52	1.30	1.15	0.90	0.73	0.65	0.55	0.47	0.33
60V-110	1.82	1.60	1.35	1.10	0.89	0.79	0.65	0.55	0.40
60V-135	2.20	1.91	1.65	1.35	1.09	0.96	0.80	0.68	0.50
60V-160	2.60	2.30	1.95	1.60	1.30	1.13	1.00	0.80	0.60
60V-185	3.00	2.63	2.30	1.85	1.50	1.33	1.12	0.92	0.67
60V-250	4.05	3.58	3.02	2.50	2.02	1.80	1.55	1.30	0.90
60V-300	4.82	4.16	3.62	3.00	2.43	2.16	1.85	1.50	1.09
60V-375	6.02	5.19	4.50	3.75	3.02	2.68	2.30	1.95	1.39
60V-500	7.44	6.68	5.80	5.00	4.30	4.03	3.58	3.22	2.77

Resettable PTCS – 72V Series

Package Dimensions

Product model	A	B	C	D	E	Lead ø	
	Max	Max	Max	Min	Max	Unit:mm	
72V-005	7.4	12.7	5.1	7.6	3.1	DI	0.5
72V-010	7.4	11.6	5.1	7.6	3.1	DI	0.5
72V-017	7.4	12.7	5.1	7.6	3.1	DI	0.5
72V-020	7.4	11.7	5.1	7.6	3.1	DI	0.5
72V-025	7.4	12.7	5.1	7.6	3.1	DI	0.5
72V-030	7.4	12.7	5.1	7.6	3.1	DI	0.5
72V-040	7.6	13.5	5.1	7.6	3.1	DI	0.5
72V-050	7.9	13.7	5.1	7.6	3.1	DI	0.5
72V-065	9.4	14.5	5.1	7.6	3.1	DI	0.6
72V-075	10.2	15.2	5.1	7.6	3.1	DI	0.6
72V-090	11.2	15.8	5.1	7.6	3.1	DI	0.6
72V-110	12.8	17.5	5.1	7.6	3.1	DZ	0.8
72V-135	14.5	19.1	5.1	7.6	3.1	DZ	0.8
72V-160	16.3	20.8	5.1	7.6	3.1	DZ	0.8
72V-185	17.5	22.4	5.1	7.6	3.1	DZ	0.8
72V-250	20.8	25.4	10.2	7.6	3.1	DZ	0.8
72V-300	23.9	28.6	10.2	7.6	3.1	DZ	0.8
72V-375	27.2	31.8	10.2	7.6	3.1	DZ	0.8
72V-500	27.2	31.8	10.2	7.6	3.1	DZ	0.8



Resettable PTCS – 72V Series

Electrical Characteristics

Products model	IH	IT	IMAX	VMAX	Trip		Pdtyp	Rmin	Rmax	R1max
	(A)	(A)	(A)	(V)	(A)	(S)	(W)	(Ω)	(Ω)	(Ω)
72V-005	0.05	0.10	40	60	0.25	5.0	0.30	7.50	12.0	15.0
72V-010	0.10	0.20	40	60	0.50	8.0	0.51	2.50	4.50	6.0
72V-017	0.17	0.34	40	60	0.85	5.0	0.60	2.00	3.20	4.5
72V-020	0.20	0.40	40	60	1.00	3.6	0.52	1.50	2.84	3.8
72V-025	0.25	0.50	40	60	1.25	3.2	0.52	1.00	1.95	2.8
72V-030	0.30	0.60	40	60	1.50	3.0	0.59	0.76	1.36	1.80
72V-040	0.40	0.80	40	60	2.00	3.8	0.66	0.52	0.86	1.10
72V-050	0.50	1.00	40	60	2.50	4.0	0.80	0.41	0.77	1.00
72V-065	0.65	1.30	40	60	3.25	5.3	0.90	0.27	0.48	0.60
72V-075	0.75	1.50	40	60	3.75	6.3	0.95	0.18	0.40	0.50
72V-090	0.90	1.80	40	60	4.5	7.2	1.00	0.14	0.31	0.42
72V-110	1.10	2.20	40	60	5.5	8.2	1.51	0.14	0.25	0.33
72V-135	1.35	2.70	40	60	6.75	9.6	1.71	0.12	0.19	0.26
72V-160	1.60	3.20	40	60	8.0	11.4	1.98	0.09	0.14	0.19
72V-185	1.85	3.70	40	60	9.25	12.6	2.10	0.08	0.12	0.16
72V-250	2.50	5.00	40	60	12.5	15.6	2.50	0.05	0.08	0.11
72V-300	3.00	6.00	40	60	15.00	19.8	2.80	0.04	0.06	0.08
72V-375	3.75	7.50	40	60	18.75	24.0	3.20	0.03	0.05	0.07
72V-500	5.00	10.0	40	60	25.00	30.0	4.20	0.02	0.07	0.10

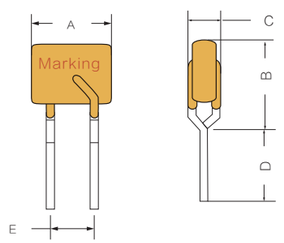
Thermal Deration Chart-Ihold

Part number	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
72V-005	0.077	0.069	0.061	0.050	0.044	0.040	0.036	0.032	0.025
72V-010	0.18	0.15	0.13	0.10	0.08	0.07	0.06	0.05	0.03
72V-017	0.28	0.24	0.20	0.17	0.14	0.12	0.10	0.09	0.06
72V-020	0.34	0.29	0.25	0.20	0.16	0.14	0.13	0.10	0.07
72V-025	0.42	0.36	0.31	0.25	0.20	0.18	0.16	0.12	0.09
72V-030	0.52	0.44	0.38	0.30	0.24	0.22	0.18	0.14	0.10
72V-040	0.66	0.57	0.50	0.40	0.32	0.29	0.24	0.20	0.14
72V-050	0.83	0.74	0.63	0.50	0.41	0.36	0.30	0.25	0.18
72V-065	1.10	0.95	0.82	0.65	0.53	0.47	0.40	0.33	0.24
72V-075	1.26	1.11	0.95	0.75	0.61	0.54	0.45	0.39	0.28
72V-090	1.52	1.30	1.15	0.90	0.73	0.65	0.55	0.47	0.33
72V-110	1.82	1.60	1.35	1.10	0.89	0.79	0.65	0.55	0.40
72V-135	2.20	1.91	1.65	1.35	1.09	0.96	0.80	0.68	0.50
72V-160	2.60	2.30	1.95	1.60	1.30	1.13	1.00	0.80	0.60
72V-185	3.00	2.63	2.30	1.85	1.50	1.33	1.12	0.92	0.67
72V-250	4.05	3.58	3.02	2.50	2.02	1.80	1.55	1.30	0.90
72V-300	4.82	4.16	3.62	3.00	2.43	2.16	1.85	1.50	1.09
72V-375	6.02	5.19	4.50	3.75	3.02	2.68	2.30	1.95	1.39
72V-500	7.44	6.68	5.80	5.00	4.30	4.03	3.58	3.22	2.77

Resettable PTCS – 250V Series

Package Dimensions

Product model	A	B	C	D	E
	Max	Max	Max	Min	Max
250V-040	5.8	9.9	3.8	4.7	5.0
250V-050	5.8	9.9	3.8	4.7	5.0
250V-060	5.8	9.9	3.8	4.7	5.0
250V-080	5.8	9.9	3.8	4.7	5.0
250V-090	5.8	9.9	3.8	4.7	5.0
250V-110	6.0	11.0	3.8	4.7	5.0
250V-120	6.5	11.0	3.8	4.7	5.0
250V-145	6.5	11.0	3.8	4.7	5.0
250V-180	9.0	12.6	3.5	4.7	5.0
250V-200	9.0	12.6	3.5	4.7	5.0
250V-300	9.0	12.6	3.5	4.7	5.0
250V-400	9.5	15.2	3.5	4.7	5.0
250V-500	11.0	15.8	3.5	4.7	5.0
250V-600	11.0	15.8	3.5	4.7	5.0
250V-800	11.0	15.8	3.5	4.7	5.0
250V-1000	14.0	19.1	3.5	4.7	5.0
250V-1200	16.0	20.8	3.5	4.7	5.0
250V-1400	17.0	22.4	3.5	4.7	5.0
250V-1500	17.0	22.4	3.5	4.7	5.0
250V-2000	24.0	28.0	3.5	4.7	10.0



Resettable PTCS – 250V Series

Electrical Characteristics

Products model	IH	IT	IMAX	VMAX	Trip		Pdtyp	Rmin	Rmax	R1max
	(A)	(A)	(A)	(V)	(A)	(S)	(W)	(Ω)	(Ω)	(Ω)
250V-040	0.04	0.09	3.0	250	1.00	0.45	1.0	23.0	60.00	75.0
250V-050	0.05	0.10	3.0	250	1.00	0.48	1.0	22.0	60.0	72.0
250V-060	0.06	0.12	3.0	250	1.00	0.50	1.0	22.0	32.0	40.0
250V-080	0.08	0.16	3.0	250	0.35	3.00	1.0	14.0	22.0	28.0
250V-090	0.09	0.18	3.0	250	0.35	3.00	1.0	10.0	20.0	26.0
250V-110	0.11	0.22	3.0	250	1.00	0.75	1.0	7.00	11.0	16.0
250V-120	0.12	0.24	3.0	250	1.00	0.75	1.0	8.00	12.0	15.0
250V-145	0.145	0.29	3.0	250	0.725	2.5	1.0	3.5	6.5	10.0
250V-180	0.18	0.50	3.0	250	1.00	15.0	1.0	0.80	2.0	10.0
250V-200	0.20	0.40	3.0	250	1.00	15.0	1.5	1.50	3.0	4.50
250V-300	0.30	0.60	3.0	250	1.5	10.0	1.0	1.50	2.5	3.20
250V-400	0.40	0.80	10.0	250	2.00	10.0	2.5	0.75	0.95	2.50
250V-500	0.50	1.00	10.0	250	2.5.0	10.0	3.0	0.60	0.70	1..30
250V-600	0.60	1.20	10.0	250	3.0	10.0	3.0	0.50	0.70	1.00
250V-800	0.80	1.60	10.0	250	4.0	8.00	3.5	0.45	0.65	1.00
250V-1000	1.00	2.00	10.0	250	5.0	10.00	5.0	0.28	0.45	0.70
250V-1200	1.20	2.40	10.0	250	6.0	10.00	5.0	0.25	0.30	0.50
250V-1400	1.40	2.80	10.0	250	7.0	12.00	5.0	0.18	0.25	0.50
250V-1500	1.50	3.00	10.0	250	8.0	13.00	5.0	0.18	0.22	0.50
250V-2000	2.00	4.00	10.0	250	10.0	14.00	5.0	0.12	0.19	0.30

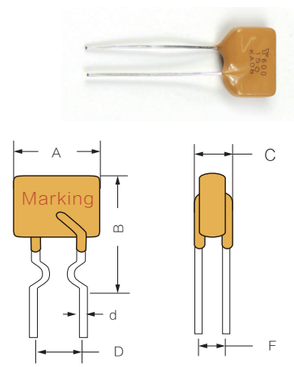
Thermal Deration Chart-Ihold

Part number	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
250V-040	0.078	0.065	0.055	0.040	0.034	0.028	0.022	0.018	0.016
250V-050	0.080	0.070	0.060	0.050	0.040	0.036	0.030	0.027	0.020
250V-060	0.100	0.090	0.070	0.060	0.050	0.050	0.040	0.040	0.030
250V-080	0.124	0.110	0.095	0.080	0.066	0.059	0.051	0.044	0.033
250V-090	0.140	0.130	0.110	0.090	0.080	0.070	0.060	0.050	0.040
250V-110	0.171	0.151	0.131	0.110	0.091	0.081	0.071	0.061	0.046
250V-120	0.191	0.170	0.148	0.120	0.104	0.093	0.082	0.071	0.055
250V-145	0.225	0.199	0.172	0.145	0.119	0.106	0.093	0.080	0.060
250V-180	0.269	0.240	0.211	0.180	0.153	0.138	0.123	0.109	0.087
250V-200	0.320	0.280	0.250	0.200	0.170	0.160	0.140	0.120	0.090
250V-300	0.478	0.42	0.370	0.300	0.255	0.232	0.204	0.177	0.137
250V-400	0.640	0.570	0.490	0.400	0.350	0.310	0.270	0.240	0.180
250V-500	0.870	0.790	0.680	0.500	0.420	0.370	0.320	0.260	0.220
250V-600	0.960	0.850	0.740	0.600	0.520	0.470	0.410	0.360	0.280
250V-800	1.270	1.130	0.990	0.800	0.690	0.620	0.550	0.470	0.370
250V-1000	1.590	1.420	1.230	1.000	0.870	0.780	0.680	0.590	0.460
250V-1200	1.910	1.700	1.480	1.200	1.040	0.930	0.820	0.710	0.550
250V-1400	2.230	1.980	1.730	1.400	1.210	1.090	0.960	0.830	0.640
250V-1500	2.390	2.130	1.850	1.500	1.300	1.160	1.030	0.890	0.690
250V-2000	3.180	2.830	2.470	2.000	1.730	1.550	1.370	1.180	0.920

Resettable PTCS – 600V Series

Package Dimensions

Product model	A	B	C	D	Lead Size
	Max	Max	Max	Min	
600V-030	13.5	12.6	6.0	4.7	0.75
600V-040	13.5	12.6	6.0	4.7	0.75
600V-060	13.5	12.6	6.0	4.7	0.75
600V-080	13.5	12.6	6.0	4.7	0.75
600V-110	13.5	12.6	6.0	4.7	0.75
600V-150	13.5	12.6	6.0	4.7	0.75
600V-160	14.0	14.0	6.5	5.1	0.75
600V-200	14.0	14.0	6.5	5.1	0.75



Electrical Characteristics

Products model	IH	IT	IMAX	VMAX	Trip		Rmin	Rmax	Lead
	(A)	(A)	(A)	(V)	(A)	(S)	(Ω)	(Ω)	(Φmm)
600V-030	0.03	0.06	3.0	600	1.0	20	70	110	0.78
600V-040	0.04	0.08	3.0	600	1.0	20	50	80	0.78
600V-060	0.06	0.12	3.0	600	1.0	20	20	35	0.78
600V-080	0.08	0.16	3.0	600	1.0	20	15	25	0.60
600V-110	0.11	0.25	3.0	600	1.0	3.0	6.0	18	0.78
600V-150	0.15	0.30	3.0	600	1.0	5.0	6.0	12.0	16.0
600V-160	0.16	0.32	3.0	600	1.0	12	4.0	10.0	0.75
600V-200	0.20	0.40	3.0	600	1.0	12	5.0	10.0	0.75

Thermal Deration Chart-Ihold

Part number	-40℃	-20℃	0℃	25℃	40℃	50℃	60℃	70℃	85℃
600V-030	138%	119%	100%	92%	83%	73%	64%	55%	42%
600V-040	138%	119%	100%	92%	83%	73%	64%	55%	42%
600V-060	138%	119%	100%	92%	83%	73%	64%	55%	42%
600V-080	138%	119%	100%	92%	83%	73%	64%	55%	42%
600V-110	138%	119%	100%	92%	83%	73%	64%	55%	42%
600V-150	138%	119%	100%	92%	83%	73%	64%	55%	42%
600V-200	138%	119%	100%	92%	83%	73%	64%	55%	42%

半导体放电管 TSS（Thyristor Surge Suppressors）

TSS是一种PNPN型的器件，可以看作一个没有门极的晶闸管。当一个浪涌电压超过TSS的关断电压时（VDRM），TSS将电压限制在转折电压以下，这时，当通过TSS的电流超过开关电流，TSS将处于短路的状态。当通过TSS的电流低于去维持电流IH，TSS将重置恢复到高阻抗状态。

TSS is a PNPN type device that can be regarded as a thyristor without a gate. When a surge voltage exceeds the peak off-state voltage of TSS (VDRM), TSS limits the voltage below the break-over voltage. At this time, When the current flowing through TSS exceeds the switching current, the TSS will be in a short-circuit condition. When the current flowing through TSS lower than the holding current (IH), the TSS will reset to a high-impedance state.

应用注意 Restrictions

因为TSS是一个开关型的器件，故不能直接在AC线上使用，他必须放在负载后面，如果不这样做，将会导致TSS击穿损坏。

Because the TSS device is a crowbar device, it cannot be used directly across the AC line; it must be placed behind a load. Failing to do so will result in exceeding the TSS device's maximum on-state current rating, which may cause the device to enter a permanent short-circuit condition.

特点 Advantages

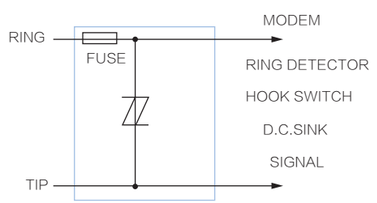
响应速度快，电气特性稳定，高可靠性，低电容，并且因为TSS是一个开关型器件，他不会被过电压损坏。

Advantages of the TSS device include its fast response time, stable electrical characteristics, long term reliability, and low capacitance. Also, because the TSS device is a crowbar device, it cannot be damaged by voltage.

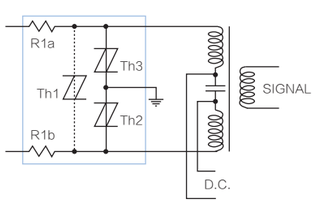
应用 Applications

TSS主要应用于电信行业和数据通信的过压保护，其他领域的应用，应该参考TSS选型指南。

TSS devices are primarily used as the principle overvoltage protector in telecommunications and data communications circuits. For applications outside this realm, follow the design criteria in "TSS Device Selection Criteria".

