

### FEATURES

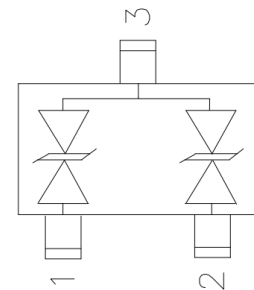
- ✧ 360 watts peak pulse power per line ( $t_P=8/20\mu s$ )
- ✧ Protect for two I/O lines with bi-directional
- ✧ Low clamping voltage
- ✧ Working voltages:5V
- ✧ Low leakage current
- ✧ RoHS compliant



SOT-23

### MAIN APPLICATIONS

- ✧ RS-232, RS-422 & RS-485
- ✧ Servers, notebook, and desktop
- ✧ Cellular handsets and accessories
- ✧ Control & monitoring systems
- ✧ Portable electronics
- ✧ Wireless bus protection
- ✧ Set-top box



PIN Configuration

### PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD)  $\pm 30kV$  (air),  $\pm 30kV$  (contact)

### MECHANICAL CHARACTERISTICS

- ✧ SOT-23 package
- ✧ Molding compound flammability rating: UL 94V-0
- ✧ Weight 8 milligrams (approximate)
- ✧ Quantity per reel: 3,000 pcs
- ✧ Reel size: 7 inch
- ✧ Lead finish: lead free
- ✧ Marking code: M05C

**ABSOLUTE MAXIMUM RATINGS**( $T_A=25^{\circ}\text{C}$ , RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 $\mu\text{s}$ waveform	$P_{PP}$	360	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	+/- 30 +/- 30	kV
Lead soldering temperature	$T_L$	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	$T_J$	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS**( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	$V_{RWM}$				5	V
Reverse breakdown voltage	$V_{BR}$	$I_T=1\text{mA}$	5.5		8.5	V
Reverse leakage current	$I_R$	$V_{RWM}=5\text{V}$			1.0	$\mu\text{A}$
Clamping voltage (pin1 to pin3, pin2 to pin3)	$V_C$	$I_{PP}^{①}=1\text{A}$ , $t_P=8/20\mu\text{s}$			10	V
		$I_{PP}^{①}=30\text{A}$ , $t_P=8/20\mu\text{s}$			12	V
Junction capacitance	$C_J^{②}$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$		60		pF
Junction capacitance	$C_J^{③}$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$		30		pF

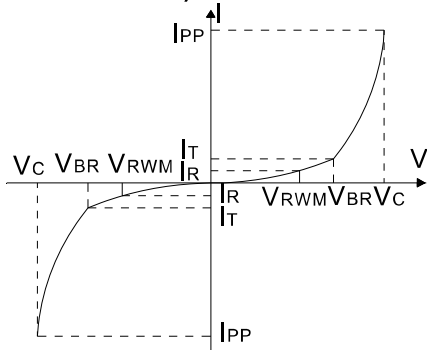
① Surge waveform: 8/20 $\mu\text{s}$

②  $C_J$  measured @  $V_{RWM}=0\text{V}$ , 1MHz (pin1 to pin3, pin2 to pin3)

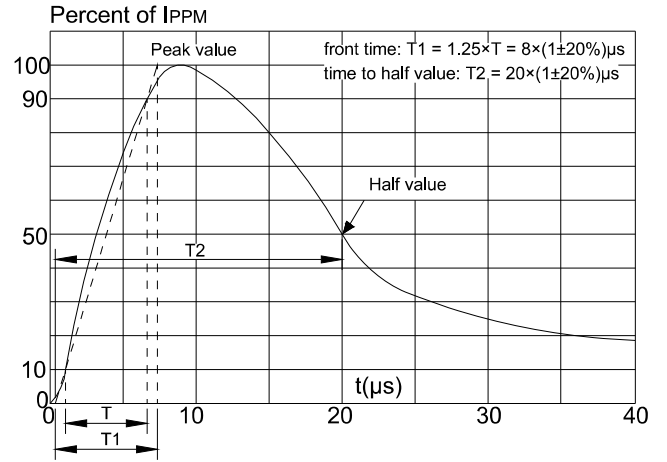
③  $C_J$  measured @  $V_{RWM}=0\text{V}$ , 1MHz (pin1 to pin2, pin2 to pin1)

