



Micro Commercial Components



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Features

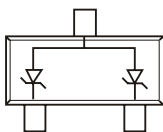
- Halogen free available upon request by adding suffix "-HF"
- For sensitive ESD protection
- Excellent clamping capability
- Low leakage
- ESD rating of class 3(>16KV)per Human Body Mode
- Fast response ,response time less than 1ns.
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings

- Operating Junction & Storage Temperature: -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

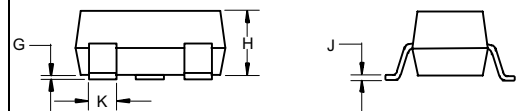
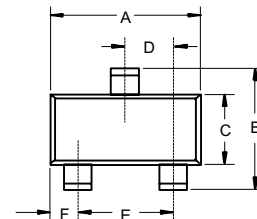
Pin Configuration-Top View



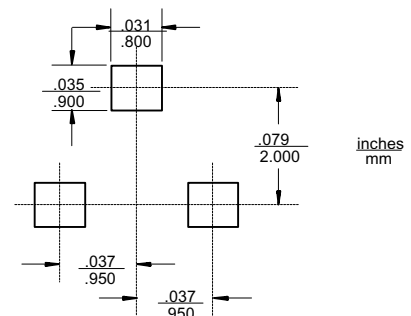
SM05 Thru SM12

5V~12Volts ESD Protection Devices

SOT-23



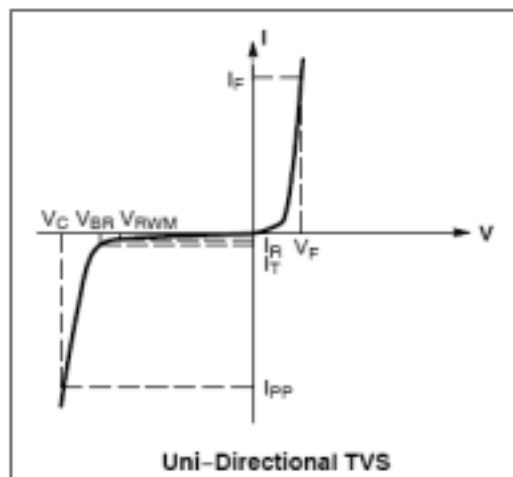
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	



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



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 (μA) @ V _{RWM}	V _{BR} (V) @ I _T (Note 2)		I _T	V _C @I _{PP} =1 A	Max I _{PP} *	P _{pk} * (W)	C (pF) Pin 1 to 3
		Max	Max	Min	Max	mA	V	A	Max	Typ
SM05	5M	5	10	6.2	7.3	1.0	9.8	12	300	110
SM12	12M/12C	12	1.0	13.3	15.75	1.0	19	11.2	300	60

+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

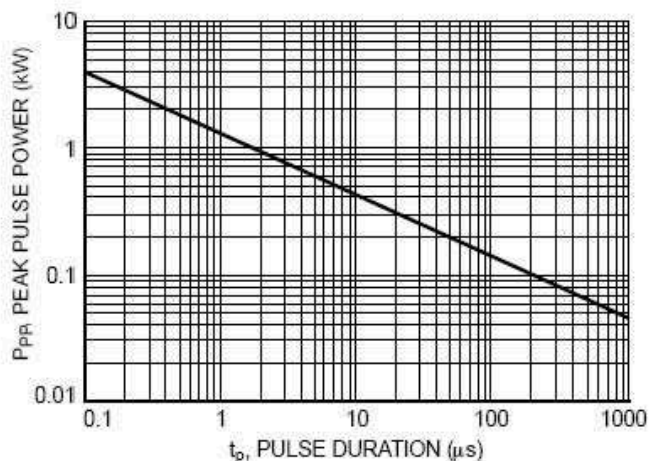


Figure 1. Non-Repetitive Peak Pulse Power versus Pulse Time

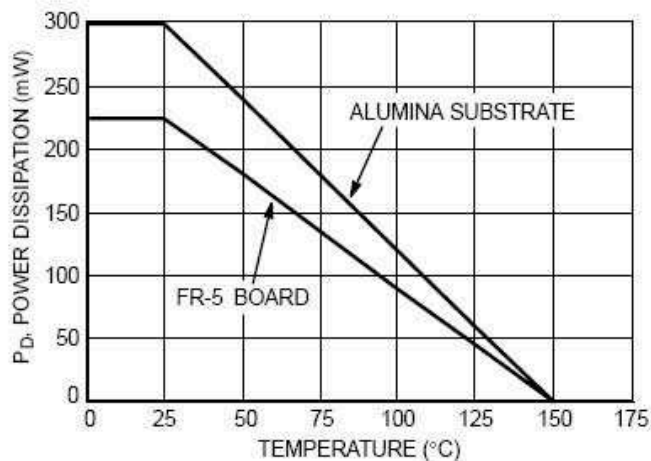


Figure 2. Steady State Power Derating Curve

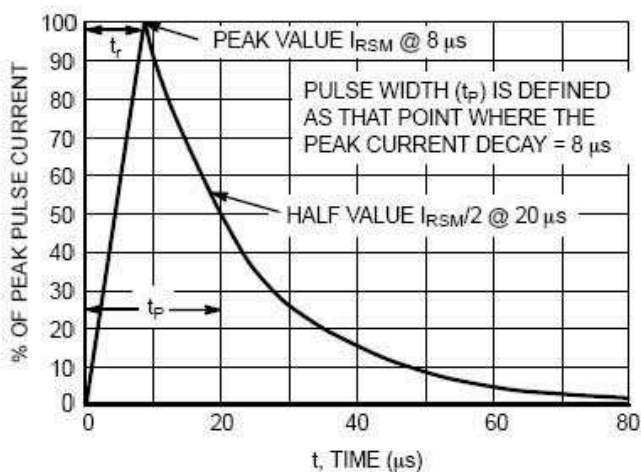


Figure 3. 8 x 20 μs Pulse Waveform



TM

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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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