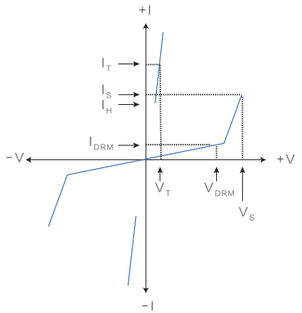


Modem Inter-wire Protection



ISDN Protection

V-ICharacteristics



V_{DRM}	Peak Off-state Voltage - maximum voltage that can be applied while maintaining off state. The V_{DRM} of the Tss device must be greater than the maximum operating voltage of the circuit that the TSS device is protecting.	最大关断电压-使TSS保持关断状态的最大电压。VDRM必须大于被保护电路的最大操作电压。
V_S	Switching Voltage - maximum voltage prior to switching to on state. The VS of the TSS device should be equal to or less than the instantaneous peak voltage rating of the component it is protecting.	转折电压-使TSS切换到导通状态的最大电压。TSS的VS必须大于被保护设备能够耐受的瞬时峰值电压。
V_T	On-state Voltage-maximum voltage measured at rated on-state current.	通态电压-TSS处于导通状态是两端的最大电压
IDRM	Leakage Current-maximum peak off-state current measured at VDRM	漏电流-TSS处于关断状态时的最大漏电流
I_S	Switching Current-maximum current required to switch to on state	转折电流-TSS切换到导通状态所需的最大电流。
I_T	On-state Current - maximum rated continuous on-state current	通态电流-最大连续通态电流
I_H	Holding Current-minimum current required to maintain on state. Because TIA-968-A 4.4.1.7.3 specifies that registered terminal equipment not exceed 140 mA dc per conductor under short-circuit conditions, the holding current of the TSS device is set at 150 mA. For specific design criteria, the holding current (IH) of the TSS device must be greater than the DC current that can be supplied during an operational and short circuit condition.	保持电流-使TSS维持在导通状态的最小电流。因为TIA-968-A 4.4.1.7.3指定终端设备的半导体短路状态下电流不能超过140mA，故TSS的保持电流设置在150mA。特定的设计标准，TSS的IH必须大于DC供电端操作和短路电流。
C_O	Off-state Capacitance - typical capacitance measured in off state. Assuming that the critical point of insertion loss is 70 percent of the original signal value, the TSS device can be used in most applications with transmission speeds up to 30 MHz.	关断状态下电容-关断状态下测量的典型电容。假定插入损耗的临界点是70%原始信号值，TSS最多可以应用于30MHz的信号线上。
I_{PP}	Peak Pulse Current-maximum rated peak impulse current. For circuits that do not require additional series resistance, the surge current rating (IPP) of the TSS device should be greater than or equal to the surge currents associated with the lightning immunity tests of the applicable regulatory requirement (IPK). For circuits that use additional series resistance, the surge current rating (IPP) of the TSS device should be greater than or equal to the available surge currents associated with the lightning immunity tests of the applicable regulatory requirement (IPK(available)	脉冲峰值电流-TSS能承受的最大脉冲峰值电流。对于不需要额外串连电阻的电路，TSS的IPP必须大于等于相关标准要求的防浪涌等级。对于可增加串连电阻的电路，TSS的IPP必须大于等于放浪涌测试时实际的电流。

SMA/DO-214AC -----TA Series

Surge Ratings

Series	Ipp 2/10μS Amps	Ipp 8/20μS Amps	Ipp 10/160μS Amps	Ipp 10/560μS Amps	Ipp 10/1000μS Amps	ITSM 60HZ Amps	Di/Dt Amps /μS
SMA /TA	150	150	90	50	45	20	500

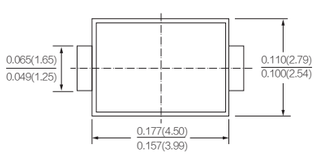
Summary Electrical Characteristics, T a = 25 °C (Unless Otherwise Noted)

Parameter Description		I_{DRM}@VDRM		VS ① @IS		V_T@ I_T		I_H	CO ②
Unit		μA	V	V	mA	V	A	mA	pF
Type	ENV	max	min	max	max	max	max	min	max
P0080TA	L	5	6	25	800	4	2.2	50	80
P0220TA	L	5	15	32	800	4	2.2	50	60
P0300TA	L	5	25	40	800	4	2.2	50	60
P0640TA	L	5	58	77	800	4	2.2	150	50
P0720TA	L	5	65	87	800	4	2.2	150	50
P0900TA	L	5	75	98	800	4	2.2	150	50
P1100TA	L	5	90	130	800	4	2.2	150	45
P1300TA	L	5	120	160	800	4	2.2	150	45
P1500TA	L	5	140	180	800	4	2.2	150	45
P1800TA	L	5	170	220	800	4	2.2	150	35
P2300TA	L	5	190	260	800	4	2.2	150	35
P2600TA	L	5	220	300	800	4	2.2	150	35
P3100TA	L	5	275	350	800	4	2.2	150	35
P3500TA	L	5	320	400	800	4	2.2	150	35

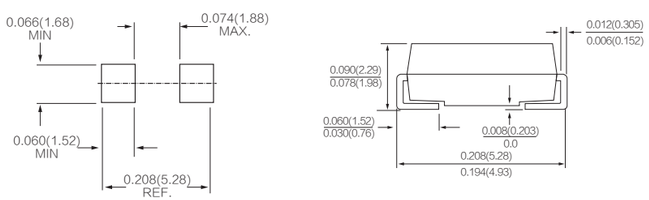
L : Lead-free
①Vs is measured at 100KV/s
②Off-state capacitance is measured in VDC=2V, VRMS=1V, f=1MHz

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC(SMA)



Mounting Pad Layout



SMB/DO-214AA -----S Series

Surge Ratings

Series	Ipp 2/10μS Amps	Ipp 8/20μS Amps	Ipp 10/160μS Amps	Ipp 10/560μS Amps	Ipp 10/1000μS Amps	ITSM 60HZ Amps	Di/Dt Amps /μS
A	150	150	90	50	45	20	500
B	250	250	150	100	80	30	500
C	500	400	200	150	100	50	500

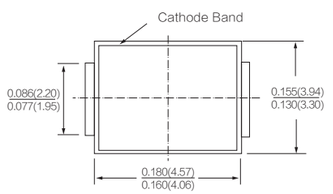
Summary Electrical Characteristics, T a = 25 °C (Unless Otherwise Noted)

Parameter Description		I_{DRM}@VDRM		VS ① @IS		V_T@ I_T		I_H	CO ②		
Unit		μA	V	V	mA	V	A	mA	A	B	C
Type	ENV	max	min	max	max	max	max	min	max		
P0080S	L	5	6	25	800	4	2.2	50	80	130	130
P0220S	L	5	18	30	800	4	2.2	50	60	120	120
P0300S	L	5	25	40	800	4	2.2	50	60	120	100
P0640S	L	5	58	77	800	4	2.2	150	50	80	200
P0720S	L	5	66	87	800	4	2.2	150	50	75	150
P0900S	L	5	75	98	800	4	2.2	150	50	70	140
P1100S	L	5	90	130	800	4	2.2	150	45	70	110
P1300S	L	5	120	160	800	4	2.2	150	45	60	100
P1500S	L	5	140	180	800	4	2.2	150	45	55	90
P1800S	L	5	170	220	800	4	2.2	150	35	50	90
P2300S	L	5	190	260	800	4	2.2	150	35	50	80
P2600S	L	5	220	300	800	4	2.2	150	35	45	80
P3100S	L	5	275	350	800	4	2.2	150	35	45	75
P3500S	L	5	320	400	800	4	2.2	150	35	40	60

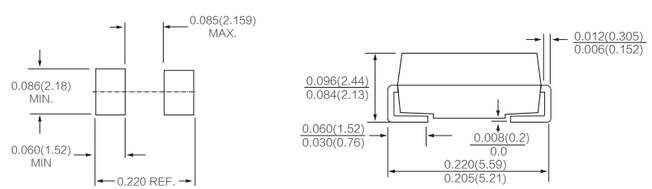
For individual "SA" " SB" "SC" Surge ratings,see table above
L : Lead-free
①Vs is measured at 100KV/s
②Off-state capacitance is measured in VDC=2V, VRMS=1V, f=1MHz

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA(SMB)



Mounting Pad Layout



TO-92 -----E Series

Surge Ratings

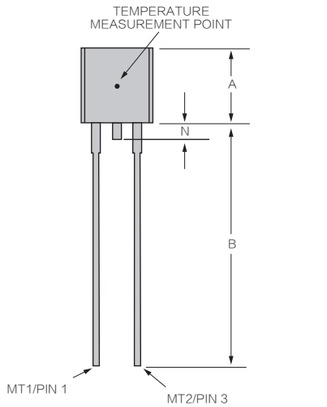
Series	Ipp 2/10μS Amps	Ipp 8/20μS Amps	Ipp 10/160μS Amps	Ipp 10/560μS Amps	Ipp 10/1000μS Amps	ITSM 60HZ Amps	Di/Dt Amps /μS
A	150	150	90	50	45	20	500
B	250	250	150	100	80	30	500
C	500	400	200	150	100	50	500

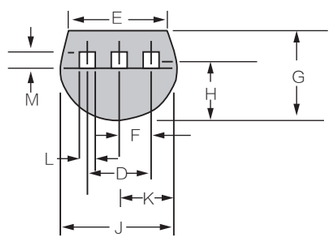
Summary Electrical Characteristics, T a = 25 °C (Unless Otherwise Noted)

Parameter Description		I_{DRM}@VDRM		VS ① @IS		V_T@ I_T		I_H	CO ②		
Unit		μA	V	V	mA	V	A	mA	A	B	C
Type	ENV	max	min	max	max	max	max	min	max		
P0080E	L	5	6	25	800	4	2.2	50	80	130	130
P0220E	L	5	18	30	800	4	2.2	50	60	120	120
P0300E	L	5	25	40	800	4	2.2	50	60	120	100
P0640E	L	5	58	77	800	4	2.2	150	50	80	200
P0720E	L	5	66	87	800	4	2.2	150	50	75	150
P0900E	L	5	75	98	800	4	2.2	150	50	70	140
P1100E	L	5	90	130	800	4	2.2	150	45	70	110
P1300E	L	5	120	160	800	4	2.2	150	45	60	100
P1500E	L	5	140	180	800	4	2.2	150	45	55	90
P1800E	L	5	170	220	800	4	2.2	150	35	50	90
P2300E	L	5	190	260	800	4	2.2	150	35	50	80
P2600E	L	5	220	300	800	4	2.2	150	35	45	80
P3100E	L	5	275	350	800	4	2.2	150	35	45	75
P3500E	L	5	320	400	800	4	2.2	150	35	40	60

For individual "LA" " LB" "LC" Surge ratings,see table above
L : Lead-free
①Vs is measured at 100KV/s
②Off-state capacitance is measured in VDC=2V, VRMS=1V, f=1MHz

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





DIM	Inches		Millimeters	
	Min	Max	Min	Max
A	0.176	0.196	4.47	4.98
B	0.500	-	12.70	-
D	0.095	0.105	2.41	2.67
E	0.150	-	3.81	-
F	0.046	0.054	1.16	1.37
G	0.135	0.145	3.43	3.68
H	0.088	0.096	2.23	2.44
J	0.176	0.186	4.47	4.73
K	0.088	0.096	2.23	2.44
L	0.013	0.019	0.33	0.48
M	0.013	0.017	0.33	0.43
N	-	0.060	-	1.52

The TO-92 is designed to meet mechanical standards as set forth in JEDEC publication number 95.

DO-15/DO-27 -----L Series

Surge Ratings

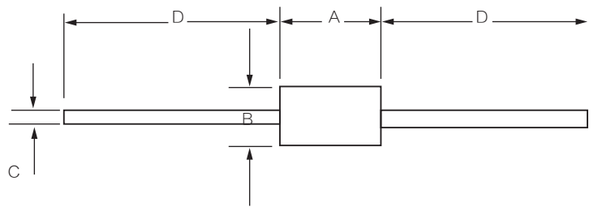
Series	Ipp 2/10μS Amps	Ipp 8/20μS Amps	Ipp 10/160μS Amps	Ipp 10/560μS Amps	Ipp 10/1000μS Amps	ITSM 60HZ Amps	Di/Dt Amps /μS
A	150	150	90	50	45	20	500
B	250	250	150	100	80	30	500
C	500	400	200	150	100	50	500

Summary Electrical Characteristics, T a = 25 °C (Unless Otherwise Noted)

Parameter Description		I_{DRM}@VDRM		VS ① @IS		V_T@ I_T		I_H	CO ②		
Unit		μA	V	V	mA	V	A	mA	A	B	C
Type	ENV	max	min	max	max	max	max	min	max		
P0080L	L	5	6	25	800	4	2.2	50	80	130	130
P0220L	L	5	18	30	800	4	2.2	50	60	120	120
P0300L	L	5	25	40	800	4	2.2	50	60	120	100
P0640L	L	5	58	77	800	4	2.2	150	50	80	200
P0720L	L	5	66	87	800	4	2.2	150	50	75	150
P0900L	L	5	75	98	800	4	2.2	150	50	70	140
P1100L	L	5	90	130	800	4	2.2	150	45	70	110
P1300L	L	5	120	160	800	4	2.2	150	45	60	100
P1500L	L	5	140	180	800	4	2.2	150	45	55	90
P1800L	L	5	170	220	800	4	2.2	150	35	50	90
P2300L	L	5	190	260	800	4	2.2	150	35	50	80
P2600L	L	5	220	300	800	4	2.2	150	35	45	80
P3100L	L	5	275	350	800	4	2.2	150	35	45	75
P3500L	L	5	320	400	800	4	2.2	150	35	40	60

For individual "LA" " LB" "LC" Surge ratings,see table above
L : Lead-free
①Vs is measured at 100KV/s
②Off-state capacitance is measured in VDC=2V, VRMS=1V, f=1MHz

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



DO-15 / DO-27

DO-15 LA&LB Series

DIM	Inches		Millimeters	
	Min	Max	Min	Max
A	0.230	0.300	5.80	7.60
B	0.104	0.140	2.60	3.60
C	0.026	0.034	0.70	0.90
D	1.000	–	25.40	–

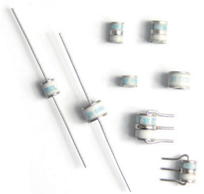
DO-27 LC Series

DIM	Inches		Millimeters	
	Min	Max	Min	Max
A	–	0.370	–	9.50
B	–	0.250	–	6.40
C	0.048	0.052	1.20	1.30
D	1.000	–	25.40	–

气体放电管 GDT（Gas Discharge Tubes）

气体放电管通过气体电离放电的原理来消除浪涌电压，他们具有高绝缘阻抗，低电容，和低漏电流的特点，因此对设备的正常运行影响很小。
YINT可提供高性能的小封装的插件/贴片的气体放电管，具有很快的响应速度，大浪涌抑制能力，从而降低设备损坏的风险。因为GDT的浪涌吸收能力，是雷击浪涌防护的一个很好的选择，特别适用于室外的电信设备。

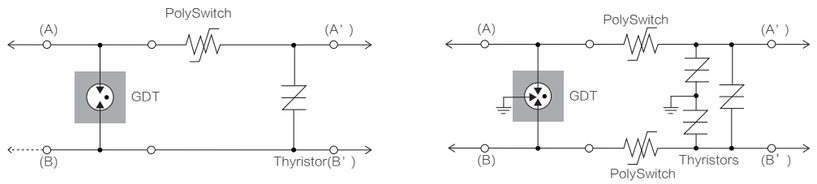
Gas discharge tubes eliminate the surge voltage by the principle of gas ionization discharge. They have high insulation resistance, low capacitance and low leakage current to ensure minimal effect on normal operation of equipment.
YINT provides high-performance and small size packaging (DIP/SMD) gas discharge tubes with fast response speed and surge suppression capability, which reduces the risk of equipment damage, this is also a good choice for protecting devices from damaging by surge current caused by lightning, especially suitable for outdoor telecommunications equipment.



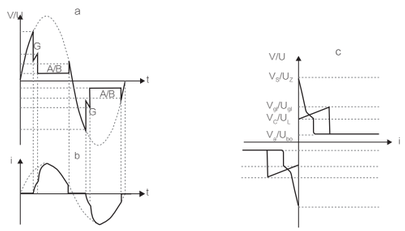
特点 Feature

- 高绝缘电阻 High insulation resistance
- 开关型过压保护器件 Crowbar overvoltage protection
- 低电容和插入损耗 Low capacitance and insertion loss
- 电压从70V到3000V Voltage from 70V to 3000V
- 冲击电流可以高达数百千安 Surge current up to several hundred thousand Amps

Application



Limitation of a sinusoidal overvoltage by a surge arrester



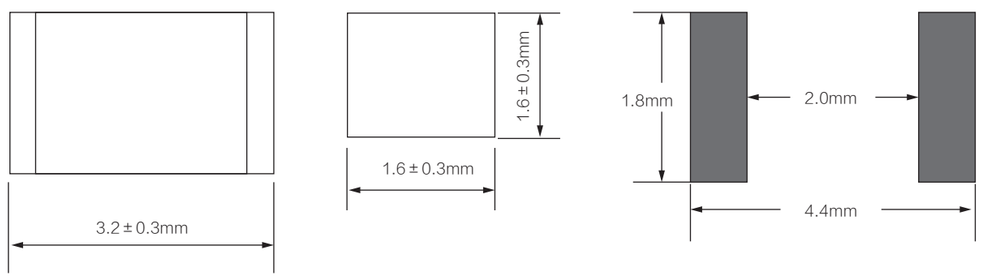
a： shows the voltage curve at the arrester
b： the current as a function of time when limiting a sinusoidal voltage surge.
c： The V/I characteristic of the surge arrester was obtained by combining the graphs of voltage and current as a function of time.

