



## 1-Line Ultra Low Capacitance Bi-directional TVS Diode

### Features

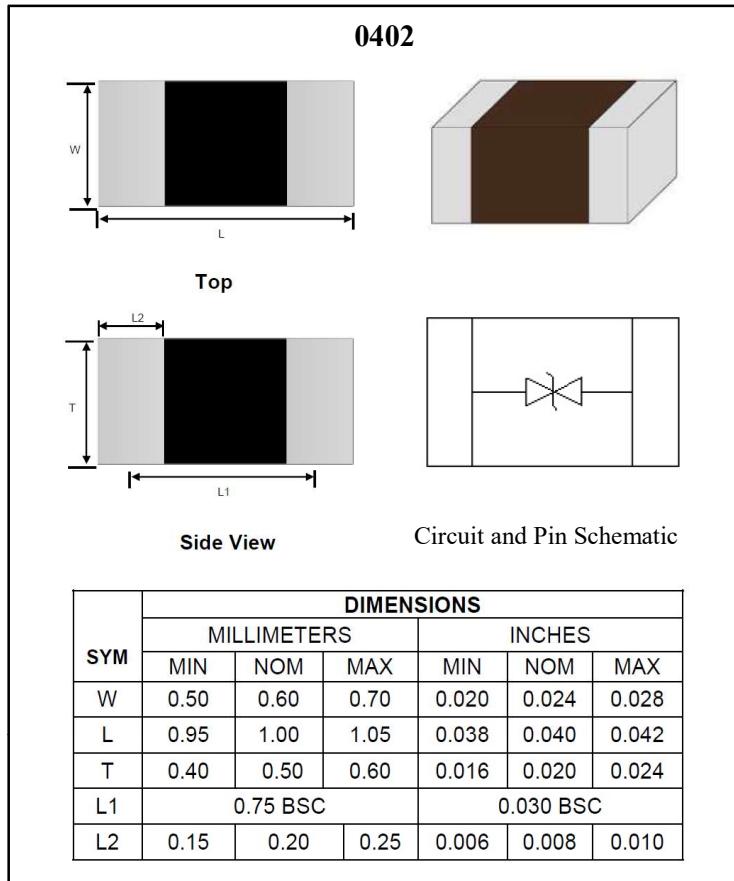
- Ultra small package :  $1.0 \times 0.6 \times 0.5\text{mm}$
- Ultra low capacitance :  $0.3\text{pF}$  typical
- Ultra low leakage : nA level
- Low operating voltage : 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards :
  - IEC 61000-4-2(ESD) immunity test  
Air discharge :  $\pm 25\text{kV}$ , Contact discharge :  $\pm 23\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 3.5A (8/20us)
- RoHS Compliant

### Mechanical Data

- Package : 0402
- Case Material : "Green" Molding Compound.
- Lead Finish : Sn
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity : Level 3 per J-STD-020
- Terminal Connections : See Diagram Below
- Marking Information : See Below

### Applications

- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB Ports
- Digital Video Interface (DVI)
- PCI Express and Serial SATA Ports



### Absolute Maximum Ratings (Ta= 25°C unless otherwise specified)

Parameter	Symbol	Value			Unit
Peak Pulse Power (8/20us)	Ppk	70			W
Peak Pulse Current (8/20us)	Ipp	3.5			A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm 25$			kV
ESD per IEC 61000-4-2 (Contact)		$\pm 23$			
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +125			°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150			°C

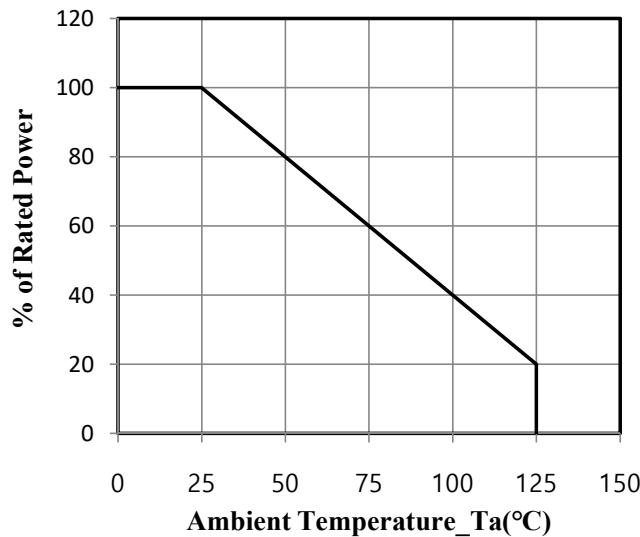
### Electrical Characteristics (Ta= 25°C unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>	-	-	5.0	V	
Breakdown Voltage	V <sub>BR</sub>	6.0	8.0	9.0	V	I <sub>T</sub> = 1mA,
Reverse Leakage Current	I <sub>R</sub>	-	-	0.5	uA	V <sub>RWM</sub> = 5V
Clamping Voltage	V <sub>C</sub>	-	-	12	V	I <sub>PP</sub> =1A(8×20us pulse)
Clamping Voltage	V <sub>C</sub>	-	-	20	V	I <sub>PP</sub> =3.5A(8×20us pulse)
Junction Capacitance	C <sub>J</sub>	-	0.3	0.5	pF	f=1MHz, V <sub>R</sub> =0V

