



## SM05 Thru SM12

### Features

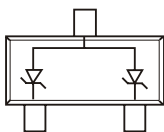
- For sensitive ESD protection
- Excellent clamping capability
- Low leakage
- ESD rating of class 3(>16KV)per Human Body Mode
- Fast response ,response time less than 1ns.
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability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

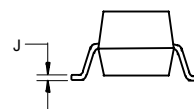
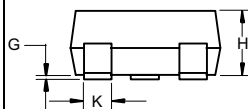
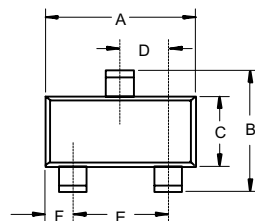
Parameter	Symbol	Limits	unit
IEC61000-4-2(ESD) Air Contact		$\pm 15$ $\pm 8$	KV
ESD Voltage per human body mode		16	KV
Power Dissipation	Pd	225	mw

### Pin Configuration-Top View

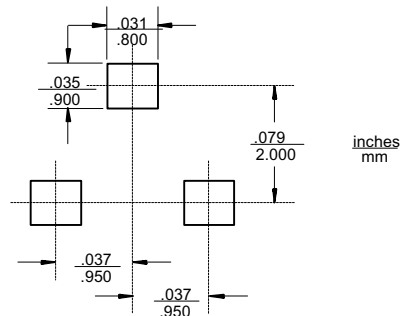


## 5V~12Volts ESD Protection Devices

### SOT-23



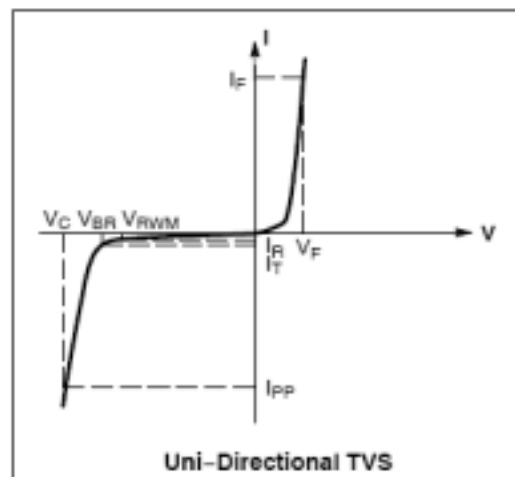
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	



## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ 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 $f=1\text{MHz}$



## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 0.9\text{ V Max.}$ @ $I_F = 10\text{mA}$ for all types)

Device	Device Marking	$V_{RWM}$ (V)	$I_R$ ( $\mu\text{A}$ ) @ $V_{RWM}$	$V_{BR}$ (V) @ $I_T$ (Note 2)		$I_T$	$V_C$ @ $I_{PP} = 1\text{ A}$	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  $25^\circ\text{C}$ .

## TYPICAL CHARACTERISTICS

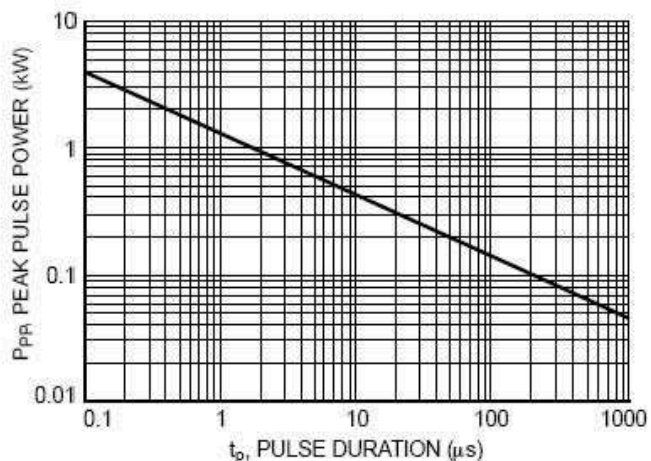


Figure 1. Non-Repetitive Peak Pulse Power versus Pulse Time

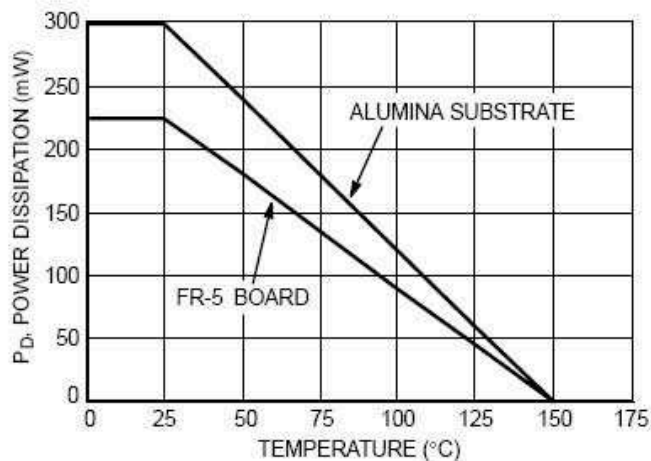


Figure 2. Steady State Power Derating Curve

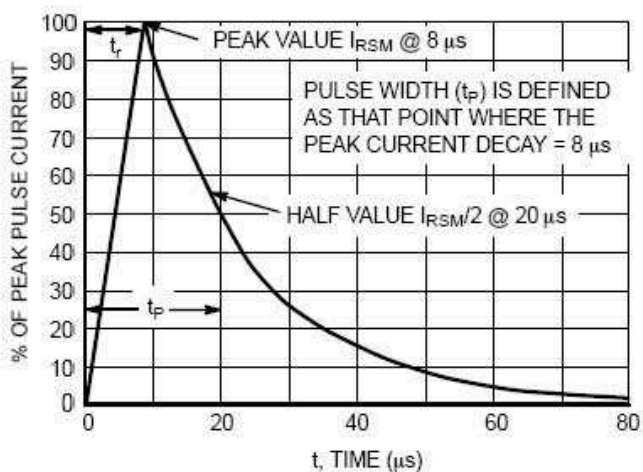


Figure 3.  $8 \times 20 \mu s$  Pulse Waveform



Micro Commercial Components

## Ordering Information :

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

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