SMD1206 Series Electrical Characteristics

Part Number	DC Spark-over Voltage	Impulse Spark-over Voltage	Minimum Insulation Resistance		Maximum Capacitance	Nominal Impulse Discharge Current	Impulse DischargeVoltage
	100V/s (V)	1KV/μs (V)	Test Voltage(V)	(MΩ)	1MHz (pF)	8/20μs	10/700 uS
SMD1206-091	90+30%	<750	50	1000	0.3	0.5KA	4KV
SMD1206-151	150+30%	<750	50	1000	0.3	0.5KA	4KV
SMD1206-201	200+30%	<950	100	1000	0.3	0.5KA	4KV
SMD1206-231	230+30%	<950	100	1000	0.3	0.5KA	4KV
SMD1206-301	300+30%	<950	100	1000	0.3	0.5KA	4KV
SMD1206-351	350+30%	<950	100	1000	0.3	0.5KA	4KV
SMD1206-401	400+30%	<1050	100	1000	0.3	0.5KA	4KV
SMD1206-421	420+30%	<1050	100	1000	0.3	0.5KA	4KV
SMD1206-471	470+30%	<1050	100	1000	0.3	0.5KA	4KV

GDT

PACKAGE OUTLINE DIMENSIONS in millimeters :SMD1206

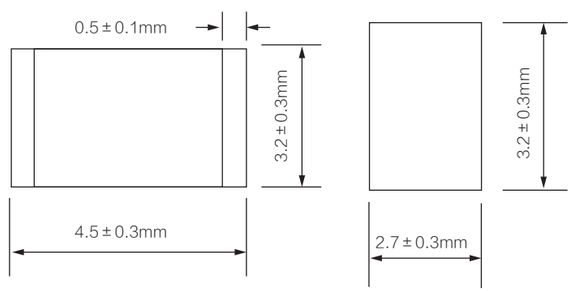


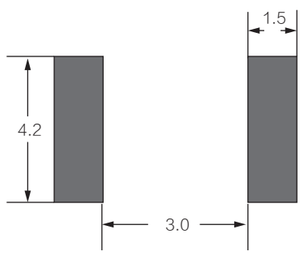
Mounting Pad Layout

SMD1812 Series Electrical Characteristics

Part Number	DC Spark-over Voltage	Impulse Spark-over Voltage	Minimum Insulation Resistance		Maximum Capacitance	Nominal Impulse Discharge Current	Impulse DischargeVoltage
	100V/s (V)	1KV/μs (V)	Test Voltage(V)	(MΩ)	1MHz (pF)	8/20μs	10/700 uS
SMD1812-071	75+30%	300	50	1	0.5	2KA	4KV
SMD1812-091	90+30%	300	50	1	0.5	2KA	4KV
SMD1812-121	120+30%	300	50	1	0.5	2KA	4KV
SMD1812-151	150+30%	300	50	1	0.5	2KA	4KV
SMD1812-201	200+30%	300	100	1	0.5	2KA	4KV
SMD1812-231	230+30%	300	100	1	0.5	2KA	4KV
SMD1812-301	300+30%	300	100	1	0.5	2KA	4KV
SMD1812-351	350+30%	300	100	1	0.5	2KA	4KV
SMD1812-401	400+30%	300	100	1	0.5	2KA	4KV
SMD1812-421	420+30%	300	100	1	0.5	2KA	4KV
SMD1812-471	470+30%	300	100	1	0.5	2KA	4KV
SMD1812-501	500+30%	300	100	1	0.5	2KA	4KV
SMD1812-601	600+30%	300	100	1	0.5	2KA	4KV

PACKAGE OUTLINE DIMENSIONS in millimeters :SMD1812





Mounting Pad Layout

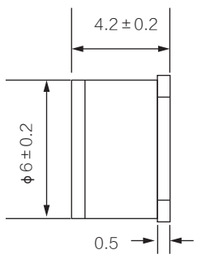
2R***S-6×4.2 Series Electrical Characteristics (TA = 25° C unless otherwise noted)

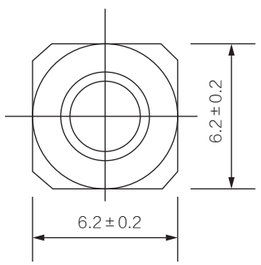
Part Number	DC Breakdown Voltage	Tolerance	Impulse Spark-over Voltage	Impulse Discharge Current 10hits (5hits each polarity)	AC Discharge Current 5 hits	Insulation Resistance*	Capacitance
	100V/s (V)	of Vs	1KV/μs (V)	8/20μs	50Hz	GΩ	1MHz
2R075S-6×4.2	75V	±20%	≤600V	5KA	5A	≥10	≤1pF
2R090S-6×4.2	90V	±20%	≤600V	5KA	5A	≥10	≤1pF
2R150S-6×4.2	150V	±20%	≤600V	5KA	5A	≥10	≤1pF
2R200S-6×4.2	200V	±20%	≤700V	5KA	5A	≥10	≤1pF
2R230S-6×4.2	230V	±20%	≤700V	5KA	5A	≥10	≤1pF
2R300S-6×4.2	300V	±20%	≤900V	5KA	5A	≥10	≤1pF
2R350S-6×4.2	350V	±20%	≤1000V	5KA	5A	≥10	≤1pF
2R400S-6×4.2	400V	±20%	≤1000V	5KA	5A	≥10	≤1pF
2R470S-6×4.2	470V	±20%	≤1200V	5KA	5A	≥10	≤1pF
2R600S-6×4.2	600V	±20%	≤1400V	5KA	5A	≥10	≤1pF
2R1000S-6×4.2	1000V	±20%	≤1800V	3KA	5A	≥1	≤1pF

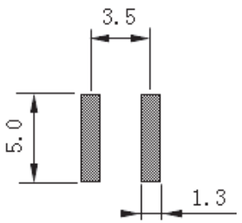
1) At delivery AQL 0.65 leave Ⅱ Military Standard 105 E.
2) In ionized mode
3) Test according to ITU-T Rec.k.12

GDT

Specification Status: Draft （mm）







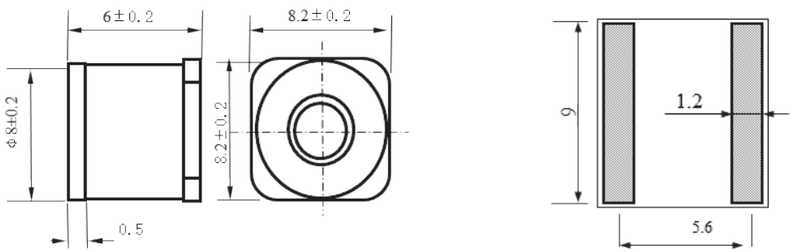
Recommended pad size

2R***S-8×6 Series Electrical Characteristics (TA = 25° C unless otherwise noted)

Part Number	DC Breakdown Voltage	Tolerance	Impulse Spark-over Voltage	Impulse Discharge Current 10hits (5hits each polarity)	AC Discharge Current 5 hits	Insulation Resistance*	Capacitance
	100V/s (V)	of Vs	1KV/μs (V)	8/20μs	50Hz	GΩ	1MHz
2R075S-8×6	75V	±20%	≤600V	10KA	10A	≥10	≤1pF
2R090S-8×6	90V	±20%	≤600V	10KA	10A	≥10	≤1pF
2R150S-8×6	150V	±20%	≤700V	10KA	10A	≥10	≤1pF
2R200S-8×6	200V	±20%	≤700V	10KA	10A	≥10	≤1pF
2R230S-8×6	230V	±20%	≤700V	10KA	10A	≥10	≤1pF
2R300S-8×6	300V	±20%	≤900V	10KA	10A	≥10	≤1pF
2R350S-8×6	350V	±20%	≤1000V	10KA	10A	≥10	≤1pF
2R400S-8×6	400V	±20%	≤1000V	10KA	10A	≥10	≤1pF
2R470S-8×6	470V	±20%	≤1200V	10KA	10A	≥10	≤1pF
2R600S-8×6	600V	±20%	≤1400V	10KA	10A	≥10	≤1pF

1) At delivery AQL 0.65 leave Ⅱ Military Standard 105 E.
2) In ionized mode
3) Test according to ITU-T Rec.k.12

Specification Status: Draft （mm）

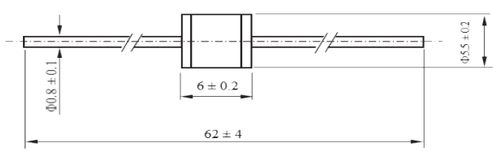


2R***L-5.5×6 Series Electrical Characteristics (TA = 25° C unless otherwise noted)

Part Number	DC Breakdown Voltage	Tolerance	Impulse Spark-over Voltage	Impulse Discharge Current 10hits (5hits each polarity)	AC Discharge Current 5 hits	Insulation Resistance*	Capacitance
	100V/s (V)	of Vs	1KV/μs (V)	8/20μs	50Hz	GΩ	1MHz
2R075L-5.5×6	75V	±20%	≤600V	5KA	5A	≥10	≤1pF
2R090L-5.5×6	90V	±20%	≤600V	5KA	5A	≥10	≤1pF
2R150L-5.5×6	150V	±20%	≤600V	5KA	5A	≥10	≤1pF
2R200L-5.5×6	200V	±20%	≤700V	5KA	5A	≥10	≤1pF
2R230L-5.5×6	230V	±20%	≤700V	5KA	5A	≥10	≤1pF
2R300L-5.5×6	300V	±20%	≤900V	5KA	5A	≥10	≤1pF
2R350L-5.5×6	350V	±20%	≤1000V	5KA	5A	≥10	≤1pF
2R400L-5.5×6	400V	±20%	≤1000V	5KA	5A	≥10	≤1pF
2R470L-5.5×6	470V	±20%	≤1200V	5KA	5A	≥10	≤1pF
2R600L-5.5×6	600V	±20%	≤1400V	5KA	5A	≥10	≤1pF
2R1000L-5.5×6	1000V	±20%	≤2000V	3KA	3A	≥1	≤1pF

1) At delivery AQL 0.65 leave Ⅱ Military Standard 105 E.
2) In ionized mode
3) Test according to ITU-T Rec.k.12

Specification Status: Draft （mm）

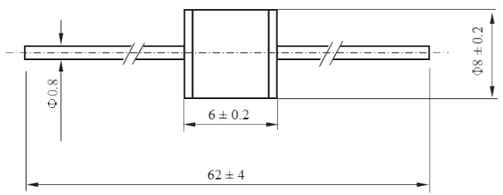


2R***L-8×6 Series Electrical Characteristics (TA = 25° C unless otherwise noted)

Part Number	DC Breakdown Voltage	Tolerance	Impulse Spark-over Voltage	Impulse Discharge Current 10hits (5hits each polarity)	AC Discharge Current 5 hits	Insulation Resistance*	Capacitance
	100V/s (V)	of Vs	1KV/μs (V)	8/20μs	50Hz	GΩ	1MHz
2R075L-8×6	75V	±20%	≤600V	10KA	10A	≥10	≤1pF
2R090L-8×6	90V	±20%	≤600V	10KA	10A	≥10	≤1pF
2R150L-8×6	150V	±20%	≤600V	10KA	10A	≥10	≤1pF
2R200L-8×6	200V	±20%	≤700V	10KA	10A	≥10	≤1pF
2R230L-8×6	230V	±20%	≤700V	10KA	10A	≥10	≤1pF
2R300L-8×6	300V	±20%	≤900V	10KA	10A	≥10	≤1pF
2R350L-8×6	350V	±20%	≤1000V	10KA	10A	≥10	≤1pF
2R400L-8×6	400V	±20%	≤1000V	10KA	10A	≥10	≤1pF
2R470L-8×6	470V	±20%	≤1200V	10KA	10A	≥10	≤1pF
2R600L-8×6	600V	±20%	≤1400V	10KA	10A	≥10	≤1pF

1) At delivery AQL 0.65 leave Ⅱ Military Standard 105 E.
2) In ionized mode
3) Test according to ITU-T Rec.k.12

Specification Status: Draft （mm）

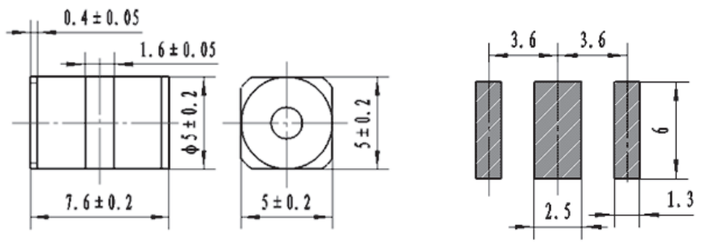


3R***S-5×7.6 Series Electrical Characteristics (TA = 25° C unless otherwise noted)

Part Number	DC Breakdown Voltage	Tolerance	Impulse Spark-over Voltage	Impulse Discharge Current 10hits (5hits each polarity)	AC Discharge Current 5 hits	Insulation Resistance*	Capacitance
	100V/s (V)	of Vs	1KV/μs (V)	8/20μs	50Hz	GΩ	1MHz
3R075S-5×7.6	75V	±20%	≤600V	5KA	5A	≥10	≤1pF
3R090S-5×7.6	90V	±20%	≤600V	5KA	5A	≥10	≤1pF
3R150S-5×7.6	150V	±20%	≤600V	5KA	5A	≥10	≤1pF
3R200S-5×7.6	200V	±20%	≤700V	5KA	5A	≥10	≤1pF
3R230S-5×7.6	230V	±20%	≤700V	5KA	5A	≥10	≤1pF
3R300S-5×7.6	300V	±20%	≤900V	5KA	5A	≥10	≤1pF
3R350S-5×7.6	350V	±20%	≤1000V	5KA	5A	≥10	≤1pF
3R400S-5×7.6	400V	±20%	≤1000V	5KA	5A	≥10	≤1pF
3R470S-5×7.6	470V	±20%	≤1200V	5KA	5A	≥10	≤1pF
3R600S-5×7.6	600V	±20%	≤1400V	5KA	5A	≥10	≤1pF

1) At delivery AQL 0.65 leave Ⅱ Military Standard 105 E.
2) In ionized mode
3) Test according to ITU-T Rec.k.12

Specification Status: Draft （mm）

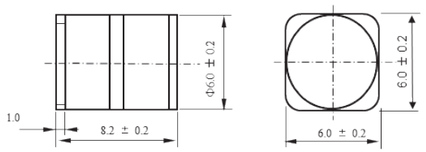


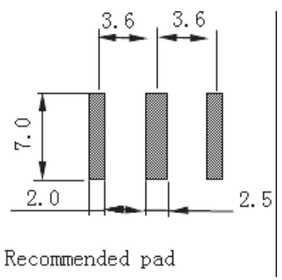
3R***S-6×8 Series Electrical Characteristics (TA = 25° C unless otherwise noted)

Part Number	DC Breakdown Voltage	Tolerance	Impulse Spark-over Voltage	Impulse Discharge Current 10hits (5hits each polarity)	AC Discharge Current 5 hits	Insulation Resistance*	Capacitance
	100V/s (V)	of Vs	1KV/μs (V)	8/20μs	50Hz	GΩ	1MHz
3R075S-6×8	75V	±20%	≤600V	10KA	10A	≥10	≤1pF
3R090S-6×8	90V	±20%	≤600V	10KA	10A	≥10	≤1pF
3R150S-6×8	150V	±20%	≤600V	10KA	10A	≥10	≤1pF
3R200S-6×8	200V	±20%	≤700V	10KA	10A	≥10	≤1pF
3R230S-6×8	230V	±20%	≤700V	10KA	10A	≥10	≤1pF
3R300S-6×8	300V	±20%	≤900V	10KA	10A	≥10	≤1pF
3R350S-6×8	350V	±20%	≤1000V	10KA	10A	≥10	≤1pF
3R400S-6×8	400V	±20%	≤1000V	10KA	10A	≥10	≤1pF
3R470S-6×8	470V	±20%	≤1200V	10KA	10A	≥10	≤1pF
3R600S-6×8	600V	±20%	≤1400V	10KA	10A	≥10	≤1pF

1) At delivery AQL 0.65 leave Ⅱ Military Standard 105 E.
2) In ionized mode
3) Test according to ITU-T Rec.k.12

Specification Status: Draft （mm）



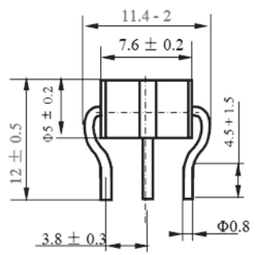


3R***L-5×7.6 Series Electrical Characteristics (TA = 25° C unless otherwise noted)

Part Number	DC Breakdown Voltage	Tolerance	Impulse Spark-over Voltage	Impulse Discharge Current 10hits (5hits each polarity)	AC Discharge Current 5 hits	Insulation Resistance*	Capacitance
	100V/s (V)	of Vs	1KV/μs (V)	8/20μs	50Hz	GΩ	1MHz
3R075L-5×7.6	75V	±20%	≤600V	5KA	5A	≥10	≤1pF
3R090L-5×7.6	90V	±20%	≤600V	5KA	5A	≥10	≤1pF
3R150L-5×7.6	150V	±20%	≤600V	5KA	5A	≥10	≤1pF
3R200L-5×7.6	200V	±20%	≤700V	5KA	5A	≥10	≤1pF
3R230L-5×7.6	230V	±20%	≤700V	5KA	5A	≥10	≤1pF
3R300L-5×7.6	300V	±20%	≤900V	5KA	5A	≥10	≤1pF
3R350L-5×7.6	350V	±20%	≤1000V	5KA	5A	≥10	≤1pF
3R400L-5×7.6	400V	±20%	≤1000V	5KA	5A	≥10	≤1pF
3R470L-5×7.6	470V	±20%	≤1200V	5KA	5A	≥10	≤1pF
3R600L-5×7.6	600V	±20%	≤1400V	5KA	5A	≥10	≤1pF

1) At delivery AQL 0.65 leave Ⅱ Military Standard 105 E.
2) In ionized mode
3) Test according to ITU-T Rec.k.12

Specification Status: Draft （mm）



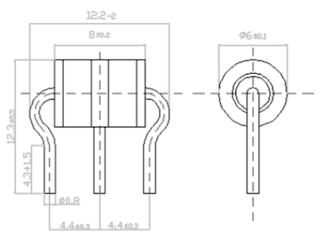
GDT

3R***L-6×8 Series Electrical Characteristics (TA = 25° C unless otherwise noted)

Part Number	DC Breakdown Voltage	Tolerance	Impulse Spark-over Voltage	Impulse Discharge Current 10hits (5hits each polarity)	AC Discharge Current 5 hits	Insulation Resistance*	Capacitance
	100V/s (V)	of Vs	1KV/μs (V)	8/20μs	50Hz	GΩ	1MHz
3R075L-6×8	75V	±20%	≤600V	10KA	10A	≥10	≤1pF
3R090L-6×8	90V	±20%	≤600V	10KA	10A	≥10	≤1pF
3R150L-6×8	150V	±20%	≤600V	10KA	10A	≥10	≤1pF
3R200L-6×8	200V	±20%	≤700V	10KA	10A	≥10	≤1pF
3R230L-6×8	230V	±20%	≤700V	10KA	10A	≥10	≤1pF
3R300L-6×8	300V	±20%	≤900V	10KA	10A	≥10	≤1pF
3R350L-6×8	350V	±20%	≤1000V	10KA	10A	≥10	≤1pF
3R400L-6×8	400V	±20%	≤1000V	10KA	10A	≥10	≤1pF
3R470L-6×8	470V	±20%	≤1200V	10KA	10A	≥10	≤1pF
3R600L-6×8	600V	±20%	≤1400V	10KA	10A	≥10	≤1pF

1) At delivery AQL 0.65 leave Ⅱ Military Standard 105 E.
2) In ionized mode
3) Test according to ITU-T Rec.k.12

Specification Status: Draft （mm）

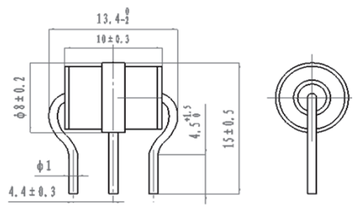


3R***L-8×10 Series Electrical Characteristics (TA = 25° C unless otherwise noted)

Part Number	DC Breakdown Voltage	Tolerance	Impulse Spark-over Voltage	Impulse Discharge Current 10hits (5hits each polarity)	AC Discharge Current 5 hits	Insulation Resistance*	Capacitance
	100V/s (V)	of Vs	1KV/μs (V)	8/20μs	50Hz	GΩ	1MHz
3R075L-8×10	75V	±20%	≤600V	10KA	10A	≥10	≤1pF
3R090L-8×10	90V	±20%	≤600V	10KA	10A	≥10	≤1pF
3R150L-8×10	150V	±20%	≤600V	10KA	10A	≥10	≤1pF
3R200L-8×10	200V	±20%	≤700V	10KA	10A	≥10	≤1pF
3R230L-8×10	230V	±20%	≤700V	10KA	10A	≥10	≤1pF
3R300L-8×10	300V	±20%	≤900V	10KA	10A	≥10	≤1pF
3R350L-8×10	350V	±20%	≤1000V	10KA	10A	≥10	≤1pF
3R400L-8×10	400V	±20%	≤1000V	10KA	10A	≥10	≤1pF
3R470L-8×10	470V	±20%	≤1200V	10KA	10A	≥10	≤1pF
3R600L-8×10	600V	±20%	≤1400V	10KA	10A	≥10	≤1pF

1) At delivery AQL 0.65 leave Ⅱ Military Standard 105 E.
2) In ionized mode
3) Test according to ITU-T Rec.k.12

Specification Status: Draft （mm）



GDT

肖特基二极管 SBR（Schottky Barrier Rectifiers）

肖特基二极管是利用金属半导体接触面上形成的势垒具有整流特性而制成的金属-半导体器件。作为低压，高频整流器或者整流桥，极性保护二极管，适用于紧凑型，小型的系统。典型应用于AC-DC和DC-DC转换器，电池极性保护，多种电压“ORing”和其他小尺寸系统的应用。

A Schottky Barrier Rectifier is a metal-semiconductor device fabricated by utilizing a rectifying property of a barrier formed on a metal semiconductor contact surface. This device is suitable for compact and small size systems. Typical for AC-DC and DC-DC converters, battery-polarity protection, multiple voltage ‘ORING’ and other small size systems.

