

### 2-Line Ultra Low Capacitance TVS Diode Array

#### Features

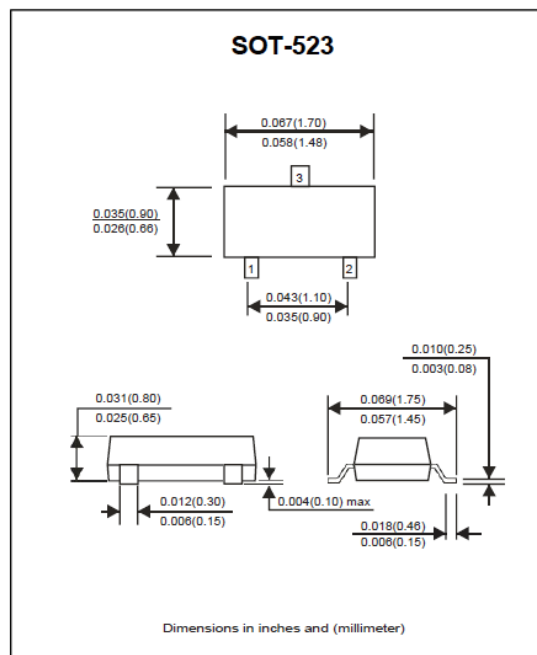
- IEC 61000-4-2 (ESD)  $\pm 25\text{kV}$  (air),  $\pm 20\text{kV}$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 5A (8/20 $\mu\text{s}$ )
- Ultra Low Capacitance
- Low leakage current
- Low clamping voltage
- Operating voltage: 5V
- Protects one bidirectional line or two unidirectional lines

#### Applications

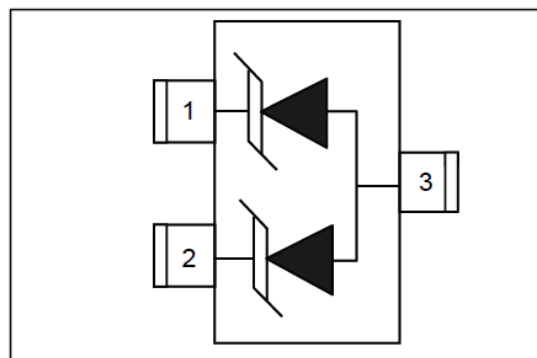
- Mobile Display Digital Interface (MDDI)
- HBT Power Amplifier Protection
- InfiniBand Transceiver Protection
- Photodetector Protection
- Industrial Controls
- USB 2.0

#### Mechanical Characteristics

- Package: SOT-523
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Material: RoHS compliant



#### Circuit and Pin Schematic



#### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ Unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )	$P_{PP}$	80	W
Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )	$I_{PP}$	5	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	$\pm 25$	KV
ESD per IEC 61000-4-2 (Contact)		$\pm 20$	KV
Operating Temperature Range	$T_J$	-55 to + 125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to + 150	$^\circ\text{C}$

Electrical Parameters (T <sub>A</sub> = 25°C Unless otherwise noted)	
Symbol	Parameter
I <sub>PP</sub>	Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Reverse Stand-Off Voltage
I <sub>R</sub>	Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current
I <sub>F</sub>	Forward Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>

Electrical Characteristics (T <sub>A</sub> = 25°C Unless otherwise noted)						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V <sub>RWM</sub>	Pin 1 or Pin 2 to Pin 3 and Between Pin1 and Pin2			5.0	V
Reverse breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> = 1mA, (Pin 1 or Pin 2 to Pin 3)	6.0			V
Reverse leakage current	I <sub>R</sub>	V <sub>RWM</sub> = 5V, (Pin 1 or Pin 2 to Pin 3 and Between Pin 1 and Pin 2)			0.5	μA
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 1A (tp =8/20μs), (Pin 1 or Pin 2 to Pin 3)			9	V
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 5A (tp =8/20μs), (Pin 1 or Pin 2 to Pin 3)			16	V
Junction capacitance	C <sub>J</sub>	V <sub>R</sub> = 0V, f = 1MHz, (Pin 1 to Pin 2)		0.3		pF
Junction capacitance	C <sub>J</sub>	V <sub>R</sub> = 0V, f = 1MHz (Pin 1 or Pin 2 to Pin 3)		0.6	0.8	pF

Typical Performance Characteristics ( $T_A = 25^\circ\text{C}$  Unless otherwise noted)

