

### FEATURES

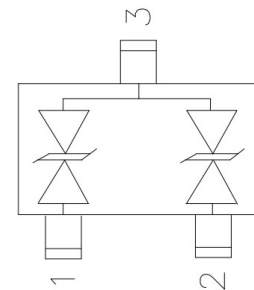
- ◇ 455 watts peak pulse power per line ( $t_P=8/20\mu s$ )
- ◇ Protect for two I/O lines with bi-directional
- ◇ Low clamping voltage
- ◇ Working voltages:15V
- ◇ Low leakage current
- ◇ RoHS compliant



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: BB2

**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	$P_{PP}$	455	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	$V_{RWM}$				15	V
Reverse breakdown voltage	$V_{BR}$	$I_T=1\text{mA}$	17.0		19.5	V
Reverse leakage current	$I_R$	$V_{RWM}=15\text{V}$			1.0	$\mu\text{A}$
Clamping voltage (pin1 to pin3, pin2 to pin3)	$V_C$	$I_{PP}^{\textcircled{1}}=1\text{A}$ , $t_P=8/20\mu\text{s}$			20	V
		$I_{PP}^{\textcircled{1}}=13\text{A}$ , $t_P=8/20\mu\text{s}$			35	V
Junction capacitance	$C_J^{\textcircled{2}}$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$		30		pF
Junction capacitance	$C_J^{\textcircled{3}}$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$		15		pF

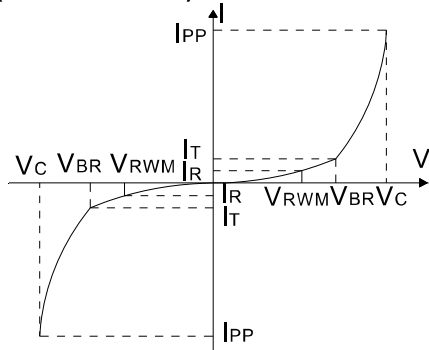
① Surge waveform: 8/20 $\mu\text{s}$

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

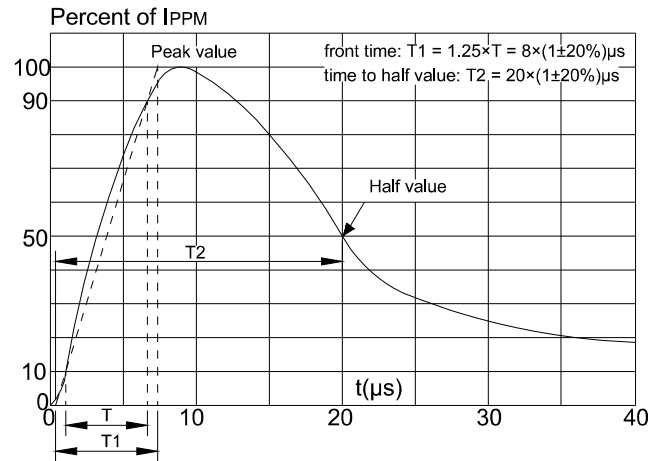
③  $C_J$  measured @  $V_{RWM}=0\text{V}$ , 1MHz (pin1 to pin2, pin2 to pin1)

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

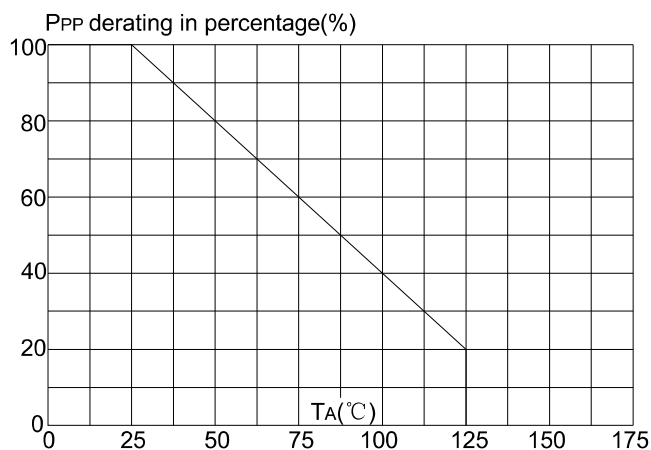
**FIG.1: V- I curve characteristics (Bi-directional)**



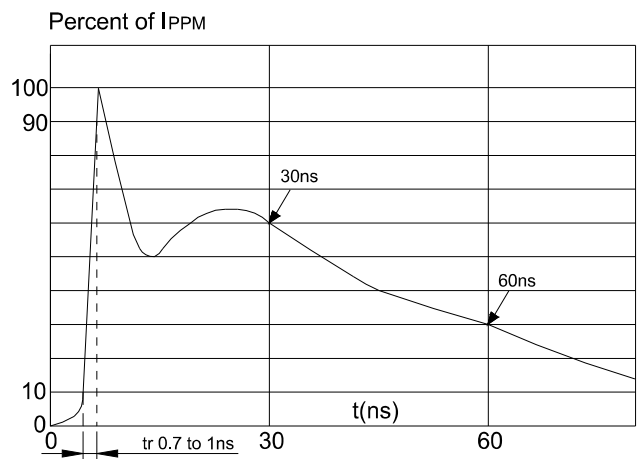
**FIG.2: Pulse waveform (8/20μs)**



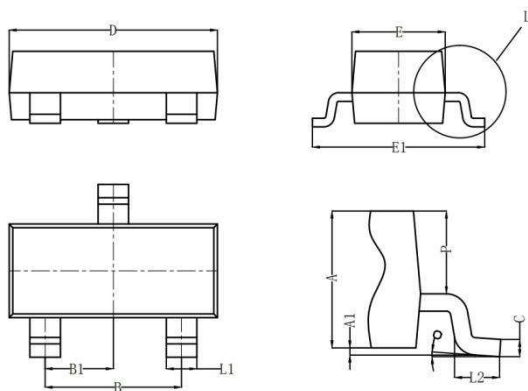
**FIG.3: Pulse derating curve**



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



### 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