特点 Features

- 极低正向压降，VF Very low forward voltage-drop, VF
- 因极低正向电压实现高效率 High efficiency due to extremely low forward voltage
- 高连续电流功能，IF High continuous current capability, IF
- 可节省空间的小型和超小型表面贴装封装 Small and ultra small, low profile surface mount package for economic use of space
- 高峰值电流功能，IFSM High peak current capability, IFSM
- 卓越的尺寸/性能比，以及更长的电池使用时间 Excellent size / performance ratio together with extended battery life
- 低功耗和低发热 Low power dissipation and low heat generation
- 结合低反向电流的高速开关 High-speed switching combined wtih low reverse current
- 耐用的设计和较长的产品使用寿命 Robust designs and long product lifetime

应用 Application

- 中小功率整流
  Low and medium power rectification
- 电源管理电路，尤其是DC转DC转换
  Power management circuits, especially DC-to-DC conversion
- 反向极性保护
  Reverse polarity protection
- 低功耗应用
  Low power application
- 用于继电器和电机的电感负载的续流二极管
  Free wheeling diode for inductive loads in motors and relays

Definitions and Terms

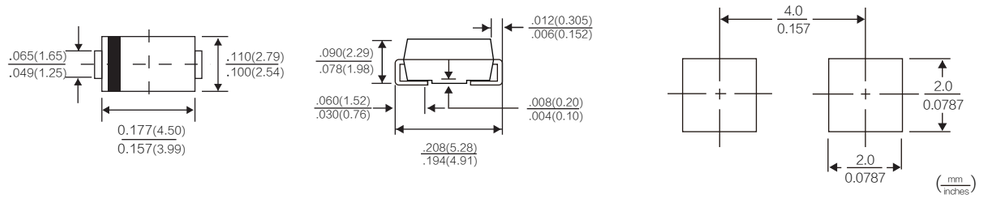
V_{RRM}	Maximum Recurrent Peak Reverse Voltage
V_{RMS}	Maximum RMS Voltage
V_{DC}	Maximum DC Blocking Voltage
$I_{F(AV)}$	Maximum Average Forward Current at TL=75 ℃
I_{FSM}	Peak Forward Surge Current :8.3ms single half sine-wave superimposed on rated load (JEDEC method)
V_F	Maximum Forward Voltage at 1.0A
I_R	Maximum DC Reverse Current at Rated DC Blocking Voltage
$R_{\theta JL}$	Typical Thermal Resistance — Junction-to-Lead
$R_{\theta JA}$	Typical Thermal Resistance — Junction-to-Ambient
T_J ,T_{STR}	Operating Junction and Storage Temperature Range

Electrical Characteristics - SMA（1A）Series

Parameter	V_{RRM}	V_{RRS}	V_{DC}	$I_{F(AV)}$	I_{FSM}	V_F *	I_R (MA)		$R_{\theta JL}$ *	$R_{\theta JA}$	T_J ,T_{STR}
	V	V	V	A	A	V	25℃	100℃	℃/W	℃/W	℃
SS12	20	14	20	1.0	30	0.5	0.2	50	28	88	-55to+125
SS13	30	21	30	1.0	30	0.5	0.2	50	28	88	-55to+125
SS14	40	28	40	1.0	30	0.7	0.05	10	30	88	-55to+125
SS15	50	35	50	1.0	30	0.74	0.05	10	30	88	-65to+125
SS16	60	42	60	1.0	30	0.74	0.05	10	30	88	-65to+125
SS18	80	56	80	1.0	30	0.80	0.05	5	30	88	-65to+125
SS19	90	63	90	1.0	30	0.80	0.05	5	30	88	-65to+125
SS110	100	70	100	1.0	30	0.80	0.05	5	30	88	-65to+125
SS115	150	105	150	1.0	30	0.90	0.02	2	30	88	-65to+125
SS120	200	140	200	1.0	30	0.90	0.02	2	30	88	-65to+125

NOTES:
*.Pulse Test with PW = 300 usec ,1% Duty Cycle
* .Mounted on P.C. Board with 5.0mm2 copper pad areas .

SMA 产品尺寸 (Dimension Unit: mm) Dimensions in inches and (millimeters)



PCB Layout mm/inch

Electrical Characteristics - SMA/SMB (2A) Series

Parameter	V_{RRM} V	V_{RRS} V	V_{DC} V	$I_{F(AV)}$ A	I_{FSM} A	V_F * V	I_R(MA) 25℃	I_R(MA) 100℃	$R_{\theta JL}$ * ℃/W	$R_{\theta JA}$ ℃/W	T_J ,T_{STR} ℃
SS22	20	14	20	2.0	50	0.5	0.2	20	20	75	-55to+125
SS23	30	21	30	2.0	50	0.5	0.2	20	20	75	-55to+125
SS24	40	28	40	2.0	50	0.7	0.05	20	20	75	-55to+150
SS25	50	35	50	2.0	50	0.7	0.05	20	20	75	-65to+150
SS26	60	42	60	2.0	50	0.7	0.05	20	20	75	-65to+175
SS28	80	56	80	2.0	50	0.80	0.05	20	20	75	-65to+175
SS29	90	63	90	2.0	50	0.80	0.05	20	20	75	-65to+175
SS210	100	70	100	2.0	50	0.80	0.05	20	20	75	-65to+175
SS215	150	105	150	2.0	50	0.90	0.05	20	20	75	-65to+175
SS220	200	140	200	2.0	50	0.90	0.05	20	20	75	-65to+175

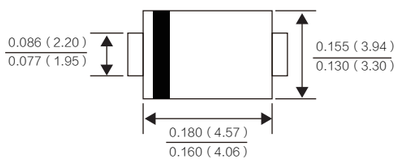
NOTES:
*.Pulse Test with PW = 300 usec ,1% Duty Cycle
* .Mounted on P.C. Board with8.0mm2 copper pad areas .

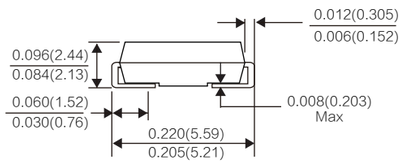
Electrical Characteristics - SMA/SMB (3A) Series

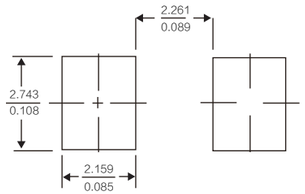
Parameter	V_{RRM} V	V_{RRS} V	V_{DC} V	$I_{F(AV)}$ A	I_{FSM} A	V_F * V	I_R(MA) 25℃	I_R(MA) 100℃	$R_{\theta JL}$ * ℃/W	$R_{\theta JA}$ ℃/W	T_J ,T_{STR} ℃
SS32	20	14	20	3.0	80	0.5	0.2	20	20	75	-55to+125
SS33	30	21	30	3.0	80	0.5	0.2	20	20	75	-55to+125
SS34	40	28	40	3.0	80	0.7	0.05	20	20	75	-55to+150
SS35	50	35	50	3.0	80	0.74	0.05	20	20	75	-65to+175
SS36	60	42	60	3.0	80	0.74	0.05	20	20	75	-65to+175
SS38	80	56	80	3.0	80	0.80	0.05	20	20	75	-65to+175
SS39	90	63	90	3.0	80	0.80	0.05	20	20	75	-65to+175
SS310	100	70	100	3.0	80	0.80	0.05	20	20	75	-65to+175
SS315	150	105	150	3.0	80	0.90	0.05	20	20	75	-65to+175
SS320	200	140	200	3.0	80	0.90	0.05	20	20	75	-65to+175

NOTES:
*.Pulse Test with PW = 300 usec ,1% Duty Cycle
* .Mounted on P.C. Board with8.0mm2 copper pad areas .

SMB 产品尺寸 (Dimension Unit: inch / mm)







PCB Layout mm/inch

Electrical Characteristics - SMC (3A) Series

Parameter	V_{RRM} V	V_{RRS} V	V_{DC} V	$I_{F(AV)}$ A	I_{FSM} A	V_F * V	I_R(MA) 25℃	I_R(MA) 100℃	$R_{\theta JL}$ * ℃/W	$R_{\theta JA}$ ℃/W	T_J ,T_{STR} ℃
SK32	20	14	20	3.0	100	0.5	0.2	20	20	75	-55to+125
SK33	30	21	30	3.0	100	0.5	0.2	20	20	75	-55to+125
SK34	40	28	40	3.0	100	0.7	0.05	20	20	75	-55to+150
SK35	50	35	50	3.0	100	0.74	0.05	20	20	75	-65to+175
SK36	60	42	60	3.0	100	0.74	0.05	20	20	75	-65to+175
SK38	80	56	80	3.0	100	0.80	0.05	20	20	75	-65to+175
SK39	90	63	90	3.0	100	0.80	0.05	20	20	75	-65to+175
SK310	100	70	100	3.0	100	0.80	0.05	20	20	75	-65to+175
SK315	150	105	150	3.0	100	0.90	0.05	20	20	75	-65to+175
SK320	200	140	200	3.0	100	0.90	0.05	20	20	75	-65to+175

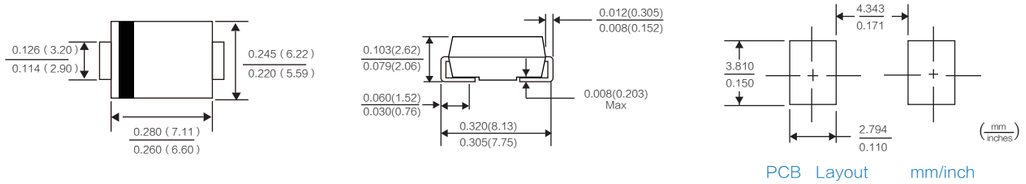
NOTES:
*.Pulse Test with PW = 300 usec ,1% Duty Cycle
* .Mounted on P.C. Board with8.0mm2 copper pad areas .

Electrical Characteristics - SMC (5A) Series

Parameter	V_{RRM} V	V_{RRS} V	V_{DC} V	$I_{F(AV)}$ A	I_{FSM} A	V_F * V	I_R(MA) 25℃	I_R(MA) 100℃	$R_{\theta JL}$ * ℃/W	$R_{\theta JA}$ ℃/W	T_J ,T_{STR} ℃
SK52	20	14	20	5.0	100	0.55	0.2	20	17	55	-55to+125
SK53	30	21	30	5.0	100	0.55	0.2	20	17	55	-55to+125
SK54	40	28	40	5.0	100	0.7	0.05	10	17	55	-55to+150
SK55	50	35	50	5.0	100	0.74	0.05	10	17	55	-65to+175
SK56	60	42	60	5.0	100	0.74	0.05	10	17	55	-65to+175
SK58	80	56	80	5.0	100	0.80	0.05	10	17	55	-65to+175
SK59	90	63	90	5.0	100	0.80	0.05	10	17	55	-65to+175
SK510	100	70	100	5.0	100	0.80	0.05	10	17	55	-65to+175
SK515	150	105	150	5.0	100	0.90	0.05	10	17	55	-65to+175
SK520	200	140	200	5.0	100	0.90	0.05	10	17	55	-65to+175

NOTES:
*.Pulse Test with PW = 300 usec ,1% Duty Cycle
* .Mounted on P.C. Board with8.0mm2 copper pad areas

SMC/Do-214AB 产品尺寸 (Dimension Unit: mm) Dimensions in inches and (millimeters)

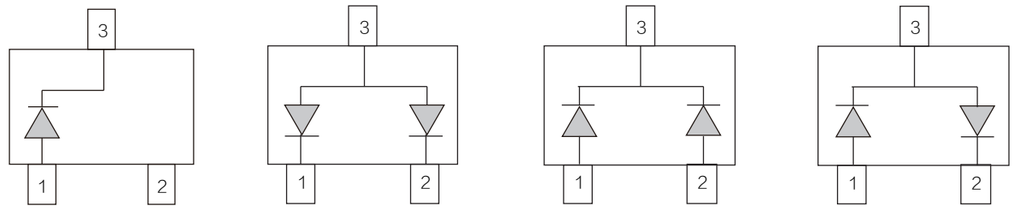


PCB Layout mm/inch

Electrical Characteristics - SOT23 Series

PARAMETER	SYMBOL	BAT54	BAT54A	BAT54C	BAT54S	UNITS
Forward Power Dissipation@T_A=25℃	P_D	225				mW
Repetitive Peak Reverse Voltage	V_{RRM}	30				V
Maximum Average Forward Current at T_L=75 ℃	$I_{F(AV)}$	0.2				A
Repetitive Peak Forward Current (T_P=8.3ms .50% Duty Cycle)	I_{FRM}	300				mA
Peak Forward Surge Current 1.0s (JEDEC method)	I_{FSM}	0.6				A
Maximum Instantaneous Forward Voltage @I_F=1mA , @I_F=100mA	V_F	0.32 0.8				V
Maximum DC Reverse Current at Rated DC Blocking Voltage@V_R=25V	I_R	2.0				uA
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	500				℃/W
Junction Capacitance @ V_R=1V	C_J	10				PF
Operating Junction and Storage Temperature Range	T_J ,T_{STR}	-55 to +125				℃

Circuit



BAT54 BAT54A BAT54C BAT54S

Rating & Characteristic Curves

Figure 1- Forward Current Derating Curve

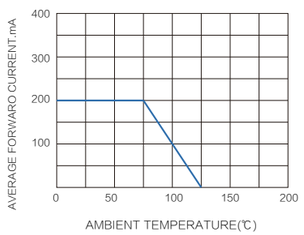


Figure 2- Typical Junction capacitance

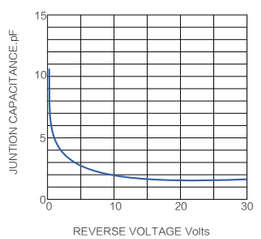


Figure 3- Typical Reverse Characteristics

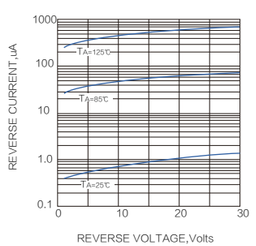
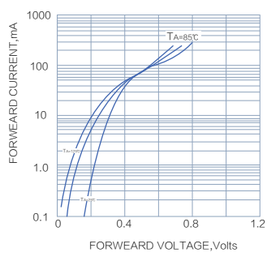


Figure 4 - Instantaneous Forward Characteristics



SBR

压敏电阻 MOV（Metal Oxide Varistors）

压敏电阻的本体是由氧化锌颗粒组成的矩阵结构，颗粒之间的晶界类似双向PN结的电气特性，当低电压时，这些晶界处于高阻抗状态，当电压高时，又会处于击穿状态，是一种非线性器件。

The body of the varistor is a matrix structure composed of oxide particles. The grain boundary between the particles is similar to the electrical features of the bidirectional PN junction. When the voltage is low, these grain boundaries are in a high impedance state, when the voltage is high, they turn into the breakdown state. MOV is a nonlinear device.

特点 Feature

- 高浪涌吸收能力 high surge absorption capability
- 电压范围18V到1800V Voltage range from 18V to 1800V
- 耐电流可达70KA Surge current up to 70kA

应用 Application

- 消费电子和工业电子的浪涌抑制，例如LED照明，电表，开关电源等。
  Suppression of inburst transient in consumer electronic and industrial electronic .Such as LED Lighting , Energy Meter , Switch , Power strip etc .
- 通信和网络设备的浪涌抑制
  Suppression of inburst transient in communication and cable network equipment .
- 一些电子电路内部产生的浪涌抑制
  Suppression of internally generated spikes in electronics circuits .
- 照相器材等
  Photographic Apparatus and so on（which used in voltage limiting switching）.