### RATINGS AND V-I CHARACTERISTICS CURVES (T<sub>A</sub>=25°C, unless otherwise noted)

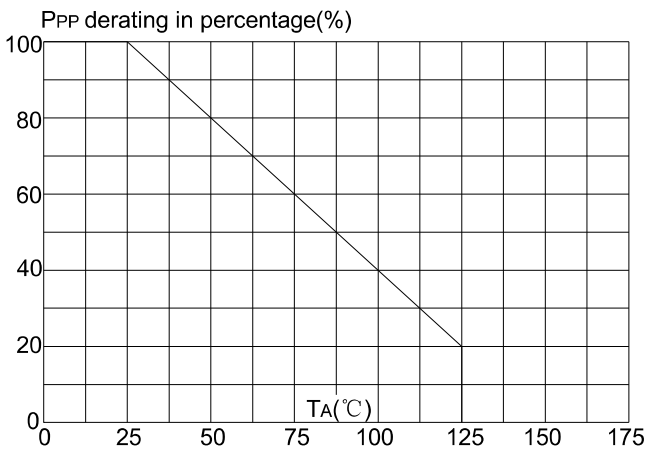
**FIG.1: V- I curve characteristics (Bi-directional)**



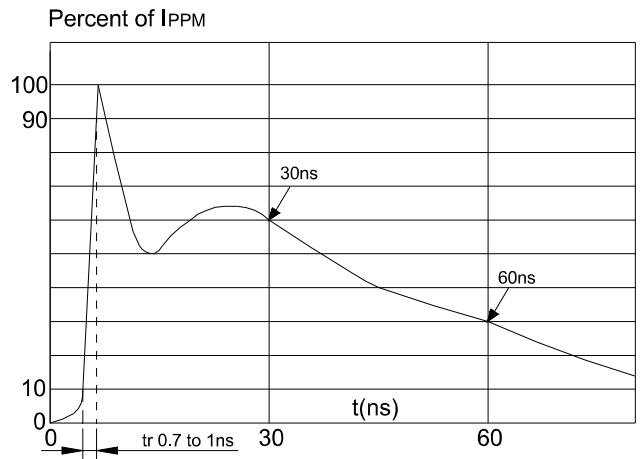
**FIG.2: Pulse waveform (8/20μs)**



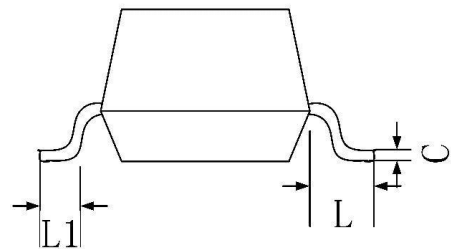
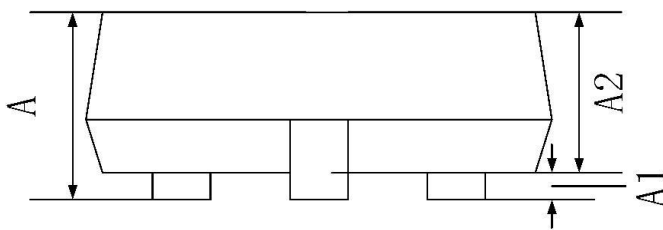
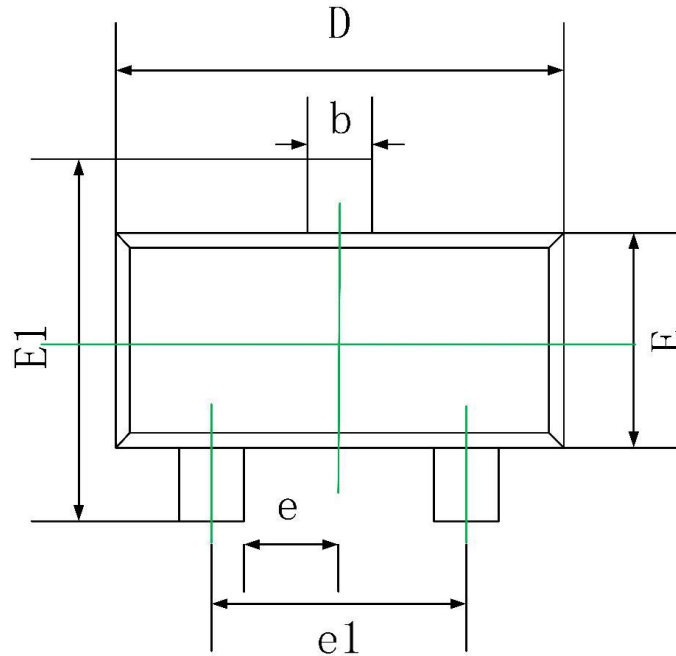
**FIG.3: Pulse derating curve**



**FIG.4: ESD clamping (30kV contact)**



## SOT-23 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020

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