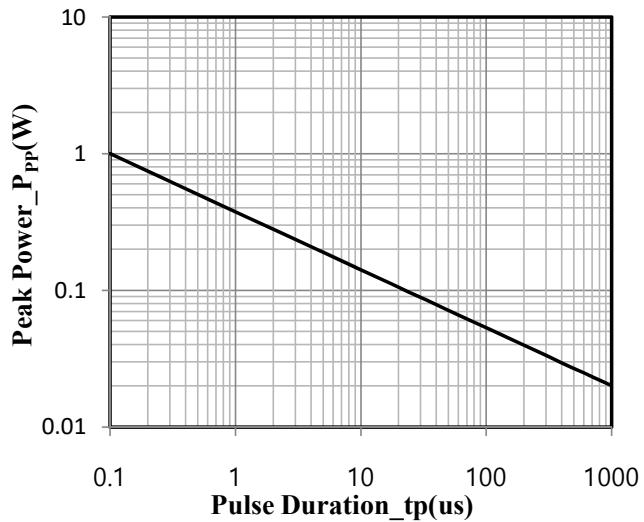


**Ratings and Characteristics Curves** ( $T_a=25^\circ\text{C}$  unless otherwise noted)

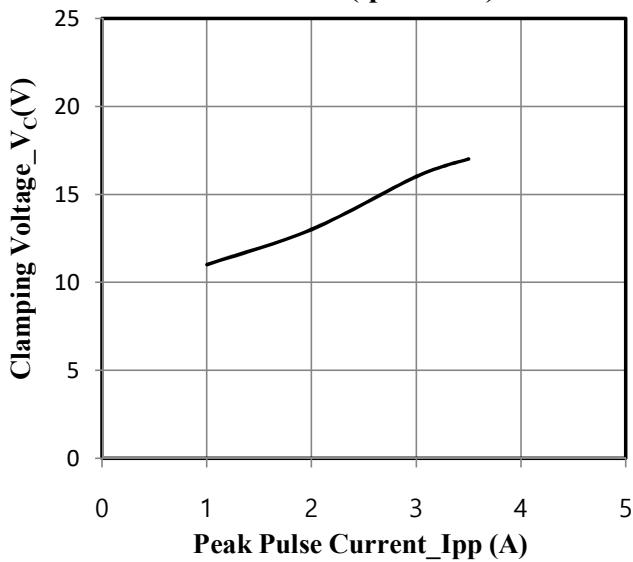
**Fig.1 Power Derating Curve**



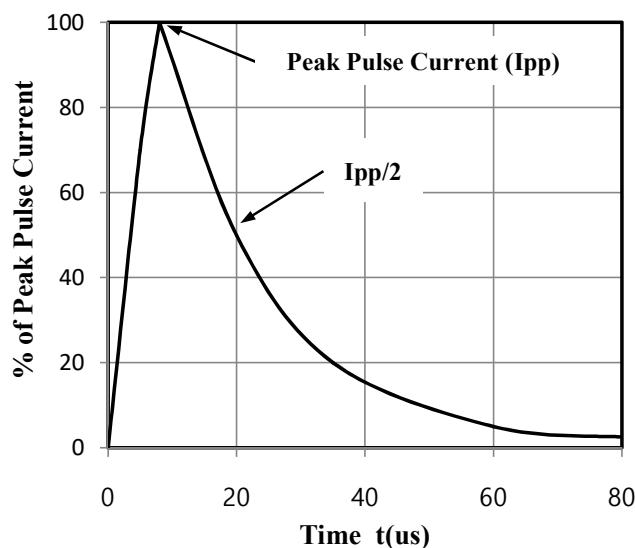
**Fig.2 Peak Pulse Power vs. Pulse Time**



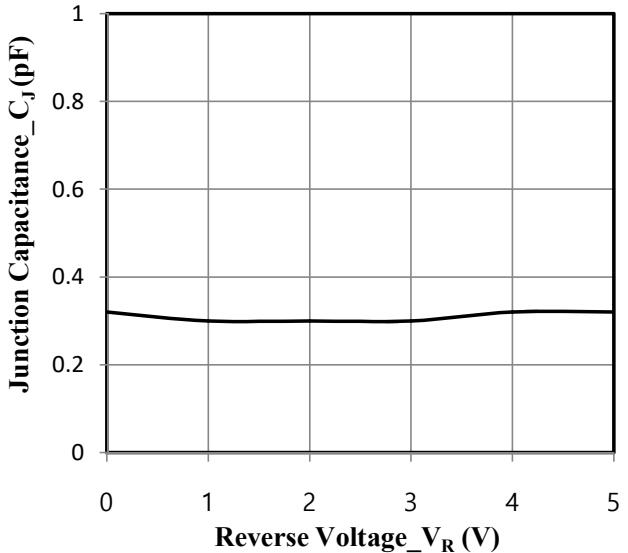
**Fig.3 Clamping Voltage vs. Peak Pulse Current ( $t_p=8/20\mu\text{s}$ )**



**Fig.5 8 × 20μs Pulse Waveform**



**Fig.4 Junction Capacitance vs. Reverse Voltage**



**Fig. 6 ESD Clamping Voltage 8kV Contact per IEC61000-4-2**

