

ME5V0Z1BBC

Bi-directional TVS Diode for ESD Protection

1. Protection Solution To Meet

- IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 8A (8/20 μs)

2. Features

- Protects one bi-directional I/O line
- Low clamping voltage
- Working voltage: 5V
- Low leakage current
- RoHS compliant

3. Main Application

- Cell phone handsets and accessories
- Microprocessor based equipment
- Personal digital assistants (PDA's)
- Notebooks, desktops, and servers
- Portable instrumentation
- Peripherals
- Digital cameras

4. Mechanical Characteristics

- SOD-523 package
- Molding compound flammability rating: UL 94V-0
- Weight 0.5 milligrams (approximate)
- Lead finish: lead free
- Marking code: 5B

5. Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Contact)	$V_{\text{ESD-Contact}}$	± 30	KV
ESD per IEC 61000-4-2 (Air)	$V_{\text{ESD-Air}}$	± 30	KV
Peak Pulse Power (8/20 μs)	P_{pp}	100	W
Operating Temperature	T_{OPT}	$-55\sim+150$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55\sim+150$	$^\circ\text{C}$

6. Pinning information

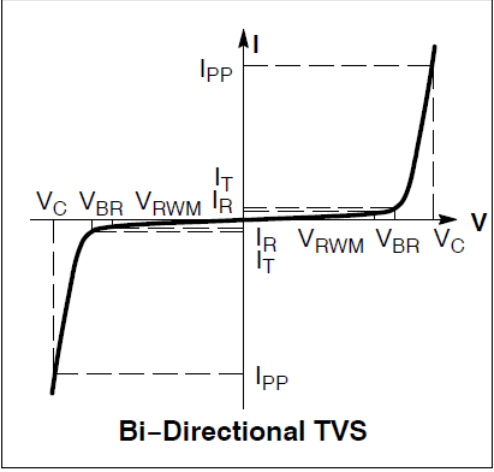
Pin	Symbol	Description	Simplified outline	Equivalent Circuit	Marking	Package
1	A	Anode			5B	SOD-523
2	A	Anode				

7. Electrical Characteristics (T_{amb}=25°C)

Parameter	Symbols	Condition	Min	Typ	Max	
Reverse Working Voltage	VRWM				5	V
Breakdown Voltage	V _{BR}	I _T =1mA	6.0	—	8.5	V
Reverse Leakage Current	I _R	V _{RWM} =±5V	—	—	0.1	uA
Clamping Voltage	V _C	I _{pp} =1A , t _p =8/20us	—	—	8.5	V
		I _{pp} =8A , t _p =8/20us	—	—	12	V
Junction Capacitance	C _J	V _R =0V ,f=1MHz	—	—	18	pF

8. Electrical Parameters

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}
I _T	Test Current
V _{BR}	Breakdown Voltage @I _T
P _{PK}	Peak Power Dissipation
C	Capacitance @ V _R =0 and f=1MHz