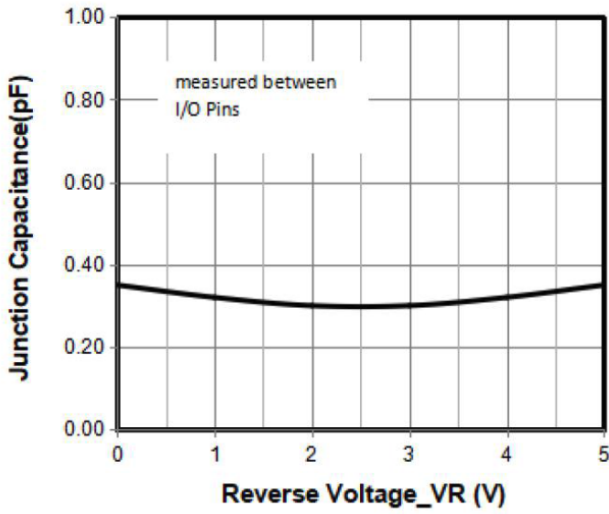


Fig 1. Junction Capacitance vs. Reverse Voltage

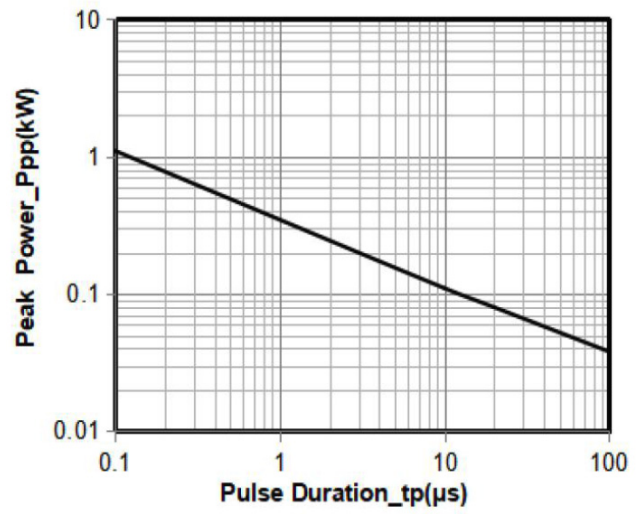


Fig 2. Peak Pulse Power vs. Pulse Time

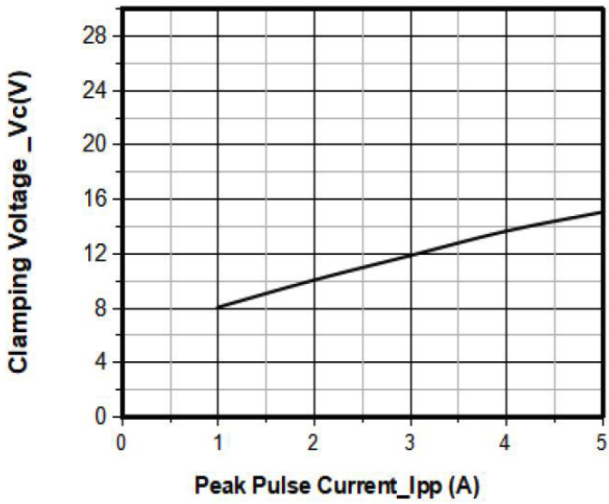


Fig 3. Clamping Voltage vs. Peak Pulse Current

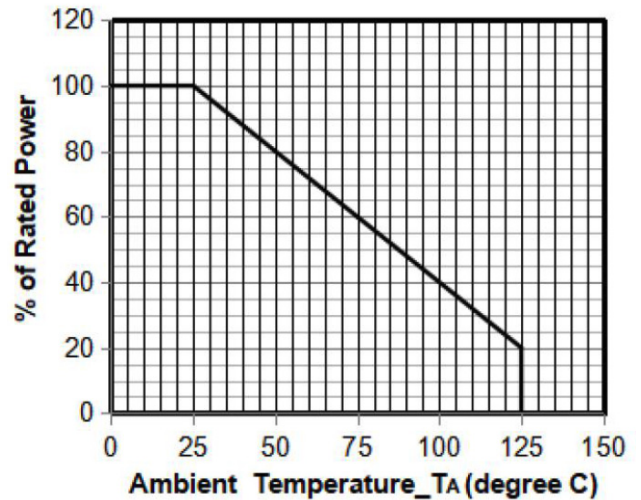


Fig 4. Power Derating Curve

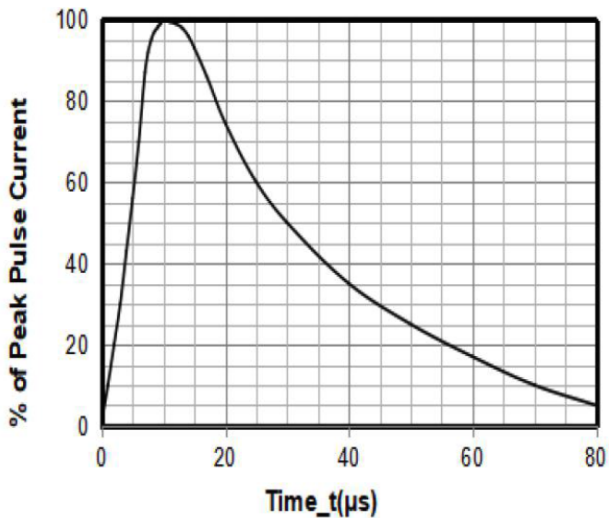
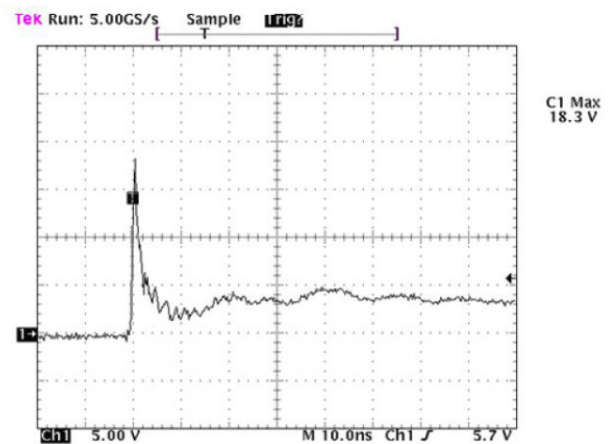


Fig 5. 8 X 20μs Pulse Waveform



Note: Data is taken with a 10x attenuator

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

### Suggested PAD Layout

Symbol	SOT-523	
	(mm)	(inch)
A	0.60	0.024
B	0.50	0.020
C	0.40	0.016
D	1.00	0.039
E	1.24	0.049
F	1.84	0.072

### Marking Code

Part Number	Marking Code	
SC05L2UTP	5B	

### Ordering information

Part Number	Package	Base qty	Reel Size	Delivery mode
		(pcs)	(inch)	
SC05L2UTP	SOT-523	3,000	7	Tape and reel