贴片型的压敏便于SMT组装并有利于节省空间

Surface mountable MOV(Metal Oxide Varistors) devices facilitate customs in SMT assembly process and resolve the PCB space limitation issue

特点 Feature

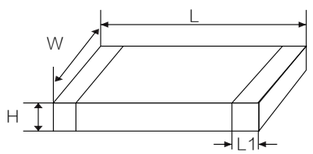
- 小尺寸 Small size and SMD capability
- 高瞬变电流抑制能力 High transient current capability
- 低电压 Low voltage available
- 优秀的夹断能力 Exce clamping performance
- 高响应速度 Fast response time
- 符合ROHS and Halogen-Free Comply with ROHS and Halogen-Free

一般特性 Genral characteristics

- 操作温度范围：-55℃to+85℃ Operating ambient temprature range: -55℃to+85℃
- 储存温度范围：-55℃to+85℃ Storage temprature range: -55℃to+85℃

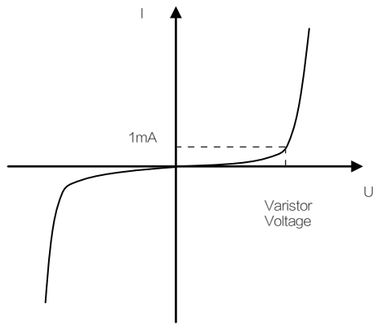
Part Number	Working Voltage		Breakdown Voltage		peak current	Clamping Voltage	
	AC	DC	Ip200A		8/20uS	8/20uS	
	VRMS	VDC	VB		IPP(Max	VC	A
MVR0805-2R0	1.40	2.00	3.3	2.6~4.0	80A	9	1
MVR0805-3R3	2.40	3.30	5.0	4.0~6.0	80A	12	1
MVR0805-5R5	4.00	5.50	8.0	6.6~9.9	80A	14	1
MVR0805-9R0	7.00	9.00	12.0	10~15.5	80A	24	1
MVR0805-140	11.0	14.0	18.0	15~20.5	80A	30	1
MVR0805-160	12.0	16.0	21.0	17~24	80A	35	1
MVR0805-180	14.0	18.0	24.0	22~27	80A	38	1
MVR0805-220	17.0	22.0	27.0	24~30	80A	42	1
MVR0805-240	19.0	24.0	30.0	27~33	80A	47	1
MVR0805-260	20.0	26.0	33.0	29~36	80A	54	1
MVR0805-270	21.0	27.0	37.0	30~40.5	80A	60	1
MVR0805-300	24.0	30.0	39.0	35~42.0	80A	65	1
MVR0805-360	28.0	36.0	47.0	42~52.5	80A	77	1

Part Number	Working Voltage		Breakdown Voltage		peak current	Clamping Voltage	
	AC	DC	Ip200A		8/20uS	8/20uS	
	VRMS	VDC	VB		IPP(Max	VC	A
MVR1206-2R0	1.40	2.00	3.3	2.6~4.0	80A	9	1
MVR1206-3R3	2.40	3.30	5.0	4.0~6.0	80A	12	1
MVR1206-5R5	4.00	5.50	8.0	6.6~9.9	80A	14	1
MVR1206-9R0	7.00	9.00	12.0	10~15.5	80A	24	1
MVR1206-140	11.0	14.0	18.0	15~20.5	80A	30	1
MVR1206-160	12.0	16.0	21.0	17~24	80A	35	1
MVR1206-180	14.0	18.0	24.0	22~27	80A	38	1
MVR1206-220	17.0	22.0	27.0	24~30	80A	42	1
MVR1206-240	19.0	24.0	30.0	27~33	80A	47	1
MVR1206-260	20.0	26.0	33.0	29~36	80A	54	1
MVR1206-270	21.0	27.0	37.0	30~40.5	80A	60	1
MVR1206-300	24.0	30.0	39.0	35~42.0	80A	65	1
MVR1206-360	28.0	36.0	47.0	42~52.5	80A	77	1
MVR1206-420	30.0	42.0	53.0	47~58.5	80A	85	1
MVR1206-450	35.0	45.0	56.0	51~62	80A	90	1
MVR1206-470	36.0	47.0	60.0	53~66	80A	98	1
MVR1206-560	40.0	56.0	68.0	61~75	80A	110	1
MVR1206-600	45.0	60.0	76.0	68~84	80A	120	1
MVR1206-650	50.0	65.0	82.0	74~92	80A	135	1
MVR1206-680	52.0	68.0	90.0	80~100	80A	150	1

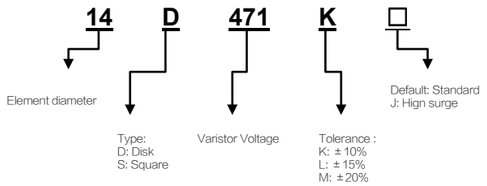


Model	0402 (1005)	0603 (1608)	0805 (2012)	1206 (3216)	1210 (3225)	1812 (4532)	2220 (5650)	2225(5763)	3220(8050)
L	1.00±0.15	1.60±0.20	2.00±0.20	3.20±0.30	3.20±0.30	4.50±0.35	5.60±0.40	5.70±0.40	8.00±0.40
W	0.50±0.15	0.80±0.20	1.20±0.20	1.60±0.20	2.50±0.30	3.20±0.30	5.00±0.40	6.30±0.40	5.00±0.40
H	0.70max	0.90max	1.30max	1.60max	2.00max	2.40max	3.50max	3.50max	3.50max

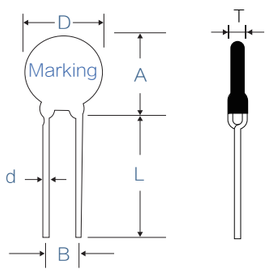
V-Icharacteristics



Part Numbering System



Product Dimension



Spec	D	T	L	B	d
	MAX	MAX	Min	±1	±0.1
5D	7.5	6.0	25.0	5.0	0.6
7D	9.0	6.0	25.0	5.0	0.6
10D	14.0	8.0	25.0	7.5	0.8
14D	17.0	12.0	25.0	7.0	0.8
20D	25.0	12.0	25.0	10.0	1.0
25D	30.0	12,0	25.0	12.5	1.0
32D	30.0	12.0	25.0	25.0	1.0

5D Series varistor Specification

Model	Varistor Voltage	Max Allowable Voltage		Clamping Voltage	Max. peak current 8/20μs times		Max. Energy (Joule)		cap .Ref
	0.1mA	AC	DC	V 5A	1t	2t	10/1000	2ms	@1kz
	V	V	V	V	A	A	μs		pf
5D180L	18(16~21)	11	14	40	100	50	0.4	0.3	1.4K
5D220K	22(20~24)	14	18	48	100	50	0.5	0.4	1.15K
5D270K	27(24~30)	17	22	60	100	50	0.6	0.5	930
5D330K	33(30~36)	20	26	73	100	50	0.8	0.6	760
5D390K	39(35~43)	25	31	86	100	50	0.9	0.8	640
5D470K	47(42~52)	30	38	104	100	50	1.1	1.0	530
5D560K	56(50~62)	35	45	123	100	50	1.3	1.0	450
5D680K	68(61~75)	40	56	150	100	50	1.6	1.2	370
5D820K	82(74~90)	50	65	145	400	200	2.5	1.7	300
5D101K	100(90~100)	60	85	175	400	200	3.0	2.0	250
5D121K	120(108~132)	75	100	210	400	200	4.0	2.5	210
5D151K	150(135~165)	95	125	260	400	200	4.8	3.0	165
5D181K	180(162~198)	115	150	320	400	200	5.9	3.6	140
5D201K	200(185~225)	130	170	355	400	200	6.5	4.0	125
5D221K	220(198~242)	140	180	380	400	200	7.0	4.5	110
5D241K	240(216~264)	150	200	415	400	200	8.0	5.0	100
5D271K	270(243~297)	175	225	475	400	200	8.5	6.0	95
5D301K	300(270~330)	195	250	520	400	200	9.0	6.5	85
5D331K	330(297~363)	215	275	570	400	200	9.5	7.0	75
5D361K	360(324~396)	230	300	620	400	200	10.0	7.5	70
5D391K	390(351~429)	250	320	675	400	200	12.0	8.0	65
5D431K	430(387~473)	275	350	745	400	200	13.0	9.0	60
5D471K	470(423~517)	300	385	810	400	200	15.0	10	55
5D511K	510(459~561)	320	410	845	400	200	16.0	11	50
5D561K	560(504~616)	350	455	920	400	200	16.0	11	45
5D621K	620(558~682)	385	505	1025	800	600	24.0	18	75
5D681K	680(612~748)	385	560	1125	800	600	25.0	19	68

7D Series varistor Specification

Model	Varistor Voltage	Max Allowable Voltage		Clamping Voltage	Max. peak current 8/20μs times		Max. Energy (Joule)		cap .Ref
	0.1mA	AC	DC	V 5A	1t	2t	10/1000	2ms	@1kz
	V	V	V	V	A	A	μs		pf
7D180L	18(16~21)	11	14	36	250	125	0.9	0.8	2.8K
7D220K	22(20~24)	14	18	43	250	125	1.1	0.9	2.3K
7D270K	27(24~30)	17	22	53	250	125	1.4	1.0	1.8K
7D330K	33(30~36)	20	26	65	250	125	1.7	1.2	1.5K
7D390K	39(35~43)	25	31	77	250	125	2.1	1.5	1.3K
7D470K	47(42~52)	30	38	93	250	125	2.5	1.8	1.1K
7D560K	56(50~62)	35	45	110	250	125	3.1	2.2	890
7D680K	68(61~75)	40	56	135	250	125	3.6	2.5	740
7D820K	82(74~90)	50	65	135	1200	600	5.5	3.5	600
7D101K	100(90~100)	60	85	165	1200	600	6.5	4.0	500
7D121K	120(108~132)	75	100	200	1200	600	7.8	5.0	420
7D151K	150(135~165)	95	125	250	1200	600	9.7	6.0	330
7D181K	180(162~198)	115	150	300	1200	600	11.7	8.5	280
7D201K	200(185~225)	130	170	340	1200	600	13.0	10	250
7D221K	220(198~242)	140	180	360	1200	600	14.0	10	230
7D241K	240(216~264)	150	200	395	1200	600	15.0	10	210
7D271K	270(243~297)	175	225	455	1200	600	18.0	12	185
7D301K	300(270~330)	195	250	500	1200	600	20.0	13	165
7D331K	330(297~363)	215	275	550	1200	600	23.0	14	150
7D361K	360(324~396)	230	300	595	1200	600	25.0	15	140
7D391K	390(351~429)	250	320	650	1200	600	25.0	17	130
7D431K	430(387~473)	275	350	710	1200	600	28.0	20	115
7D471K	470(423~517)	300	385	775	1200	600	30.0	20	105
7D511K	510(459~561)	320	410	845	1200	600	30.0	20	100
7D561K	560(504~616)	350	455	930	1200	600	30.0	20	90
7D621K	620(558~682)	385	505	1025	1200	600	33.0	22	80
7D681K	680(612~748)	420	560	1120	1200	600	33.0	22	75
7D751K	750(657~825)	460	615	1240	1200	600	53	22	63
7D781K	780(702~858)	485	640	1290	1200	600	55	22	60
7D821K	820(738~902)	510	670	1355	1200	600	60	22	55

10D Series varistor Specification

Model	Varistor Voltage	Max Allowable Voltage		Clamping Voltage	Max. peak current 8/20μs times		Max. Energy (Joule)		cap .Ref
	0.1mA	AC	DC	V 5A	1t	2t	10/1000	2ms	@1kz
	V	V	V	V	A	A	μs		pf
10D180K	18(15~21.6)	11	14	38	500	250	2.3	2.0	7.5K
10D220K	22(20~24)	14	18	43	500	250	2.5	2.0	4.5K
10D270K	27(24~30)	17	22	53	500	250	3.0	2.5	3.7K
10D330K	33(30~36)	20	26	65	500	250	4.0	3.0	3.K
10D390K	39(35~43)	25	31	77	500	250	4.6	3.5	2.4K
10D470K	47(42~52)	30	38	93	500	250	5.5	4.5	2.1K
10D560K	56(50~62)	35	45	110	500	250	7.0	5.5	1.8K
10D680K	68(61~75)	40	56	135	500	250	8.2	6.5	1.5K
10D820K	82(74~90)	50	65	135	2500	1250	12.0	8.0	1.2K
10D101K	100(90~100)	60	85	165	2500	1250	15.0	10.0	1.0K
10D121K	120(108~132)	75	100	200	2500	1250	18.0	12.0	830
10D151K	150(135~165)	95	125	250	2500	1250	22.0	16.0	670
10D181K	180(162~198)	115	150	300	2500	1250	27.0	18.5	560
10D201K	200(185~225)	130	170	340	2500	1250	30.0	20	500
10D221K	220(198~242)	140	180	360	2500	1250	32.0	23	450
10D241K	240(216~264)	150	200	395	2500	1250	35.0	25	420
10D271K	270(243~297)	175	225	455	2500	1250	40.0	30	370
10D301K	300(270~330)	195	250	500	2500	1250	40.0	32	330
10D331K	330(297~363)	215	275	550	2500	1250	43.0	34	300
10D361K	360(324~396)	230	300	595	2500	1250	47.0	35	280
10D391K	390(351~429)	250	320	650	2500	1250	60.0	40	260
10D431K	430(387~473)	275	350	710	2500	1250	65.0	45	230
10D471K	470(423~517)	300	385	775	2500	1250	70.0	45	210
10D511K	510(459~561)	320	410	845	2500	1250	70.0	45	200
10D561K	560(504~616)	350	455	925	2500	1250	70.0	45	180
10D621K	620(558~682)	385	505	1025	2500	1250	70.0	45	160
10D681K	680(612~748)	420	560	1120	2500	1250	70.0	45	150
10D751K	750(657~825)	460	615	1240	3500	2500	105	75	130
10D781K	780(702~858)	485	640	1290	3500	2500	105	75	130
10D821K	820(738~902)	510	670	1355	3500	2500	110	80	130
10D911K	910(819~1001)	550	745	1500	3500	2500	130	90	120
10D951K	951(855~1045)	575	765	1580	3500	2500	135	95	110
10D102K	1.0K(900~1100)	625	825	1650	3500	2500	140	100	100
10D112K	1.1K(990~1210)	680	895	1815	3500	2500	155	110	90
10D182K	1.8K(1620~1980)	1000	1465	2970	3500	2500	247	183	60

14D Series varistor Specification

Model	Varistor Voltage	Max Allowable Voltage		Clamping Voltage	Max. peak current 8/20μs times		Max. Energy (Joule)		cap .Ref
	0.1mA	AC	DC	V 5A	1t	2t	10/1000	2ms	@1kz
	V	V	V	V	A	A	μs		pf
14D180L	18(16~21)	11	14	36	1000	500	4.0	3.5	11.1K
14D220K	22(20~24)	14	18	43	1000	500	5.0	4.0	9.1K
14D270K	27(24~30)	17	22	53	1000	500	6.0	5.0	7.4K
14D330K	33(30~36)	20	26	65	1000	500	7.5	6.0	6.1K
14D390K	39(35~43)	25	31	77	1000	500	8.6	7.0	5.5K
14D470K	47(42~52)	30	38	93	1000	500	10	8.5	4.3K
14D560K	56(50~62)	35	45	110	1000	500	11	10	3.6K
14D680K	68(61~75)	40	56	135	1000	500	14	12	2.9K
14D820K	82(74~90)	50	65	135	4500	2500	22	14	2.4K
14D101K	100(90~100)	60	85	165	4500	2500	28.0	18	2.0K
14D121K	120(108~132)	75	100	200	4500	2500	32.0	20	1.7K
14D151K	150(135~165)	95	125	250	4500	2500	40.0	25	1.3K
14D181K	180(162~198)	115	150	300	4500	2500	50.0	30.	1.1K
14D201K	200(185~225)	130	170	340	4500	2500	57.0	35	1.1K
14D221K	220(198~242)	140	180	360	4500	2500	60.0	40	900
14D241K	240(216~264)	150	200	395	4500	2500	63.0	40	830
14D271K	270(243~297)	175	225	455	4500	2500	70.0	50	740
14D301K	300(270~330)	190	250	500	4500	2500	77.0	52	670
14D331K	330(297~363)	210	275	550	4500	2500	85.0	64	610
14D361K	360(324~396)	230	300	595	4500	2500	93.0	65	560
14D391K	390(351~429)	250	320	650	4500	2500	100.0	70	510
14D431K	430(387~473)	275	350	710	4500	2500	115.0	75	460
14D471K	470(423~517)	300	385	775	4500	2500	125.0	80	430
14D511K	510(459~561)	320	415	845	4500	2500	125.0	80	390
14D561K	560(504~616)	350	460	925	4500	2500	125.0	85	360
14D621K	620(558~682)	385	505	1025	4500	2500	125.0	85	320
14D681K	680(612~748)	420	560	1120	4500	2500	130.0	90	290
14D751K	750(657~825)	460	615	1240	6500	5000	210	150	260
14D781K	780(702~858)	485	640	1290	6500	5000	225	160	230
14D821K	820(738~902)	510	670	1355	6500	5000	235	165	230
14D911K	910(819~1001)	550	745	1500	6500	5000	255	180	200
14D951K	951(855~1045)	575	765	1580	6500	5000	270	190	190
14D102K	1.0K(900~1100)	625	825	1650	6500	5000	280	200	180
14D112K	1.1K(990~1210)	680	895	1815	6500	5000	310	220	150
14D182K	1.8K(1620~1980)	1000	1465	2970	6500	5000	510	360	120