Bi-Directional TVS

9. Typical Characteristics

Fig.1 8/20 μ s Waveform Per IEC6100-4-5

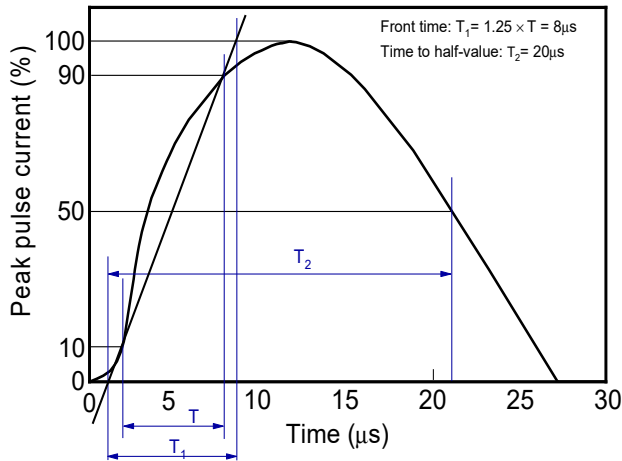


Fig.2 Contact Discharge Current Waveform per IEC61000-4-2

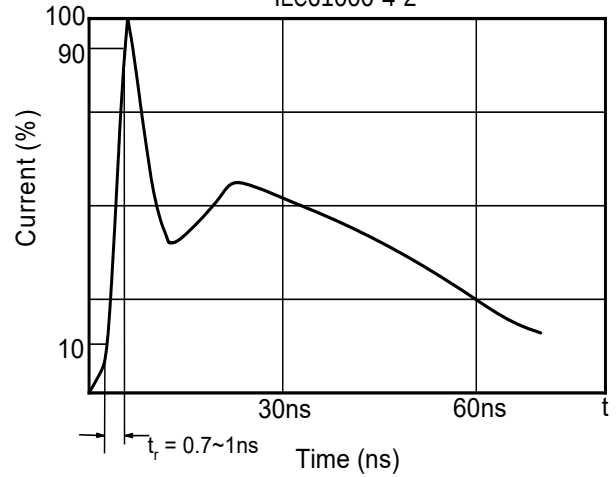


Fig.3 Clamping Voltage VS Peak Pulse Current

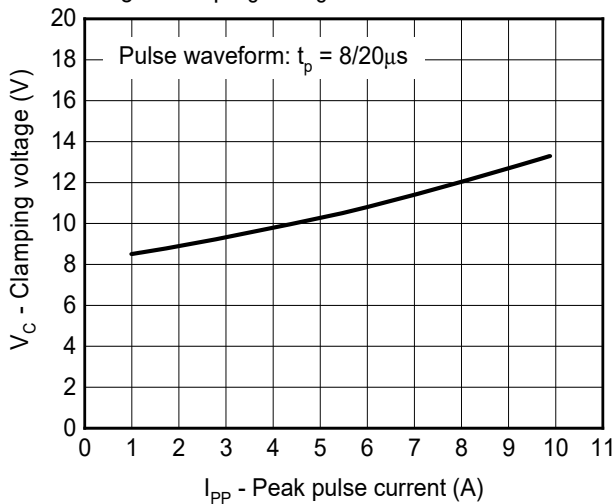


Fig.4 Capacitance VS Bias

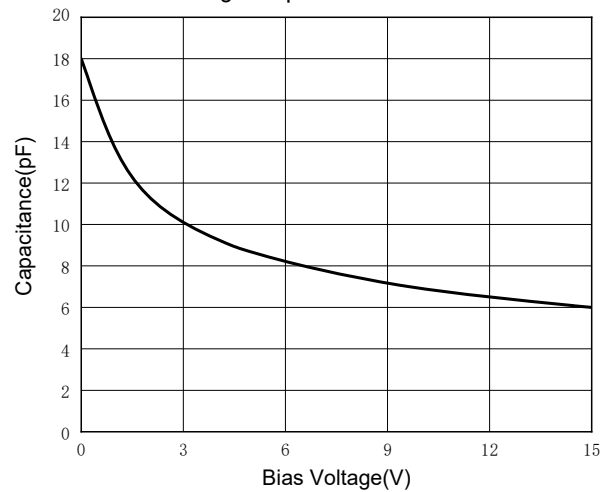


Fig.5 Non-Repetitive Peak Pulse Power vs Pulse Time

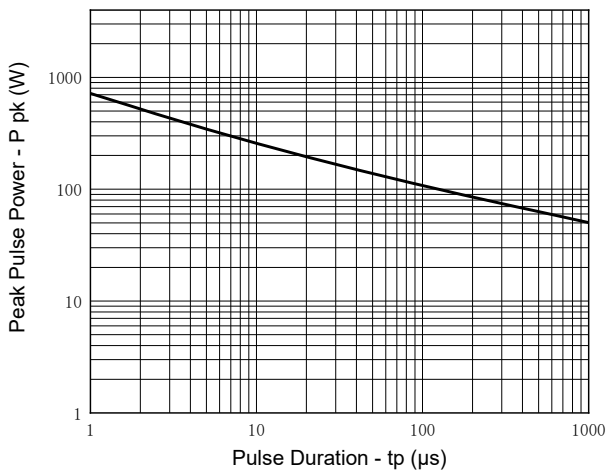
