



1-Line Low Capacitance Bi-directional TVS Diode

Description

The WPE5V0D3ULA is a 5V bi-directional TVS diode. utilizing leading monolithic silicon technology to provide fast re-sponse time and low ESD clamping voltage, making this device an ideal solution for protecting sensitive high-speed lines. data WPE5V0D3ULA has a low capaci-tance with a typical value at 1pF, and complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into a lead-free SOD-323 package. The small size, low capacitance and high ESD surge protection make WPE5V0D3ULA an ideal choice to protect cell phone, wireless systems, and communication equipment.

Features

- 360W peak pulse power (8/20µs)
- Ultra low capacitance: 1pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Protects one power line or data line
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test

Air discharge: ±30kV Contact discharge: ±30kV

- IEC61000-4-5 (Lightning) 18A (8/20µs)

RoHS Compliant

Mechanical Characteristics

Package: SOD-323Lead Finish: Matte Tin

• Case Material: "Green" Molding Compound.

• Moisture Sensitivity: Level 3 per J-STD-020

Terminal Connections: See Diagram Below

Marking Information: See Below

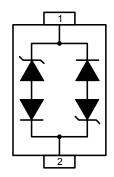
Applications

- USB Ports
- Smart Phones
- Wireless Systems
- Ethernet 10/100/1000 Base T

Marking Information



Dimensions and Pin Configuration



Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
WPE5V0D3ULA	3000	7 inch



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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20µs)	Ppk	360	W
Peak Pulse Current (8/20µs)	IPP	18	А
ESD per IEC 61000-4-2 (Air)	Vrop	±30	141
ESD per IEC 61000-4-2 (Contact)	VESD	±30	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

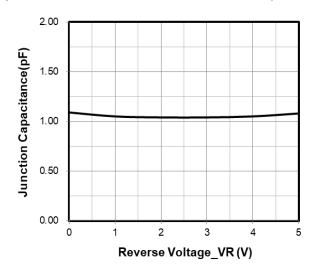
Parameter	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	
Breakdown Voltage	VBR	6			V	IT = 1mA
Reverse Leakage Current	I _R			0.2	μA	VRWM = 5V
Clamping Voltage	Vc			10	V	IPP = 1A (8 x 20μs pulse)
Clamping Voltage	Vc			20	V	IPP = 18A (8 x 20µs pulse)
Junction Capacitance	Cı		8.0	1.5	pF	VR = 0V, f = 1MHz





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

100

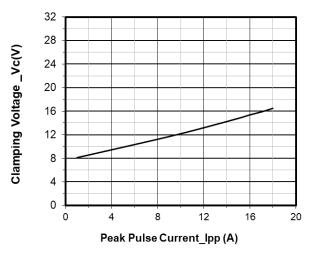


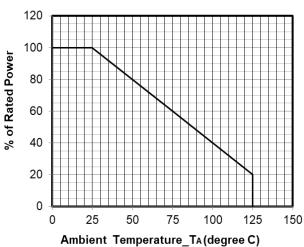
0.01 1 10 100

Pulse Duration_tp(µs)

Junction Capacitance vs. Reverse Voltage

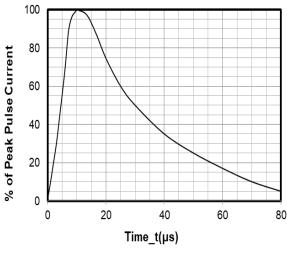
Peak Pulse Power vs. Pulse Time

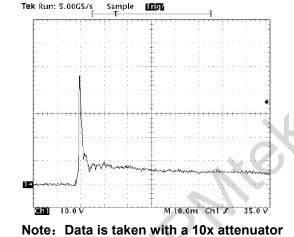




Clamping Voltage vs. Peak Pulse Current

Power Derating Curve





ESD 8 X 20µs Pulse Waveform 8 kV Con

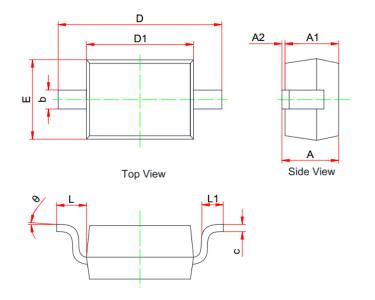
ESD Clamping Voltage 8 kV Contact per IEC61000-4-2



WPE5V0D3ULA

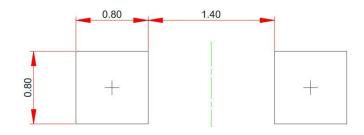
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SOD-323 Package Outline Drawing



	MILLIMETERS				
SYM	MIN	NOM	MAX		
Α	0.800		1.100		
A1	0.800		0.900		
A2	0.000		0.100		
b	0.250		0.400		
С	0.080		0.177		
D1	1.600	1.700	1.800		
D	2.300		2.800		
Е	1.150		1.400		
L	0.475REF				
L1	0.100		0.500		
Θ	0°		8°		

Suggested Land Pattern



Unit: mm

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