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PESD5V0X1BT

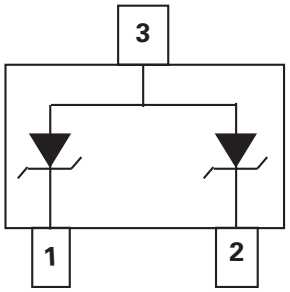
2-Line Ultra Low Capacitance TVS Diode

Features

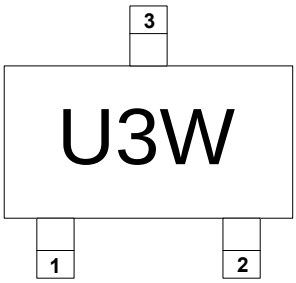
- Low capacitance: 0.3pF typical （I/O to I/O）
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Up to 2-line protects
- Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±25kV
    Contact discharge: ±20kV
  – IEC61000-4-5 (Lightning) 5A (8/20μs)
- RoHS Compliant



SOT-23



Circuit diagram



U3W= Device code
Marking (Top View)

Mechanical Characteristics

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB 2.0 and 3.0 Ports
- HDMI 1.3 and 1.4
- Digital Visual Interface (DVI)
- PCI Express and Serial SATA Ports
- Notebook Computer

Ordering Information

Part Number	Packaging	Reel Size
PESD5V0X1BT	3000/Tape & Reel	7 inch

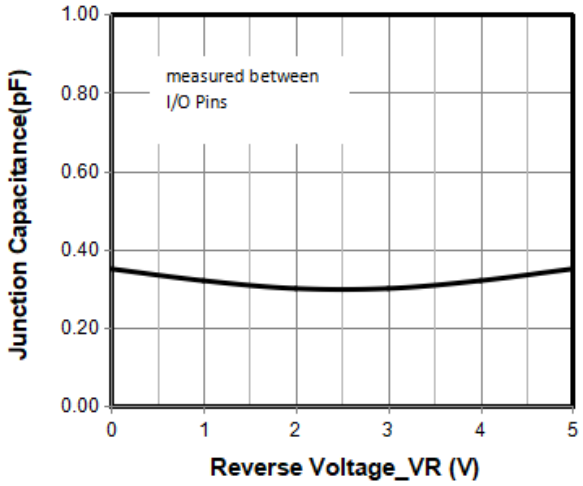
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	80	W
Peak Pulse Current (8/20μs)	I_{PP}	5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±25 ±20	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

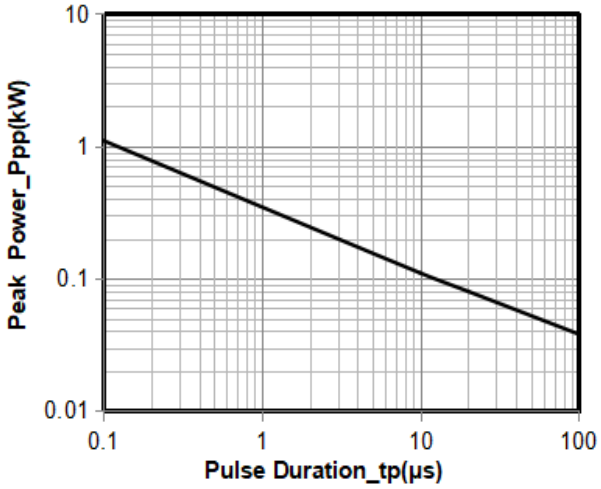
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA, pin 1 or pin 2 to pin 3 and between pin 1 and pin 2
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 5V, Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2
Clamping Voltage	V_C			9	V	I_{PP} = 1A (8 x 20μs pulse), pin 1 or pin 2 to pin 3
Clamping Voltage	V_C			16	V	I_{PP} = 5A (8 x 20μs pulse), pin 1 or pin 2 to pin 3
Junction Capacitance	C_J		0.3	0.4	pF	VR = 0V, f = 1MHz, between pin 1 and pin 2
Junction Capacitance	C_J			0.8	pF	VR = 0V, f = 1MHz, pin 1 or pin 2 to pin 3

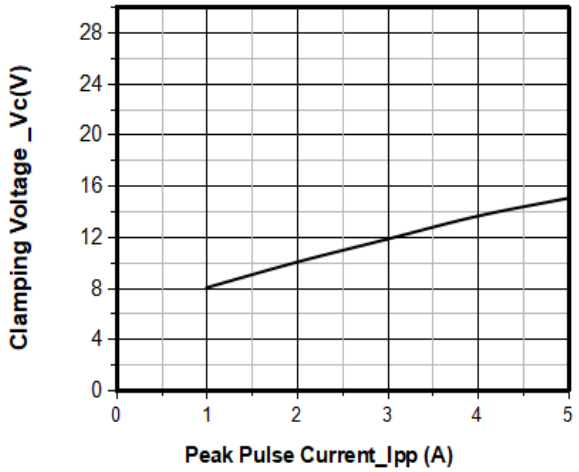
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



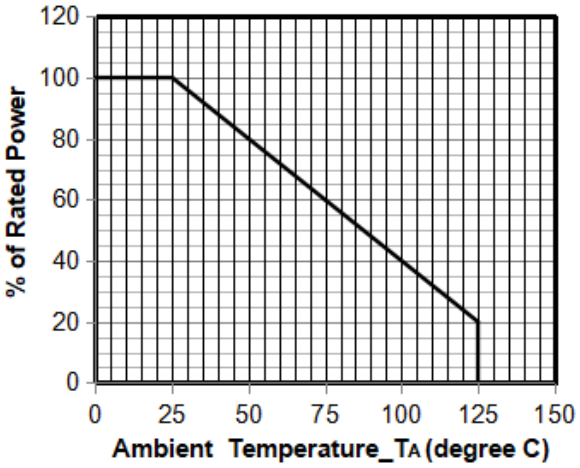
Junction Capacitance vs. Reverse Voltage