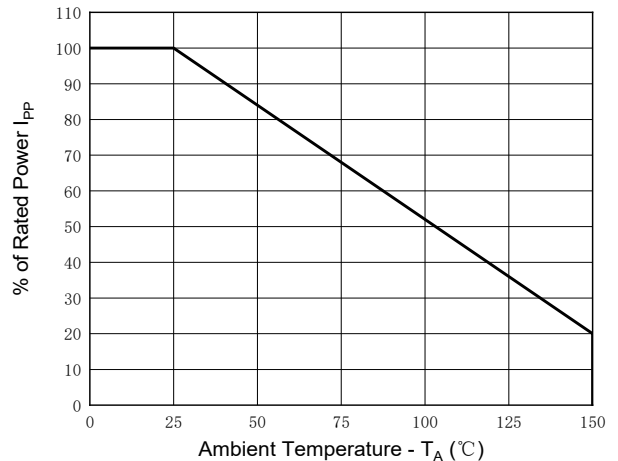
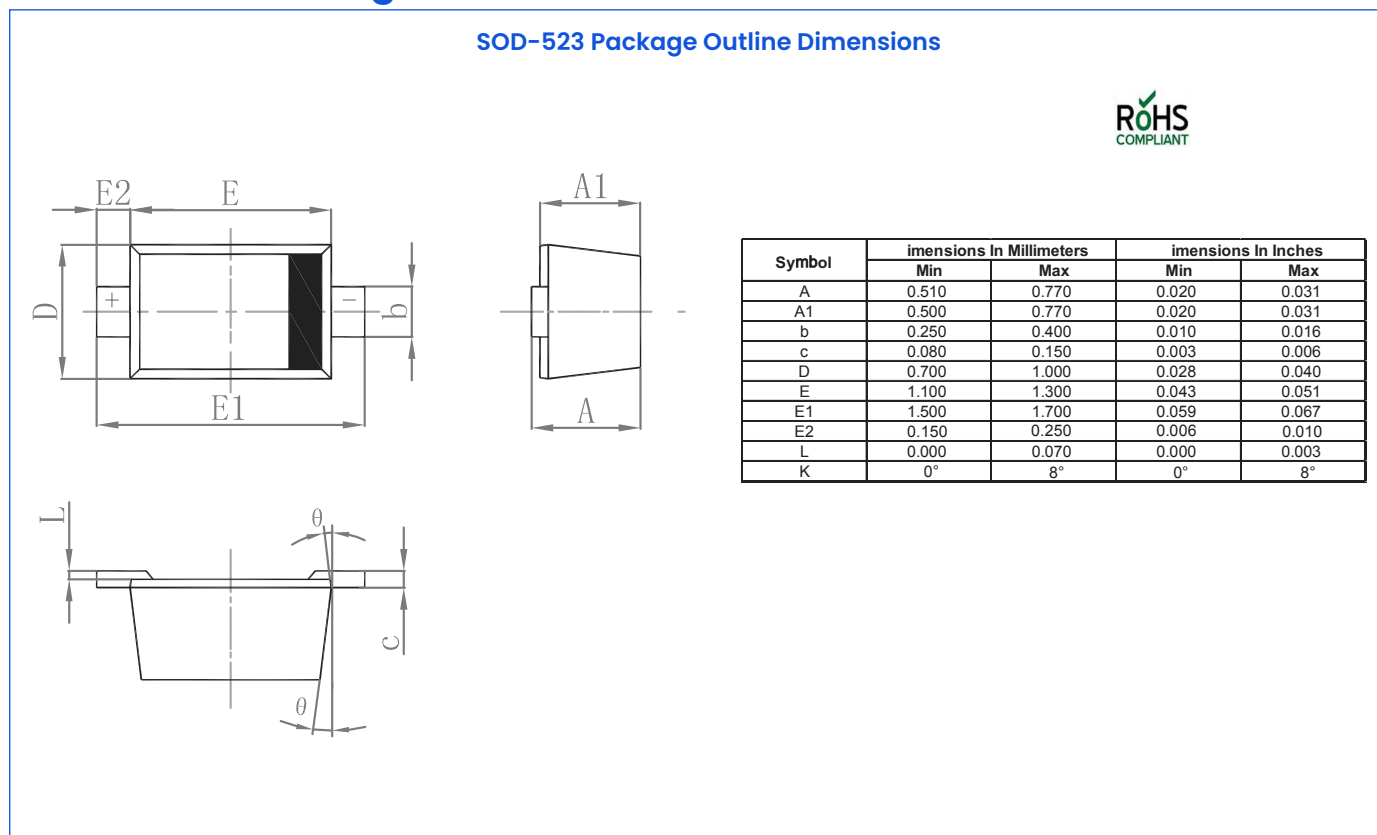


Fig.6 Power Derating Curve

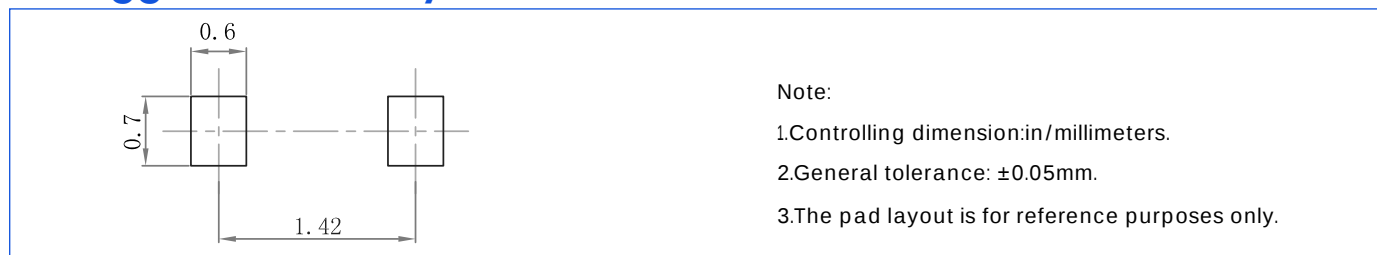


The curve above is for reference only.

10. Outline Drawing



11. Suggested Pad Layout



12. PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
SOD-523	7"	178	5000	190*190*190	75,000	400*400*220	300,000

13.Important Notice and Disclaimer

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