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SM12C

12Volts ESD Protection Devices

Features

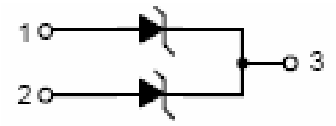
- For sensitive ESD protection
- Stand-off Voltage:12V
- Low leakage
- ESD rating of class 3(>16KV)per Human Body Mode
- Fast response ,response time less than 1ns.
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings

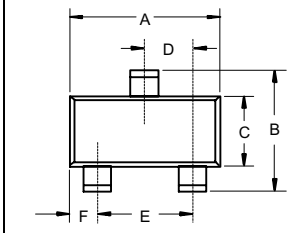
- Operating Junction &StorageTemperature: -55°C to +150°C
- Maximum Thermal Resistance: 556°C/W Junction To Ambient

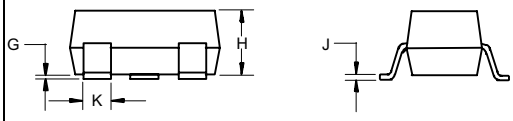
Parameter	Symbol	Limits	unit
IEC61000-4-2(ESD) Air Contact		±15 ±8	KV
ESD Voltage per human body mode		16	KV
Power Dissipation	Pd	225	mw
Lead Solder Temperature-Maximum (10 Second Duration)	T_L	260	°C

Pin Configuration-Top View

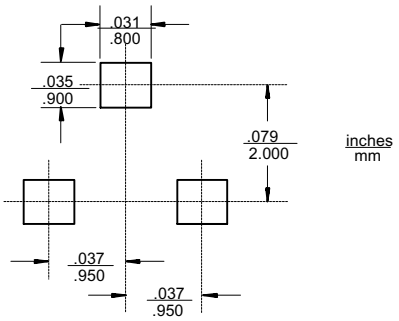


SOT-23





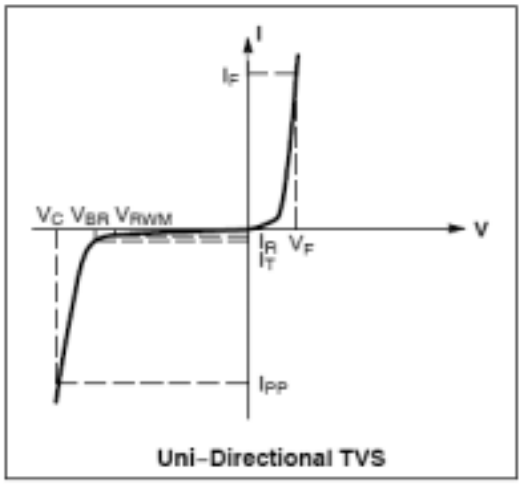
DIM	INCHES MIN	INCHES MAX	MM MIN	MM MAX	NOTE
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	



ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

UNIDIRECTIONAL (Circuit tied to Pins 1 and 3 or 2 and 3)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{pk}	Peak Power Dissipation
C	Capacitance @V_R=0 and f =1MHz



Uni-Directional TVS

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted, V_F = 0.9 V Max. @ I_F = 10mA for all types)

Device	Device Marking	V_{RWM} (V)	I_R (ë A) @ V_{RWM}	V_{BR} (V) @ I_T(Note 2)		I_T	Vc @IPP =1 A	Max I_{PP} +	P_{pk} + (W)	C (pF) Pin 1 to 3
		Max	Max	Min	Max	mA	V	A	Max	Typ
SM12C	12L	12	1.0	13.3	15.75	1.0	19	11.2	300	95

+Surge current waveform per Figure 3

2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C.