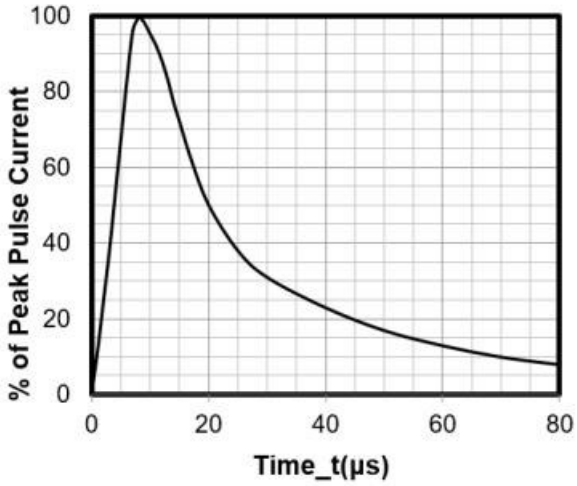
Peak Pulse Power vs. Pulse Time



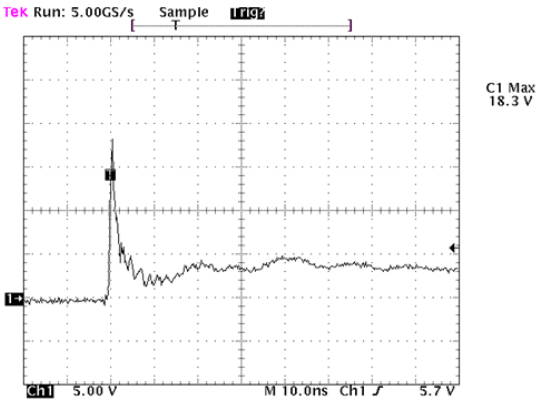
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



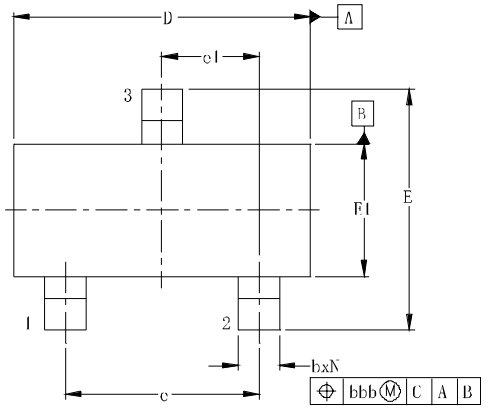
8 X 20μs Pulse Waveform

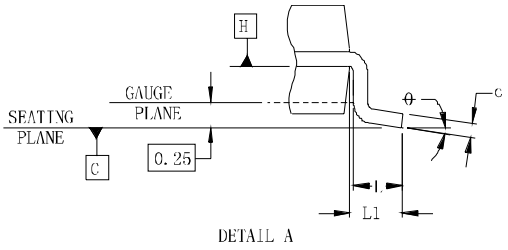


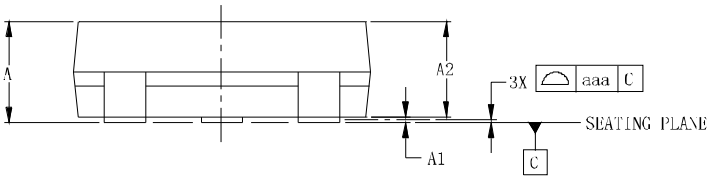
Note：Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000−4−2

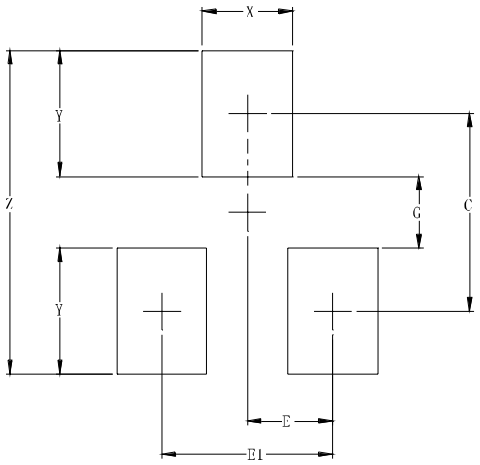






DIMENSIONS						
SYM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.035	-	0.045	0.89	-	1.15
A1	0.000	-	0.004	0.01	-	0.10
A2	0.035	0.037	0.040	0.88	0.95	1.02
b	0.012	-	0.020	0.30	-	0.51
c	0.003	-	0.007	0.08	-	0.18
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075			1.90BSC		
e1	0.037			0.95BSC		
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	0.022			0.55		
N	3			3		
θ	0°	-	8°	0°	-	8°
aaa	0.004			0.10		
bbb	0.008			0.20		

Suggested Land Pattern



DIMENSIONS		
SYM	INCHES	MILLIMETERS
C	0.087	2.20
E	0.037	0.95
E1	0.075	1.90
G	0.031	0.80
X	0.039	1.00
Y	0.055	1.40
Z	0.141	3.60