

### FEATURES

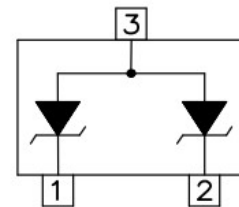
- ✧ 140 watts peak pulse power per line ( $t_P=8/20\mu s$ )
- ✧ Protects two I/O lines with uni-directional
- ✧ Low clamping voltage
- ✧ Working voltages:15V
- ✧ Low leakage current
- ✧ RoHS compliant



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: M05

**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	$P_{PP}$	140	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	$V_{BR}$	$I_T=1\text{mA}$	6.5			V
Reverse leakage current	$I_R$	$V_{RWM}=5\text{V}$			1.0	$\mu\text{A}$
Clamping voltage	$V_C$	$I_{PP}^{\textcircled{1}}=1\text{A}$ , $t_P=8/20\mu\text{s}$			10	V
		$I_{PP}^{\textcircled{1}}=10\text{A}$ , $t_P=8/20\mu\text{s}$			14	V
Junction capacitance	$C_J^{\textcircled{2}}$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$ Any I/O pin to GND		60		pF
Junction capacitance	$C_J^{\textcircled{3}}$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$ Between I/O pins		30		pF

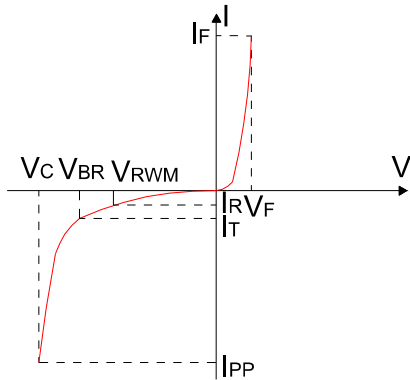
① Surge waveform: 8/20 $\mu\text{s}$

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

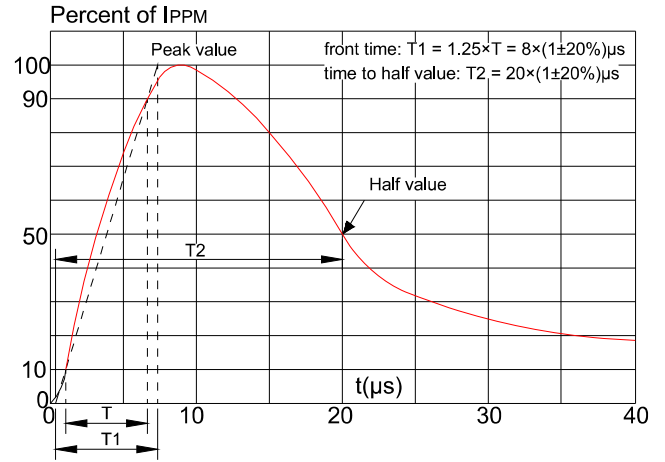
③  $C_J$  measured @  $V_{RWM}=0\text{V}$ , 1MHz (pin1 to pin2, pin2 to pin1)

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

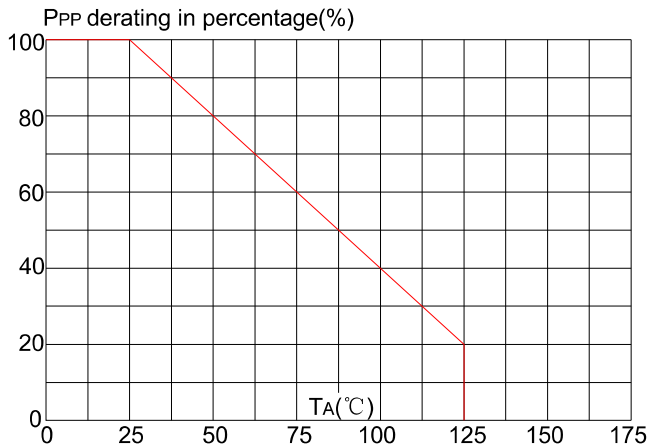
**FIG.1: V- I curve characteristics (Uni-directional)**



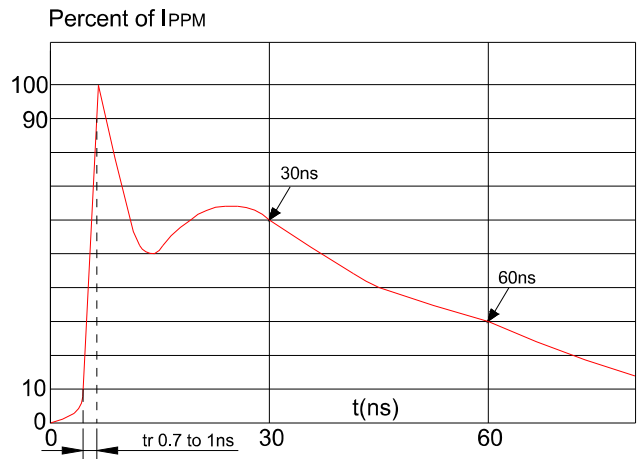
**FIG.2: Pulse waveform (8/20μs)**



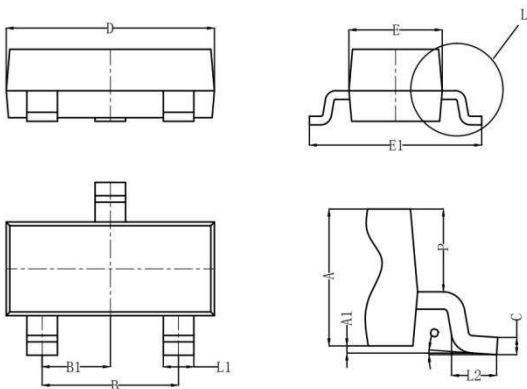
**FIG.3: Pulse derating curve**



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



### PACKAGE MECHANICAL DATA



**SOT-23**

Symbol	Dimensions (mm)		
	Min	Typ	Max
A	0.900	1.000	1.1100
A1	0.000	0.050	0.100
L1	0.350	0.400	0.500
C	0.100	0.110	0.120
D	2.800	2.900	3.000
E	1.250	1.300	1.350
E1	2.250	2.400	2.550
B	1.800	1.900	2.000
B1	0.950 Typ		
L2	0.200	0.350	0.450
P	0.550	0.575	0.600