

1-Line Bi-directional TVS Diode

Description

The PESDRxx41D3 is a bi-direction TVS diode, to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The PESDRxx41D3 has a low capacitance with a typical value at 0.8pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 15\text{kV}$ air and $\pm 8\text{kV}$ contact discharged. It is assembled into a lead-free SOD-323 package. The small size, low capacitance and high ESD protection make PESDRxx41D3 an ideal choice to protect cellphone, digital video interfaces and other high speed ports.

Features

- 350W peak pulse power (8/20 μs)
- Ultra low capacitance: 0.8pF typical
- Ultra low leakage: nA level
- Low operating voltage: 3.3V, 5V, 8V, 12V, 15V, 24V
- Low clamping voltage
- Protects one power line or data line
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 15\text{kV}$
 - Contact discharge: $\pm 8\text{kV}$
 - IEC 61000-4-4 (EFT) 40A (5/50ns)
- RoHS Compliant

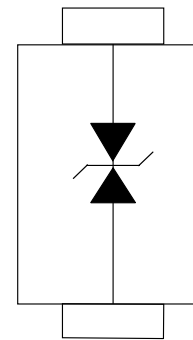
Mechanical Characteristics

- Package: SOD-323
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below

Applications

- Hand-Held Portable Applications
- Networking and Telecom(Ethernet 10/100/1000 Base T)
- USB Interface
- Automotive Electronics
- Serial and Parallel Ports
- Notebooks, Desktops, Servers

Dimensions and Pin Configuration



Circuit and Pin Schematic

Ordering Information

Part Number	Shipping	Reel Size
PESDRxx41D3	3000/Tape & Reel	7 inch

"xx" =Working Peak Reverse Voltage

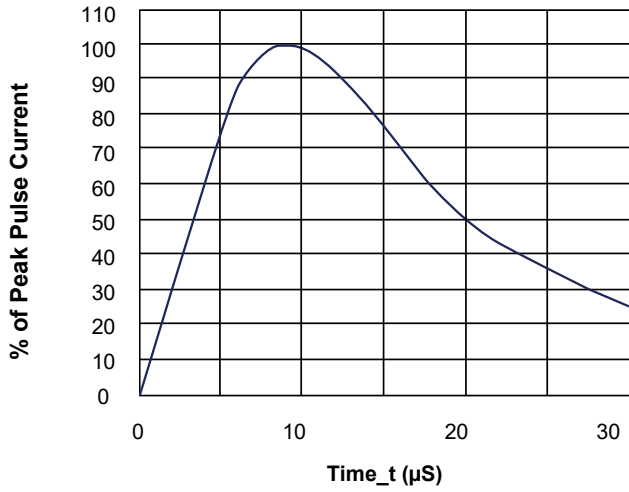
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{PK}	350	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±15	kV
ESD per IEC 61000-4-2 (Contact)		±8	kV
Operating Temperature Range	T _{OP}	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

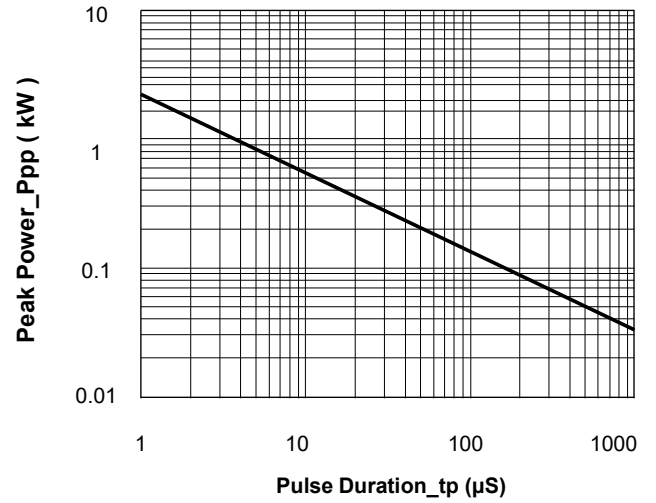
Electrical Characteristics (T_A=25°C unless otherwise specified)