20D Series varistor Specification

Model	Varistor Voltage	Max Allowable Voltage		Clamping Voltage	Max. peak current 8/20μs times		Max. Energy (Joule)		cap .Ref
	0.1mA	AC	DC	V 5A	1t	2t	10/1000	2ms	@1kz
	V	V	V	V	A	A	μs		pf
20D180L	18(16~21)	11	14	36	2000	1000	11.0	10.0	28500
20D220K	22(20~24)	14	18	43	2000	1000	14.0	13	18.5K
20D270K	27(24~30)	17	22	53	2000	1000	18.0	15	13K
20D330K	33(30~36)	20	26	65	2000	1000	23.0	20	11.5K
20D390K	39(35~43)	25	31	77	2000	1000	26.0	24	8.5K
20D470K	47(42~52)	30	38	93	2000	1000	33.0	30	7.4K
20D560K	56(50~62)	35	45	110	2000	1000	41.0	35	6.5K
20D680K	68(61~75)	40	56	135	2000	1000	46.0	40	5.8K
20D820K	82(74~90)	50	65	135	3000	2000	38.0	27	4.9K
20D101K	100(90~100)	60	85	165	10000	7000	45.0	30	4.0K
20D121K	120(108~132)	75	100	200	10000	7000	55.0	40	3.3K
20D151K	150(135~165)	95	125	250	10000	7000	70.0	50	2.7K
20D181K	180(162~198)	115	150	300	10000	7000	85.0	60	2.2K
20D201K	200(185~225)	130	170	340	10000	7000	95.0	70	2.0K
20D221K	220(198~242)	140	180	360	10000	7000	100.0	75	1.8K
20D241K	240(216~264)	150	200	395	10000	7000	108.0	80	1.65K
20D271K	270(243~297)	175	225	455	10000	7000	127.0	90	1.5K
20D301K	300(270~330)	190	250	500	10000	7000	136.0	100	1.3K
20D331K	330(297~363)	210	275	550	10000	7000	150.0	110	1.2K
20D361K	360(324~396)	230	300	595	10000	7000	163.0	120	1.1K
20D391K	390(351~429)	250	320	650	10000	7000	180.0	130	1.0K
20D431K	430(387~473)	275	350	710	10000	7000	190.0	140	930
20D471K	470(423~517)	300	385	775	10000	7000	220.0	150	850
20D511K	510(459~561)	320	415	845	10000	7000	220.0	150	780
20D561K	560(504~616)	350	460	925	10000	7000	220.0	150	970
20D621K	620(558~682)	385	505	1025	10000	7000	220.0	150	950
20D681K	680(612~748)	420	560	1120	10000	7000	230.0	160	900
20D751K	750(657~825)	460	615	1240	10000	7000	420	300	850
20D781K	780(702~858)	485	640	1290	10000	7000	445	315	750
20D821K	820(738~902)	510	670	1355	10000	7000	460	325	700
20D911K	910(819~1001)	550	745	1500	10000	7000	510	360	600
20D951K	951(855~1045)	575	765	1580	10000	7000	535	380	550
20D102K	1.0K(900~1100)	625	825	1650	10000	7000	560	400	500
20D112K	1.1K(990~1210)	680	895	1815	10000	7000	620	440	450
20D122K	1.8K(1080~1320)	750	985	1990	10000	7000	675	580	400
20D152K	1.5K(1350~1650)	850	1185	2310	10000	7000	810	640	350
20D182K	1.8K(1620~1980)	1000	1465	2970	10000	7000	1020	720	220

25D Series varistor Specification

Model	Varistor Voltage	Max Allowable Voltage		Clamping Voltage	Max. peak current 8/20μs times		Max. Energy (Joule)		cap .Ref
	0.1mA	AC	DC	V 5A	1t	2t	10/1000	2ms	@1kz
	V	V	V	V	A	A	μs		pf
25D201K	200(185~225)	130	170	340	20000	15000	170	140	2.4K
25D221K	220(198~242)	140	180	360	20000	15000	180	150	2.2K
25D241K	240(216~264)	150	200	395	20000	15000	190	160	2.0K
25D271K	270(243~297)	175	225	455	20000	15000	200	180	1.7K
25D301K	300(270~330)	190	250	500	20000	15000	230	200	1.6K
25D331K	330(297~363)	210	275	550	20000	15000	250	220	1.5K
25D361K	360(324~396)	230	300	595	20000	15000	280	240	1.4K
25D391K	390(351~429)	250	320	650	20000	15000	315	260	1.2K
25D431K	430(387~473)	275	350	710	20000	15000	340	280	1.1K
25D471K	470(423~517)	300	385	775	20000	15000	360	300	1.05K
25D511K	510(459~561)	320	415	845	20000	15000	430	300	1.0K
25D561K	560(504~616)	350	460	925	20000	15000	440	300	0.95K
25D621K	620(558~682)	385	505	1025	20000	15000	460	300	0.90K
25D681K	680(612~748)	420	560	1120	20000	15000	480	320	0.85K
25D751K	750(657~825)	460	615	1240	20000	15000	500	340	0.80K
25D781K	780(702~858)	485	640	1290	20000	15000	510	350	0.75K
25D821K	820(738~902)	510	670	1355	20000	15000	525	360	0.70K
25D911K	910(819~1001)	550	745	1500	20000	15000	540	390	0.65K
25D951K	951(855~1045)	575	765	1580	20000	15000	560	400	0.62K
25D102K	1.0K(900~1100)	625	825	1650	20000	15000	600	420	0.60K
25D122K	1.2K(1080~1320)	750	980	1980	20000	15000	700	550	0.55K
25D142K	1.4K(1278~1540)	870	1160	2370	20000	15000	900	680	0.52K
25D162K	1.6K(1440~1584)	1000	1200	2700	20000	15000	1025	750	0.50K
25D182K	1.8K(1620~1980)	1200	1450	2970	20000	15000	1150	800	0.45K

32D Series varistor Specification

Model	Varistor Voltage	Max Allowable Voltage		Clamping Voltage	Max. peak current 8/20μs times		Max. Energy (Joule)		cap .Ref
	0.1mA	AC	DC	Ip200A	1t	2t	μs	J	@1kz
	V	V	V	V	A	A			pf
32D201K	200(185~225)	130	170	340	25000	20000	10/1000	250	4.2K
32D221K	220(198~242)	140	180	360	25000	20000	10/1000	270	3.8K
32D241K	240(216~264)	150	200	395	25000	20000	10/1000	290	3.5K
32D271K	270(243~297)	175	225	455	25000	20000	10/1000	300	3.2K
32D301K	300(270~330)	190	250	500	25000	20000	10/1000	330	2.9K
32D331K	330(297~363)	210	275	550	25000	20000	10/1000	360	2.7K
32D361K	360(324~396)	230	300	595	25000	20000	10/1000	380	2.5K
32D391K	390(351~429)	250	320	650	25000	20000	10/1000	400	2.3K
32D431K	430(387~473)	275	350	710	25000	20000	10/1000	430	2.1K
32D471K	470(423~517)	300	385	775	25000	20000	10/1000	460	1.8K
32D511K	510(459~561)	320	415	845	25000	20000	10/1000	510	1.7K
32D561K	560(504~616)	350	460	925	25000	20000	10/1000	540	1.6K
32D621K	620(558~682)	385	505	1025	25000	20000	10/1000	570	1.3K
32D681K	680(612~748)	420	560	1120	25000	20000	10/1000	600	1.2K
32D751K	750(657~825)	460	615	1240	25000	20000	10/1000	620	1.1K
32D781K	780(702~858)	485	640	1290	25000	20000	10/1000	660	1.0K
32D821K	820(738~902)	510	670	1355	25000	20000	10/1000	700	0.96K
32D911K	910(819~1001)	550	745	1500	25000	20000	10/1000	750	0.89K
32D951K	951(855~1045)	575	765	1580	25000	20000	10/1000	780	0.83K
32D102K	1.0K(900~1100)	625	825	1650	25000	20000	10/1000	810	0.83K
32D122K	1.2K(1080~1320)	750	980	1980	25000	20000	10/1000	960	0.76K
32D142K	1.4K(1278~1540)	870	1160	2370	25000	20000	10/1000	1080	0.66K
32D162K	1.6K(1440~1584)	1000	1200	2700	25000	20000	10/1000	1220	0.56K
32D182K	1.8K(1620~1980)	1200	1450	2970	25000	20000	10/1000	1350	0.52K

34S Series varistor Specification

Model	Varistor Voltage	Max Allowable Voltage		Clamping Voltage	Max. peak current 8/20μs times		Max. Energy (Joule)		cap .Ref
	0.1mA	AC	DC	Ip200A	1t	2t	μs	J	@1kz
	V	V	V	V	A	A			pf
34S201K	200(185~225)	130	170	340	40K	30k	10/1000	310	5980
34S221K	220(198~242)	140	180	360	40K	30k	10/1000	330	5520
34S241K	240(216~264)	150	200	395	40K	30k	10/1000	360	5050
34S271K	270(243~297)	175	225	455	40K	30k	10/1000	390	4600
34S301K	300(270~330)	190	250	500	40K	30k	10/1000	410	4230
34S331K	330(297~363)	210	275	550	40K	30k	10/1000	430	3950
34S361K	360(324~396)	230	300	595	40K	30k	10/1000	460	3680
34S391K	390(351~429)	250	320	650	40K	30k	10/1000	490	3300
34S431K	430(387~473)	275	350	710	40K	30k	10/1000	550	2900
34S471K	470(423~517)	300	385	775	40K	30k	10/1000	600	2660
34S511K	510(459~561)	320	415	845	40K	30k	10/1000	640	2500
34S561K	560(504~616)	350	460	925	40K	30k	10/1000	700	2300
34S621K	620(558~682)	385	505	1025	40K	30k	10/1000	800	1840
34S681K	680(612~748)	420	560	1120	40K	30k	10/1000	910	1750
34S751K	750(657~825)	460	615	1240	40K	30k	10/1000	920	1650
34S781K	780(702~858)	485	640	1290	40K	30k	10/1000	930	1560
34S821K	820(738~902)	510	670	1355	40K	30k	10/1000	940	1500
34S911K	910(819~1001)	550	745	1500	40K	30k	10/1000	960	1380
34S951K	951(855~1045)	575	765	1580	40K	30k	10/1000	1000	1230
34S102K	1.0K(900~1100)	625	825	1650	40K	30k	10/1000	1050	1190
34S122K	1.2K(1080~1320)	750	980	1980	40K	30k	10/1000	1200	1100
34S142K	1.4K(1278~1540)	870	1160	2370	40K	30k	10/1000	1600	1000
34S162K	1.6K(1440~1584)	1000	1200	2700	40K	30k	10/1000	1830	900
34S182K	1.8K(1620~1980)	1200	1450	2970	40K	30k	10/1000	2050	800

MF72 POWER NTC THERMISTOR

MF72功率型热敏电阻可以抑制敏感设备的浪涌电流。在电源端串接一个NTC热敏电阻可以抑制开机浪涌电流，而当电路正常工作后，NTC的电阻将会降到很低的水平，功耗可以忽略不计，不会影响正常工作的电流。使用MF72系列的NTC是抑制浪涌电流保护敏感设备的高性价的方案。MF72NTC热敏电阻符合CQC UL 和 CUL认证。

The MF72 Power NTC Thermistor suppresses surge current for sensitive electronic devices. Connecting an NTC on the power side can suppress the surge current when start-up, and when the circuit works normally, the resistance of the NTC will drop to a very low level, the power consumption can be ignored, and the normal operating current will not be affected. Using the series of MF72 Power NTC Thermistor is a cost-effective solution for suppressing surge current and protecting sensitive equipment. The MF72 Power NTC Thermistor is certified by CQC, UL and CUL.

应用 Applications

- 开关电源，UPS电源
  Switching power-supply ,switch power ,ups power .
- 各类RT,显示器
  All kinds of RT ,display
- 电子节能灯，电子镇流器和电热器
  Electronic energy saving lamps , electronic ballast and all kinds of electric heater
- 各类灯具
  Bulb and other lighting lamps

特点 Characteristic

- 小尺寸，大能量，很高的浪涌抑制能力
  Small size ,large power ,strong capacity of suppression of inrush current
- 响应速度快
  Fast response time
- 材料常数（B值）大，残余电阻小
  Big material constant (B value) , small residual resistance
- 寿命长，可靠性高
  Long life cycle, high reliability
- 系列完整，应用广泛
  Complete series , wide applications

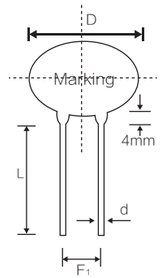


Fig1

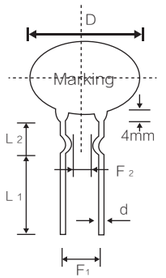


Fig2

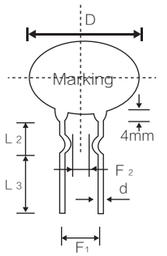


Fig3

Fig4

Part number	D/+2 D/-1	Tmax	d±0.05	F_1±1	F_2±1.5	L min	L_1 min(b)	L_2±2
NTC□D-5	6.5	5	0.6/0.45	5/2.5	3	25	17/5	8
NTC□D-7	8.5	5	0.6	5	3	25	17/5	8
NTC□D-9	10.5	5.5	0.8/0.6	7.5/5	5/3	25	17/5	8
NTC□D-11	12.5	5.5	0.8/0.6	7.5/5	5/3	25	17/5	8
NTC□D-13	14.5	6	0.8	7.5	5	25	17/5	8
NTC□D-15	16.5	6	0.8	10/7.5	5	25	17/5	8
NTC□D-20	21.5	7	1.0	10/7.5	/	25	/	/
NTC□D-25	26.5	8	1.0	10	/	25	/	/

备注 : Zero Power Resistance at 25℃
17/5:17 -long， 5 : short
If no special instructions, used Fig2.

Specification

Part number	Zero Power Resistance at 25℃	Max Steady State Current	Resistance @max current	Thermal Dissipation Constant	Thermal Time Constant	Package
	R25 Ω	A	Ω	MW/℃	S	Type
NTC5D-5	5	1.0	0.353	6	20	Fig1 or Fig2
NTC10D-5	10	0.7	0.771	6	20	Fig1 or Fig2
NTC60D-5	60	0.5	1.878	6	18	Fig1 or Fig2
NTC5D-7	5	2.0	0.283	10	30	Fig1 or Fig2
NTC8D-7	8	1.0	0.539	9	28	Fig1 or Fig2
NTC10D-7	10	1.0	0.616	9	27	Fig1 or Fig2
NTC12D-7	12	1.0	0.816	9	27	Fig1 or Fig2
NTC16D-7	16	0.7	1.003	9	27	Fig1 or Fig2
NTC22D-7	22	0.6	1.108	9	27	Fig1 or Fig2
NTC33D-7	33	0.5	1.485	10	28	Fig1 or Fig2
NTC3D-9	3	4.0	0.120	11	35	Fig1 or Fig2
NTC4D-9	4	3.0	0.190	11	35	Fig1 or Fig2
NTC5D-9	5	3.0	0.210	11	34	Fig1 or Fig2
NTC6D-9	6	2.0	0.315	11	34	Fig1 or Fig2
NTC8D-9	8	2.0	0.400	11	32	Fig1 or Fig2
NTC10D-9	10	2.0	0.458	11	32	Fig1 or Fig2
NTC12D-9	12	1.0	0.652	11	32	Fig1 or Fig2
NTC16D-9	16	1.0	0.802	11	31	Fig1 or Fig2
NTC20D-9	20	1.0	0.864	11	30	Fig1 or Fig2
NTC22D-9	22	1.0	0.950	11	30	Fig1 or Fig2
NTC30D-9	30	1.0	1.022	11	30	Fig1 or Fig2
NTC33D-9	33	1.0	1.124	11	30	Fig1 or Fig2
NTC50D-9	50	1.0	1.252	11	30	Fig1 or Fig2
NTC60D-9	60	0.8	1.502	11	30	Fig1 or Fig2
NTC2.5D-11	2.5	5.0	0.095	13	43	Fig1 or Fig2
NTC3D-11	3	5.0	0.100	13	43	Fig1 or Fig2
NTC4D-11	4	4.0	0.150	13	44	Fig1 or Fig2
NTC5D-11	5	4.0	0.156	13	45	Fig1 or Fig2
NTC6D-11	6	3.0	0.240	13	45	Fig1 or Fig2
NTC8D-11	8	3.0	0.255	14	47	Fig1 or Fig2
NTC10D-11	10	3.0	0.275	14	47	Fig1 or Fig2
NTC12D-11	12	2.0	0.462	14	48	Fig1 or Fig2
NTC16D-11	16	2.0	0.470	14	50	Fig1 or Fig2
NTC20D-11	20	2.0	0.512	15	52	Fig1 or Fig2
NTC22D-11	22	2.0	0.563	15	52	Fig1 or Fig2
NTC30D-11	30	1.5	0.667	15	52	Fig1 or Fig2
NTC33D-11	33	1.5	0.734	15	52	Fig1 or Fig2
NTC50D-11	50	1.5	1.021	15	52	Fig1 or Fig2
NTC60D-11	60	1.5	1.215	15	52	Fig1 or Fig2
NTC1.5D-13	1.5	7.0	0.073	13	60	Fig1 or Fig2
NTC2.5D-13	2.5	6.0	0.088	13	60	Fig1 or Fig2

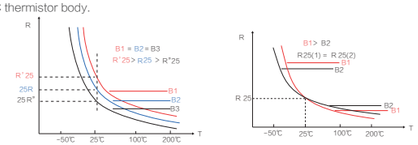
Specification

Part number	Zero Power Resistance at 25℃	Max Steady State Current	Resistance @max current	Thermal Dissipation Constant	Thermal Time Constant	Package
	R25 Ω	A	Ω	MW/℃	S	Type
NTC3D-13	3	6.0	0.092	14	60	Fig1 or Fig2
NTC4D-13	4	5.0	0.120	15	67	Fig1 or Fig2
NTC5D-13	5	5.0	0.125	15	68	Fig1 or Fig2
NTC6D-13	6	4.0	0.170	15	65	Fig1 or Fig2
NTC7D-13	7	4.0	0.188	15	65	Fig1 or Fig2
NTC8D-13	8	4.0	0.194	15	60	Fig1 or Fig2
NTC10D-13	10	4.0	0.206	15	65	Fig1 or Fig2
NTC12D-13	12	3.0	0.316	16	65	Fig1 or Fig2
NTC15D-13	15	3.0	0.335	16	60	Fig1 or Fig2
NTC16D-13	16	3.0	0.338	16	60	Fig1 or Fig2
NTC20D-13	20	3.0	0.372	16	65	Fig1 or Fig2
NTC30D-13	30	2.5	0.517	16	65	Fig1 or Fig2
NTC47D-13	47	2.0	0.810	17	65	Fig1 or Fig2
NTC1.5D-15	1.5	8.0	0.052	19	69	Fig1 or Fig2
NTC3D-15	3	7.0	0.075	18	76	Fig1 or Fig2
NTC5D-15	5	6.0	0.112	20	76	Fig1 or Fig2
NTC6D-15	6	5.0	0.155	20	80	Fig1 or Fig2
NTC7D-15	7	5.0	0.173	20	80	Fig1 or Fig2
NTC8D-15	8	5.0	0.178	20	80	Fig1 or Fig2
NTC10D-15	10	5.0	0.180	20	75	Fig1 or Fig2
NTC12D-15	12	4.0	0.250	20	75	Fig1 or Fig2
NTC15D-15	15	4.0	0.268	21	85	Fig1 or Fig2
NTC16D-15	16	4.0	0.276	21	70	Fig1 or Fig2
NTC20D-15	20	4.0	0.288	17	86	Fig1 or Fig2
NTC30D-15	30	3.5	0.438	18	75	Fig1 or Fig2
NTC47D-15	47	3.0	0.680	21	86	Fig1 or Fig2
NTC0.7D-20	0.7	12.0	0.018	25	89	Fig1 or Fig2
NTC3D-20	3	8.0	0.055	24	88	Fig1 or Fig2
NTC5D-20	5	7.0	0.087	23	87	Fig1 or Fig2
NTC6D-20	6	6.0	0.113	25	103	Fig1 or Fig2
NTC8D-20	8	6.0	0.142	25	105	Fig1 or Fig2
NTC10D-20	10	6.0	0.162	24	102	Fig1 or Fig2
NTC12D-20	12	5.0	0.195	24	100	Fig1 or Fig2
NTC16D-20	16	5.0	0.212	25	100	Fig1 or Fig2
NTC0.7D-25	0.7	13.0	0.014	30	120	Fig1 or Fig2
NTC1.5D-25	1.5	10.0	0.027	30	121	Fig1 or Fig2
NTC3D-25	3.0	9.0	0.044	32	124	Fig1 or Fig2
NTC5D-25	5.0	8.0	0.070	32	151	Fig1 or Fig2
NTC8D-25	8	7.0	0.114	33	125	Fig1 or Fig2
NTC10D-25	10	7.0	0.13	32	125	Fig1 or Fig2
NTC12D-25	12	6.0	0.156	32	126	Fig1 or Fig2