TYPICAL CHARACTERISTICS

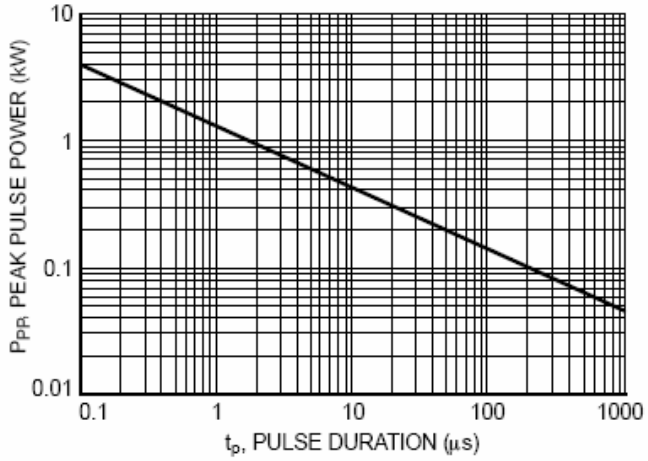


Figure 1. Non-Repetitive Peak Pulse Power versus Pulse Time

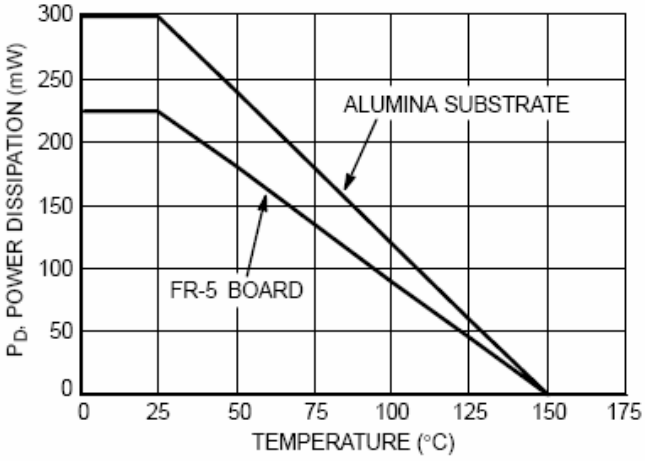


Figure 2. Steady State Power Derating Curve

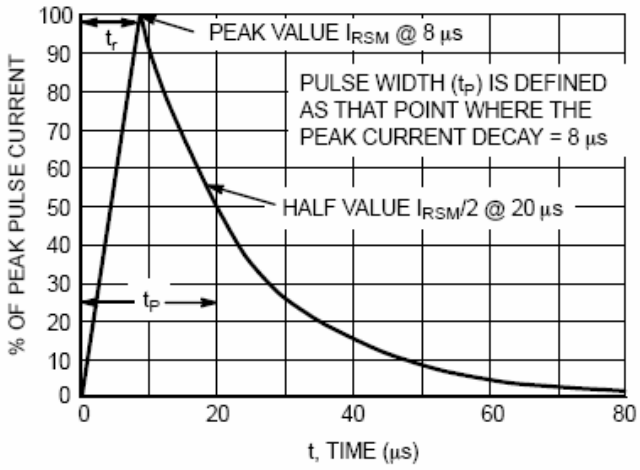


Figure 3. 8 × 20 μs Pulse Waveform

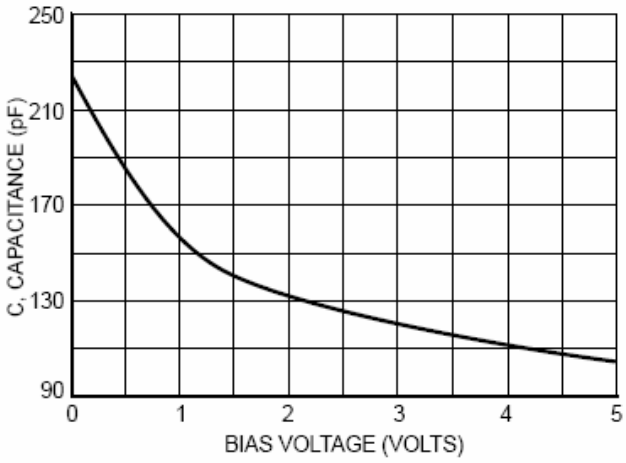


Figure 4. Typical Diode Capacitance