Device	V _{RWM}	I _R @ V _{RWM}	V _{BR} @ 1mA	V _{C1}	I _{PP} @8/20μs	Capacitance		P _{PK}
			(Volts)	@1A	(Amps)	@V _R =0V, 1MHz (pF)		
	(V)	(uA)	Min	(V)	Max.	Typ	Max.	(W)
PESDR0341D3	3.30	5.0	4.00	7.50	20.0	0.8	1.5	350
PESDR0541D3	5.00	1.0	6.00	9.80	17.0	0.8	1.5	350
PESDR0841D3	8.00	1.0	8.50	13.6	15.0	0.8	1.5	350
PESDR1241D3	12.0	1.0	13.3	17.8	11.0	0.8	1.5	350
PESDR1541D3	15.0	1.0	16.7	23.5	10.0	0.8	1.5	350
PESDR2441D3	24.0	1.0	26.7	38.0	6.00	0.8	1.5	350

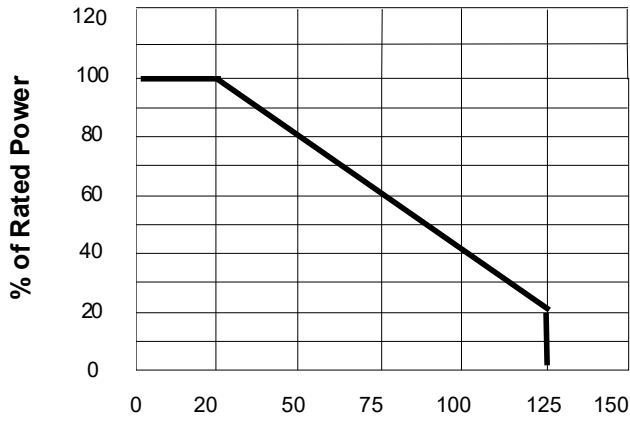
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



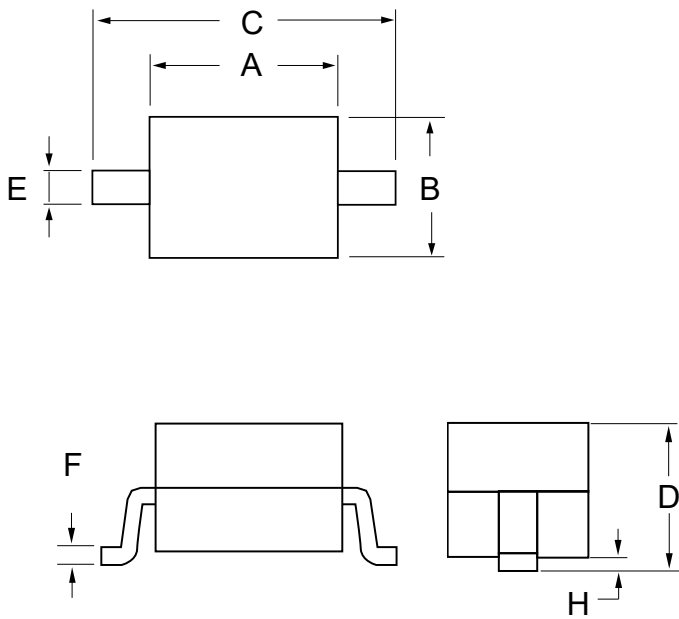
8/20μS Pulse Waveform



Peak Pulse Power vs. Pulse Time

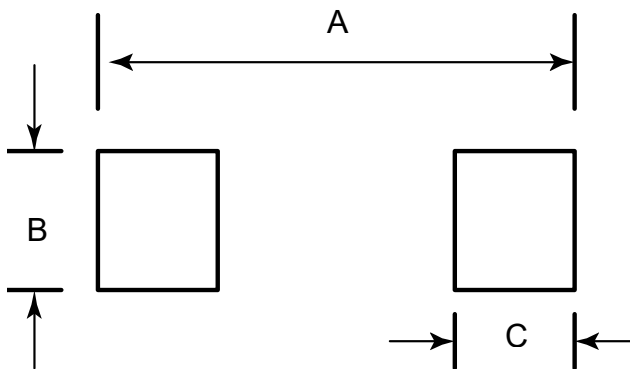


SOD-323 Package Outline Drawing



SYM	DIMENSIONS				
	MILLIMETERS			INCHES	
	MIN	NOM	MAX	MIN	MAX
A	1.50	1.65	1.80	0.060	0.071
B	1.20	1.30	1.40	0.045	0.054
C	2.30	2.50	2.70	0.090	0.107
D	-		1.10	-	0.043
E	0.30		0.40	0.012	0.016
F	0.10		0.25	0.004	0.010
H	-		0.10	-	0.004

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031