NTC Thermistor General Performance

Item	Specification	Test equipment	Result
Resistance value at Rated Zero-power R25（Ω）	The design resistance of the thermistor usually refers to the resistance value got at Zero-power at 25℃, which is usually indicated on the thermistor.	Low Constant Temperature Water Baths、ND－33B NTC Thermistor resistance test equipment	Allowable range of the Rated zero-power: K：±10%; L：±15%。 M：±20%
The zero-power resistance	The zero-power resistance of a thermistor (RT) at a specified temperature (T) is the DC resistance measured when the power dissipation is negligible. The relation of the resistance and the changing of the temperature within the specified rang may be expressed as: $R_T = R_{T0} \exp[b(T_0-T)/TT_0]$ (1) R_T：is the resistance at an absolute temperature (T) expressed in Kelvins. R_{T0}：is the resistance at a specified reference temperature, T_0, that is also expressed in Kelvins. T：expressed in Kelvins。 b：is the “beta” or “material constant”. The expression is in operation within the limited range of T_0 or R_{T0}. For the Thermistor manufacturers will provide “beta” information for each of the material systems they offer.	Low Constant Temperature Water Baths、ND－33B NTC Thermistor resistance test equipment	Allowable range of the Rated zero-power: K：±10%; L：±15%。
B: is the “beta” or “material constant” expressed in kelvins	The terms equation (1) can be rearranged to solve for beta (b): $b = \frac{TT_0}{T_0-T} \ln\left[\frac{R_T}{R_{T0}}\right]$ The range of the beta of common specification is from 2000K to 6000K。	Low Constant Temperature Water Baths、ND－33B NTC Thermistor resistance test equipment	Regulate the value of beta can’t exceed ±10%

1.2 NTC Thermistor General Performance

Item	Specification	Test equipment	Result
Temperature coefficient of resistance（αT）	The temperature coefficient of resistance or “alpha” (a) of an NTC thermistor is defined as : $a = \left[\frac{1}{R_T}\right]\frac{dR_T}{dT} - \frac{b}{T^2}$	Low Constant Temperature Water Baths、ND－33B NTC Thermistor resistance test equipment	
Dissipation factor（δ）	The dissipation factor（δ）is defined as the ratio of the change in power dissipation and the resultant change in the thermistor’s body temperature. $\delta = \frac{\Delta P}{\Delta T}$ δ： Dissipation factor of the NTC thermistor, it is expressed in mW/ K. ΔP： Dissipative power of the NTC thermistor, it expressed in mW. ΔT： The resultant change in the thermistor’s body temperature at a specify Δ P.	Dissipation factor test equipment	Testing range:85℃±0.1℃
Thermal time constant（τ）	The thermal time constant refers to the necessary for an unloaded thermistor to vary its temperature by 63.2% of the difference between its mean temperature and the ambient temperature. $t = \frac{C}{\delta}$	Thermal time constant test equipment	Thermal time constant of the NTC Thermistor is measured between the 47.1℃±0。1℃ and 85℃±0。1℃.
B: is the “beta” or “material constant” expressed in kelvins	The relation between the Zero-power resistance and the temperature of the NTC thermistor body.  	Low Constant Temperature Water Baths、ND－33B NTC Thermistor resistance test equipment	

MF52 Pearl-Shape Temp Measurement NTC Thermistor

应用 Applications

- 空调设备 Air-Conditioner
- 暖气设备 Heating Apparatus
- 汽车电子 Automotive electronic
- 电子体温计 Electric Thermometer
- 液位传感器 Liquid level sensor
- 电子台历 Electric table-board
- 手机电池 Battery of mobile phone

特点 Characteristic

- 测试精度高 High testing precision
- 体积小,反应速度快 Small size，Fast Response
- 能长时间稳定工作 Steady Operating For Long time
- 互换性，一致性好 Good interchangeability and consistency
- 规模化生产，性价比高 Scale production, highly cost effective

产品标识说明 Specification

MF52 A 103 G 3380 E

E	B值允许偏差代号（根据需要标注） E：±0.5%，F：±1%	The allowable tolerance of (label by requirement) E：±0.5%，F：±1%
3380	B值：为3380K	B value; namely 3380K
G	阻值允许偏差代号：F：±1%，G：±2% H：±3%，J：±5%，K：±10%	Resistance Tolerance Code: Namely F;±1%，G;±2% H;±3%，J;±5%，K;±10%
103	标称电阻值：103为10KΩ	Rated Resistance:103 namely 10KΩ
A	不同外形结构和尺寸代号: A型引线为镀锡铜线或者镀锡铜包钢线	Different Configuration and Code: Model A is Cu or Cp wire
MF52	型号：珠状精密型型NTC热敏电阻器	Type: Temp-measurement chip in glass NTC thermistor

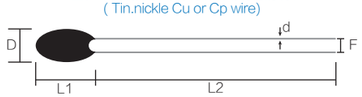
NTC

主要技术参数 Main Techno-Parameter

Part No.	Rated Resistance R25 (KΩ)	B Value(25/50℃) (K)	Rated Power (mW)	Dissi.Coef. (mW/℃)	Thermal time Constant(S)	Operating Temp.(℃)
MF52□□□3100	0.1～20	3100	≤50	≥2.0 静止空气中 In still air	≤12 静止空气中 In still air	-40～+125℃
MF52□□□3270	0.2～20	3270				
MF52□□□3380	0.5～50	3380				
MF52□□□3470	0.5～50	3470				
MF52□□□3600	1～100	3600				
MF52□□□3950	5～100	3950				
MF52□□□4000	5～100	4000				
MF52□□□4050	5～200	4050				
MF52□□□4150	10～250	4150				
MF52□□□4300	20～1000	4300				
MF52□□□4500	20～1000	4500				

外形结构和尺寸 Dimensions(mm)

A型：（引线为镀锡铜线或镀锡铜包钢线）
（Tin.nickle Cu or Cp wire）



Code	Dmax	L1max	L2min	d ±0.05	F ±0.5
A1	2.5	4.0	25	0.3	1.7
A2	3	4.5	25	0.45	2.2

B型：（引线为锡包线）
(Enamelled cu wire)

Code	Dmax	L1max	L2min	L3 ±1	d ±0.05
B1	2	3.5	用户定制	3	0.2
B2	3	4	用户定制	3	0.3

C型：（引线为高温氟塑线）
(High temp fluorin-plastic wire)

Code	Dmax	L1max	L2min	L3 ±1	d ±0.05
C1	3	7.5	用户定制	5	30#
C2	4	7.5	用户定制	5	28#

D型：（引线为PVC导线）
(PVC Wire)

Code	Dmax	L1max	L2min	L3 ±1	d ±0.05
D1	3	7.5	用户定制	5	30#
D2	4	7.5	用户定制	5	28#

MF58 Glass shell Temp Measurement NTC Thermistor Series

应用 Applications

- 家用电器（如空调机，微波炉，电磁炉，多士炉，电风扇，电取暖炉等）的温度控制与温度检测
  Temperature control and examination of household electrical appliance (such as air-conditioner, microwave oven, induction cooker, toaster fanner, electric heater and so on)
- 办公自动化设备（如复印机，打印机等）的温度检测或温度补偿
  Temperature examination and compensation of the OA equipment (such as copycat, printer and so on)
- 手机电池，电池组
  Battery of mobile telephone, battery pile
- 仪表线圈，集成电路，石英晶体振荡器和热电偶的温度补偿
  Temperature compensation of loops of instrument, integrate circuit, quartz crystal oscillator and thermocouple.

特点 Characteristic

- 稳定性好，可靠性高 Good stability and security
- 阻值范围宽，精度高 Broad range of resistance
- 可在高温和高湿等恶劣环境下使用
  Capability of operating in the bad environment of high temperature and high humidity because of glass encapsulation framework.
- 体积小，重量轻，结构坚固，便于自动化安装
  Small size, light weight, strong frame, easy automatic installation (on the printed-circuit board)
- 热感应快，灵敏度高 Fast response to the temperature, high sensitivity.

主要技术参数 Main techno-parameter

额定零功率电阻值范围（R25）	R25允许偏差	B值范围（B25/50℃）	B值允许偏差（根据需要标注）	耗散系数	热时间常数	工作温度范围	额定功率
0.1～3780KΩ	±1%，±2% ±3%，±5% ±10%	3100～4500K	±0.5%，±1%	≥2mW/℃ （在静止空气中）	≤20S （在静止空气中）	-55℃～+250℃	≤50mW

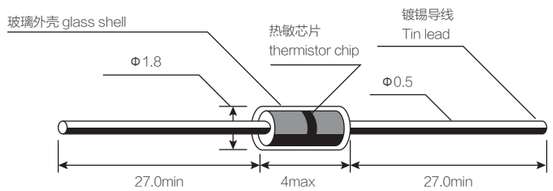
The range of resistance under the rated zero power(R25)	The allowable tolerance of R25	The range of B value	The allowable tolerance of (label by requirement)B value	Dissipation factor	Thermal time constant	The range of operating temperature	Rated power
0.1～3780KΩ	±1%，±2% ±3%，±5% ±10%	3100～4500K	±0.5%，±1%	≥2mW/℃ (in still air)	≤20S (in still air)	-55℃～+250℃	≤50mW

产品标识说明 Specification

MF58 502 F 3650 E

B值允许偏差代号（根据需要标注） E：±0.5%，F：±1%	The allowable tolerance of (label by requirement) E：±0.5%，F：±1%
B值：为3650K	B value; namely 3650K
阻值允许偏差代号：F：±1%，G：±2% H：±3%，J：±5%，K：±10%	Resistance Tolerance Code: Namely F;±1%，G;±2% H;±3%，J;±5%，K;±10%
标称电阻值：502为5KΩ	Rated Resistance: 502 namely 5KΩ
型号	Type

外形结构和尺寸 Dimensions(mm)



整流二极管（Rectifier Diode）

整流二极管是利用PN结的单向导电特性，把交流电变成脉动直流电的半导体器件。
选用整流二极管时，主要应考虑其最大整流电流、最大反向工作电流、截止频率及反向恢复时间等参数。

The rectifier diode is a semiconductor device that utilizes the unilateral conductivity of the PN junction to convert the alternating current into a pulsating direct current.
When choosing a rectifier diode, the parameters such as maximum rectification current, maximum reverse operating current, cut-off frequency, and reverse recovery time should be considered.

根据芯片工艺不同，反向恢复时间也不同，通常分为四大类：
1、普通整流二极管，反向恢复时间大于 500nS（纳秒）；
2、快恢复整流二极管，反向恢复时间 150-500nS（纳秒）；
3、高效率整流二极管，反向恢复时间 50-100nS（纳秒）；
4、超快速整流二极管，反向恢复时间 15-35nS（纳秒）

The reverse recovery time of rectifier diode could be divided into four categories due to different chip technologies:
1. The reverse recovery time of standard rectifier diode: > 500nS (nanoseconds);
2. The reverse recovery time of fast recovery rectifier diode: 150-500nS (nanoseconds);
3. The reverse recovery time of high efficiency rectifier diode: 50-100nS (nanoseconds);
4. The reverse recovery time of super fast recovery rectifier diode: 15-35nS (nanoseconds).

普通整流二极管（Standard Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R	
		A	V	A	V	I_F(A)	μA	V_R(V)
1N4001W	SOD-123FL	1	50	30	1.1	1	5	50
1N4002W	SOD-123FL	1	100	30	1.1	1	5	100
1N4003W	SOD-123FL	1	200	30	1.1	1	5	200
1N4004W	SOD-123FL	1	400	30	1.1	1	5	400
1N4005W	SOD-123FL	1	600	30	1.1	1	5	600
1N4006W	SOD-123FL	1	800	30	1.1	1	5	800
1N4007W	SOD-123FL	1	1000	30	1.1	1	5	1000
S1AF	SMAF	1	50	30	1.1	1	5	50
S1BF	SMAF	1	100	30	1.1	1	5	100
S1DF	SMAF	1	200	30	1.1	1	5	200
S1GF	SMAF	1	400	30	1.1	1	5	400
S1JF	SMAF	1	600	30	1.1	1	5	600
S1KF	SMAF	1	800	30	1.1	1	5	800
S1MF	SMAF	1	1000	30	1.1	1	5	1000
S2AF	SMAF	2	50	50	1.1	2	5	50
S2BF	SMAF	2	100	50	1.1	2	5	100
S2DF	SMAF	2	200	50	1.1	2	5	200
S2GF	SMAF	2	400	50	1.1	2	5	400
S2JF	SMAF	2	600	50	1.1	2	5	600

普通整流二极管（Standard Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R	
		A	V	A	V	I_F(A)	μA	V_R(V)
S2KF	SMAF	2	800	50	1.1	2	5	800
S2MF	SMAF	2	1000	50	1.1	2	5	1000
S3AF	SMAF	3	50	80	1.1	3	5	50
S3BF	SMAF	3	100	80	1.1	3	5	100
S3DF	SMAF	3	200	80	1.1	3	5	200
S3GF	SMAF	3	400	80	1.1	3	5	400
S3JF	SMAF	3	600	80	1.1	3	5	600
S3KF	SMAF	3	800	80	1.1	3	5	800
S3MF	SMAF	3	1000	80	1.1	3	5	1000
S2ABF	SMBF	2	50	50	1.1	2	5	50
S2BBF	SMBF	2	100	50	1.1	2	5	100
S2DBF	SMBF	2	200	50	1.1	2	5	200
S2GBF	SMBF	2	400	50	1.1	2	5	400
S2JBF	SMBF	2	600	50	1.1	2	5	600
S2KBF	SMBF	2	800	50	1.1	2	5	800
S2MBF	SMBF	2	1000	50	1.1	2	5	1000
S3ABF	SMBF	3	50	80	1.1	3	5	50
S3BBF	SMBF	3	100	80	1.1	3	5	100
S3DBF	SMBF	3	200	80	1.1	3	5	200
S3GBF	SMBF	3	400	80	1.1	3	5	400
S3JBF	SMBF	3	600	80	1.1	3	5	600
S3KBF	SMBF	3	800	80	1.1	3	5	800
S3MBF	SMBF	3	1000	80	1.1	3	5	1000
S5ABF	SMBF	5	50	100	1.1	5	5	50
S5BBF	SMBF	5	100	100	1.1	5	5	100
S5DBF	SMBF	5	200	100	1.1	5	5	200
S5GBF	SMBF	5	400	100	1.1	5	5	400
S5JBF	SMBF	5	600	100	1.1	5	5	600
S5KBF	SMBF	5	800	100	1.1	5	5	800
S5MBF	SMBF	5	1000	100	1.1	5	5	1000
S1A	SMA	1	50	30	1.1	1	5	50
S1B	SMA	1	100	30	1.1	1	5	100
S1D	SMA	1	200	30	1.1	1	5	200
S1G	SMA	1	400	30	1.1	1	5	400
S1J	SMA	1	600	30	1.1	1	5	600
S1K	SMA	1	800	30	1.1	1	5	800
S1M	SMA	1	1000	30	1.1	1	5	1000
S2A	SMA	2	50	50	1.1	2	5	50
S2B	SMA	2	100	50	1.1	2	5	100
S2D	SMA	2	200	50	1.1	2	5	200
S2G	SMA	2	400	50	1.1	2	5	400
S2J	SMA	2	600	50	1.1	2	5	600
S2K	SMA	2	800	50	1.1	2	5	800
S2M	SMA	2	1000	50	1.1	2	5	1000
S2AB	SMB	2	50	50	1.1	2	5	50
S2BB	SMB	2	100	50	1.1	2	5	100
S2DB	SMB	2	200	50	1.1	2	5	200
S2GB	SMB	2	400	50	1.1	2	5	400

普通整流二极管（Standard Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R	
		A	V	A	V	I_F(A)	μA	V_R(V)
S2JB	SMB	2	600	50	1.1	2	5	600
S2KB	SMB	2	800	50	1.1	2	5	800
S2MB	SMB	2	1000	50	1.1	2	5	1000
S3AB	SMB	3	50	80	1.1	3	5	50
S3BB	SMB	3	100	80	1.1	3	5	100
S3DB	SMB	3	200	80	1.1	3	5	200
S3GB	SMB	3	400	80	1.1	3	5	400
S3JB	SMB	3	600	80	1.1	3	5	600
S3KB	SMB	3	800	80	1.1	3	5	800
S3MB	SMB	3	1000	80	1.1	3	5	1000
S3AC	SMC	3	50	80	1.1	3	5	50
S3BC	SMC	3	100	80	1.1	3	5	100
S3DC	SMC	3	200	80	1.1	3	5	200
S3GC	SMC	3	400	80	1.1	3	5	400
S3JC	SMC	3	600	80	1.1	3	5	600
S3KC	SMC	3	800	80	1.1	3	5	800
S3MC	SMC	3	1000	80	1.1	3	5	1000
S5AC	SMC	5	50	100	1.1	5	5	50
S5BC	SMC	5	100	100	1.1	5	5	100
S5DC	SMC	5	200	100	1.1	5	5	200
S5GC	SMC	5	400	100	1.1	5	5	400
S5JC	SMC	5	600	100	1.1	5	5	600
S5KC	SMC	5	800	100	1.1	5	5	800
S5MC	SMC	5	1000	100	1.1	5	5	1000

快恢复二极管（Fast Recovery Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R		T_{RR}
		A	V	A	V	I_F(A)	μA	V_R(V)	ns
FR101W	SOD-123FL	1	50	30	1.3	1	5	50	150
FR102W	SOD-123FL	1	100	30	1.3	1	5	100	150
FR103W	SOD-123FL	1	200	30	1.3	1	5	200	150
FR104W	SOD-123FL	1	400	30	1.3	1	5	400	150
FR105W	SOD-123FL	1	600	30	1.3	1	5	600	250
FR106W	SOD-123FL	1	800	30	1.3	1	5	800	500
FR107W	SOD-123FL	1	1000	30	1.3	1	5	1000	500
RS1AF	SMAF	1	50	30	1.3	1	5	50	150
RS1BF	SMAF	1	100	30	1.3	1	5	100	150
RS1DF	SMAF	1	200	30	1.3	1	5	200	150
RS1GF	SMAF	1	400	30	1.3	1	5	400	150
RS1JF	SMAF	1	600	30	1.3	1	5	600	250
RS1KF	SMAF	1	800	30	1.3	1	5	800	500
RS1MF	SMAF	1	1000	30	1.3	1	5	1000	500

快恢复二极管（Fast Recovery Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R		I_{FSM}
		A	V	A	V	I_F(A)	μA	V_R(V)	A
RS2AF	SMAF	2	50	50	1.3	2	5	50	150
RS2BF	SMAF	2	100	50	1.3	2	5	100	150
RS2DF	SMAF	2	200	50	1.3	2	5	200	150
RS2GF	SMAF	2	400	50	1.3	2	5	400	150
RS2JF	SMAF	2	600	50	1.3	2	5	600	250
RS2KF	SMAF	2	800	50	1.3	2	5	800	500
RS2MF	SMAF	2	1000	50	1.3	2	5	1000	500
RS3AF	SMAF	3	50	80	1.3	3	5	50	150
RS3BF	SMAF	3	100	80	1.3	3	5	100	150
RS3DF	SMAF	3	200	80	1.3	3	5	200	150
RS3GF	SMAF	3	400	80	1.3	3	5	400	150
RS3JF	SMAF	3	600	80	1.3	3	5	600	250
RS3KF	SMAF	3	800	80	1.3	3	5	800	500
RS3MF	SMAF	3	1000	80	1.3	3	5	1000	500
RS2ABF	SMBF	2	50	50	1.3	2	5	50	150
RS2BBF	SMBF	2	100	50	1.3	2	5	100	150
RS2DBF	SMBF	2	200	50	1.3	2	5	200	150
RS2GBF	SMBF	2	400	50	1.3	2	5	400	150
RS2JBF	SMBF	2	600	50	1.3	2	5	600	250
RS2KBF	SMBF	2	800	50	1.3	2	5	800	500
RS2MBF	SMBF	2	1000	50	1.3	2	5	1000	500
RS3ABF	SMBF	3	50	80	1.3	3	5	50	150
RS3BBF	SMBF	3	100	80	1.3	3	5	100	150
RS3DBF	SMBF	3	200	80	1.3	3	5	200	150
RS3GBF	SMBF	3	400	80	1.3	3	5	400	150
RS3JBF	SMBF	3	600	80	1.3	3	5	600	250
RS3KBF	SMBF	3	800	80	1.3	3	5	800	500
RS3MBF	SMBF	3	1000	80	1.3	3	5	1000	500
RS5ABF	SMBF	5	50	100	1.3	5	5	50	150
RS5BBF	SMBF	5	100	100	1.3	5	5	100	150
RS5DBF	SMBF	5	200	100	1.3	5	5	200	150
RS5GBF	SMBF	5	400	100	1.3	5	5	400	150
RS5JBF	SMBF	5	600	100	1.3	5	5	600	250
RS5KBF	SMBF	5	800	100	1.3	5	5	800	500
RS5MBF	SMBF	5	1000	100	1.3	5	5	1000	500
RS1A	SMA	1	50	30	1.3	1	5	50	150
RS1B	SMA	1	100	30	1.3	1	5	100	150
RS1D	SMA	1	200	30	1.3	1	5	200	150
RS1G	SMA	1	400	30	1.3	1	5	400	150
RS1J	SMA	1	600	30	1.3	1	5	600	250
RS1K	SMA	1	800	30	1.3	1	5	800	500
RS1M	SMA	1	1000	30	1.3	1	5	1000	500
RS2A	SMA	2	50	50	1.3	2	5	50	150
RS2B	SMA	2	100	50	1.3	2	5	100	150
RS2D	SMA	2	200	50	1.3	2	5	200	150
RS2G	SMA	2	400	50	1.3	2	5	400	150
RS2J	SMA	2	600	50	1.3	2	5	600	250
RS2K	SMA	2	800	50	1.3	2	5	800	500

快恢复二极管（Fast Recovery Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R		I_{FSM}
		A	V	A	V	I_F(A)	μA	V_R(V)	A
RS2M	SMA	2	1000	50	1.3	2	5	1000	500
RS2AB	SMB	2	50	50	1.3	2	5	50	150
RS2BB	SMB	2	100	50	1.3	2	5	100	150
RS2DB	SMB	2	200	50	1.3	2	5	200	150
RS2GB	SMB	2	400	50	1.3	2	5	400	150
RS2JB	SMB	2	600	50	1.3	2	5	600	250
RS2KB	SMB	2	800	50	1.3	2	5	800	500
RS2MB	SMB	2	1000	50	1.3	2	5	1000	500
RS3AB	SMB	3	50	80	1.3	3	5	50	150
RS3BB	SMB	3	100	80	1.3	3	5	100	150
RS3DB	SMB	3	200	80	1.3	3	5	200	150
RS3GB	SMB	3	400	80	1.3	3	5	400	150
RS3JB	SMB	3	600	80	1.3	3	5	600	250
RS3KB	SMB	3	800	80	1.3	3	5	800	500
RS3MB	SMB	3	1000	80	1.3	3	5	1000	500
RS3AC	SMC	3	50	80	1.3	3	5	50	150
RS3BC	SMC	3	100	80	1.3	3	5	100	150
RS3DC	SMC	3	200	80	1.3	3	5	200	150
RS3GC	SMC	3	400	80	1.3	3	5	400	150
RS3JC	SMC	3	600	80	1.3	3	5	600	250
RS3KC	SMC	3	800	80	1.3	3	5	800	500
RS3MC	SMC	3	1000	80	1.3	3	5	1000	500
RS5AC	SMC	5	50	100	1.3	5	5	50	150
RS5BC	SMC	5	100	100	1.3	5	5	100	150
RS5DC	SMC	5	200	100	1.3	5	5	200	150
RS5GC	SMC	5	400	100	1.3	5	5	400	150
RS5JC	SMC	5	600	100	1.3	5	5	600	250
RS5KC	SMC	5	800	100	1.3	5	5	800	500
RS5MC	SMC	5	1000	100	1.3	5	5	1000	500

高效整流二极管（High Efficiency Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R		I_{FSM}
		A	V	A	V	I_F(A)	μA	V_R(V)	A
US1AW	SOD-123FL	1	50	30	1	1	5	50	50
US1BW	SOD-123FL	1	100	30	1	1	5	100	50
US1DW	SOD-123FL	1	200	30	1	1	5	200	50
US1GW	SOD-123FL	1	400	30	1.3	1	5	400	50
US1JW	SOD-123FL	1	600	30	1.7	1	5	600	75
US1KW	SOD-123FL	1	800	30	1.7	1	5	800	75
US1MW	SOD-123FL	1	1000	30	1.7	1	5	1000	75
US1AF	SMAF	1	50	30	1	1	5	50	50
US1BF	SMAF	1	100	30	1	1	5	100	50
US1DF	SMAF	1	200	30	1	1	5	200	50

高效整流二极管（High Efficiency Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R		I_{FSM}
		A	V	A	V	I_F(A)	μA	V_R(V)	A
US1GF	SMAF	1	400	30	1.3	1	5	400	50
US1JF	SMAF	1	600	30	1.7	1	5	600	75
US1KF	SMAF	1	800	30	1.7	1	5	800	75
US1MF	SMAF	1	1000	30	1.7	1	5	1000	75
US2AF	SMAF	2	50	50	1	2	5	50	50
US2BF	SMAF	2	100	50	1	2	5	100	50
US2DF	SMAF	2	200	50	1	2	5	200	50
US2GF	SMAF	2	400	50	1.3	2	5	400	50
US2JF	SMAF	2	600	50	1.7	2	5	600	75
US2KF	SMAF	2	800	50	1.7	2	5	800	75
US2MF	SMAF	2	1000	50	1.7	2	5	1000	75
US3AF	SMAF	3	50	80	1	3	5	50	50
US3BF	SMAF	3	100	80	1	3	5	100	50
US3DF	SMAF	3	200	80	1	3	5	200	50
US3GF	SMAF	3	400	80	1.3	3	5	400	50
US3JF	SMAF	3	600	80	1.7	3	5	600	75
US3KF	SMAF	3	800	80	1.7	3	5	800	75
US3MF	SMAF	3	1000	80	1.7	3	5	1000	75
US2ABF	SMBF	2	50	50	1	2	5	50	50
US2BBF	SMBF	2	100	50	1	2	5	100	50
US2DBF	SMBF	2	200	50	1	2	5	200	50
US2GBF	SMBF	2	400	50	1.3	2	5	400	50
US2JBF	SMBF	2	600	50	1.7	2	5	600	75
US2KBF	SMBF	2	800	50	1.7	2	5	800	75
US2MBF	SMBF	2	1000	50	1.7	2	5	1000	75
US3ABF	SMBF	3	50	80	1	3	5	50	50
US3BBF	SMBF	3	100	80	1	3	5	100	50
US3DBF	SMBF	3	200	80	1	3	5	200	50
US3GBF	SMBF	3	400	80	1.3	3	5	400	50
US3JBF	SMBF	3	600	80	1.7	3	5	600	75
US3KBF	SMBF	3	800	80	1.7	3	5	800	75
US3MBF	SMBF	3	1000	80	1.7	3	5	1000	75
US5ABF	SMBF	5	50	100	1	5	5	50	50
US5BBF	SMBF	5	100	100	1	5	5	100	50
US5DBF	SMBF	5	200	100	1	5	5	200	50
US5GBF	SMBF	5	400	100	1.3	5	5	400	50
US5JBF	SMBF	5	600	100	1.7	5	5	600	75
US5KBF	SMBF	5	800	100	1.7	5	5	800	75
US5MBF	SMBF	5	1000	100	1.7	5	5	1000	75
US1A	SMA	1	50	30	1	1	5	50	50
US1B	SMA	1	100	30	1	1	5	100	50
US1D	SMA	1	200	30	1	1	5	200	50
US1G	SMA	1	400	30	1.3	1	5	400	50
US1J	SMA	1	600	30	1.7	1	5	600	75
US1K	SMA	1	800	30	1.7	1	5	800	75
US1M	SMA	1	1000	30	1.7	1	5	1000	75
US2A	SMA	2	50	50	1	2	5	50	50
US2B	SMA	2	100	50	1	2	5	100	50

高效整流二极管（High Efficiency Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R		I_{FSM}
		A	V	A	V	I_F(A)	μA	V_R(V)	A
US2D	SMA	2	200	50	1	2	5	200	50
US2G	SMA	2	400	50	1.3	2	5	400	50
US2J	SMA	2	600	50	1.7	2	5	600	75
US2K	SMA	2	800	50	1.7	2	5	800	75
US2M	SMA	2	1000	50	1.7	2	5	1000	75
US2AB	SMB	2	50	50	1	2	5	50	50
US2BB	SMB	2	100	50	1	2	5	100	50
US2DB	SMB	2	200	50	1	2	5	200	50
US2GB	SMB	2	400	50	1.3	2	5	400	50
US2JB	SMB	2	600	50	1.7	2	5	600	75
US2KB	SMB	2	800	50	1.7	2	5	800	75
US2MB	SMB	2	1000	50	1.7	2	5	1000	75
US3AB	SMB	3	50	80	1	3	5	50	50
US3BB	SMB	3	100	80	1	3	5	100	50
US3DB	SMB	3	200	80	1	3	5	200	50
US3GB	SMB	3	400	80	1.3	3	5	400	50
US3JB	SMB	3	600	80	1.7	3	5	600	75
US3KB	SMB	3	800	80	1.7	3	5	800	75
US3MB	SMB	3	1000	80	1.7	3	5	1000	75
US3AC	SMC	3	50	80	1	3	5	50	50
US3BC	SMC	3	100	80	1	3	5	100	50
US3DC	SMC	3	200	80	1	3	5	200	50
US3GC	SMC	3	400	80	1.3	3	5	400	50
US3JC	SMC	3	600	80	1.7	3	5	600	75
US3KC	SMC	3	800	80	1.7	3	5	800	75
US3MC	SMC	3	1000	80	1.7	3	5	1000	75
US5AC	SMC	5	50	100	1	5	5	50	50
US5BC	SMC	5	100	100	1	5	5	100	50
US5DC	SMC	5	200	100	1	5	5	200	50
US5GC	SMC	5	400	100	1.3	5	5	400	50
US5JC	SMC	5	600	100	1.7	5	5	600	75
US5KC	SMC	5	800	100	1.7	5	5	800	75
US5MC	SMC	5	1000	100	1.7	5	5	1000	75

超快恢复二极管（Super Fast Recovery Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R		I_{FSM}
		A	V	A	V	I_F(A)	μA	V_R(V)	A
ES1AW	SOD-123FL	1	50	30	1	1	5	50	35
ES1BW	SOD-123FL	1	100	30	1	1	5	100	35
ES1DW	SOD-123FL	1	200	30	1	1	5	200	35
ES1GW	SOD-123FL	1	400	30	1.25	1	5	400	35
ES1JW	SOD-123FL	1	600	30	1.7	1	5	600	35
ES1AF	SMAF	1	50	30	1	1	5	50	35

超快恢复二极管（Super Fast Recovery Rectifier Diode）

Type	Package outline	I_O	V_{RRM}	I_{FSM}	V_F		I_R		I_{FSM}
		A	V	A	V	I_F(A)	μA	V_R(V)	A
ES1BF	SMAF	1	100	30	1	1	5	100	35
ES1DF	SMAF	1	200	30	1	1	5	200	35
ES1GF	SMAF	1	400	30	1.25	1	5	400	35
ES1JF	SMAF	1	600	30	1.7	1	5	600	35
ES2AF	SMAF	2	50	50	1	2	5	50	35
ES2BF	SMAF	2	100	50	1	2	5	100	35
ES2DF	SMAF	2	200	50	1	2	5	200	35
ES2GF	SMAF	2	400	50	1.25	2	5	400	35
ES2JF	SMAF	2	600	50	1.7	2	5	600	35
ES3AF	SMAF	3	50	80	1	3	5	50	35
ES3BF	SMAF	3	100	80	1	3	5	100	35
ES3DF	SMAF	3	200	80	1	3	5	200	35
ES3GF	SMAF	3	400	80	1.25	3	5	400	35
ES3JF	SMAF	3	600	80	1.7	3	5	600	35
ES2ABF	SMBF	2	50	50	1	2	5	50	35
ES2BBF	SMBF	2	100	50	1	2	5	100	35
ES2DBF	SMBF	2	200	50	1	2	5	200	35
ES2GBF	SMBF	2	400	50	1.25	2	5	400	35
ES2JBF	SMBF	2	600	50	1.7	2	5	600	35
ES3ABF	SMBF	3	50	80	1	3	5	50	35
ES3BBF	SMBF	3	100	80	1	3	5	100	35
ES3DBF	SMBF	3	200	80	1	3	5	200	35
ES3GBF	SMBF	3	400	80	1.25	3	5	400	35
ES3JBF	SMBF	3	600	80	1.7	3	5	600	35
ES1A	SMA	1	50	30	1	1	5	50	35
ES1B	SMA	1	100	30	1	1	5	100	35
ES1D	SMA	1	200	30	1	1	5	200	35
ES1G	SMA	1	400	30	1.25	1	5	400	35
ES1J	SMA	1	600	30	1.7	1	5	600	35
ES2A	SMA	2	50	50	1	2	5	50	35
ES2B	SMA	2	100	50	1	2	5	100	35
ES2D	SMA	2	200	50	1	2	5	200	35
ES2G	SMA	2	400	50	1.25	2	5	400	35
ES2J	SMA	2	600	50	1.7	2	5	600	35
ES2AB	SMB	2	50	50	1	2	5	50	35
ES2BB	SMB	2	100	50	1	2	5	100	35
ES2DB	SMB	2	200	50	1	2	5	200	35
ES2GB	SMB	2	400	50	1.25	2	5	400	35
ES2JB	SMB	2	600	50	1.7	2	5	600	35
ES3AB	SMB	3	50	80	1	3	5	50	35
ES3BB	SMB	3	100	80	1	3	5	100	35
ES3DB	SMB	3	200	80	1	3	5	200	35
ES3GB	SMB	3	400	80	1.25	3	5	400	35
ES3JB	SMB	3	600	80	1.7	3	5	600	35
ES3AC	SMC	3	50	100	1	3	5	50	35
ES3BC	SMC	3	100	100	1	3	5	100	35
ES3DC	SMC	3	200	100	1	3	5	200	35
ES3GC	SMC	3	400	100	1.25	3	5	400	35
ES3JC	SMC	3	600	100	1.7	3	5	600	35
ES5AC	SMC	5	50	100	1	5	5	50	35
ES5BC	SMC	5	100	100	1	5	5	100	35
ES5DC	SMC	5	200	100	1	5	5	200	35
ES5GC	SMC	5	400	100	1.25	5	5	400	35
ES5JC	SMC	5	600	100	1.7	5	5	600	35

Electronic Laboratory

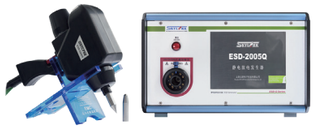
车载7367 P5A P5B脉冲测试仪

二极管功率测试仪

群脉冲发生器

群脉冲发生器

静电放电发生器



静电放电发生器

静电放电发生器

材料分析仪（英国牛津）

雷击浪涌发生器

雷击浪涌发生器

雷击浪涌发生器

用感恩心做人 用责任心做事

To Be Grateful And Responsible