

5-Line Uni-direction TVS Diode Array

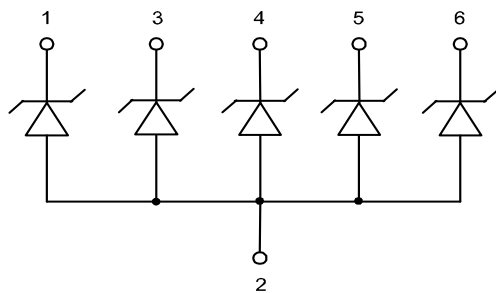
Description

The PESDU0505S56 is a TVS array, to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive portable electronics. The PESDU0505S56 complies with the IEC 61000- 4-2 (ESD) with $\pm 15\text{kV}$ air and $\pm 8\text{kV}$ contact discharge. It is assembled into a 6-lead SOT-563 lead-free package. The leads are finished with lead-free matte tin. Each device will protect up to 5 lines.

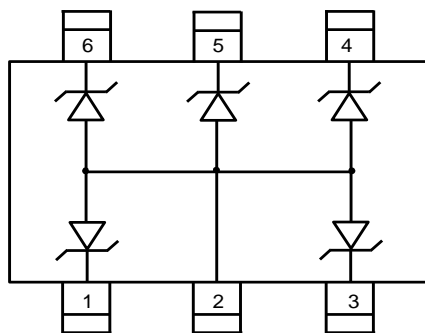
Features

- Working voltages : 5V
- Low leakage current
- Protects up to 5 lines
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 15\text{kV}$
 - Contact discharge: $\pm 8\text{kV}$
 - IEC61000-4-5 (Lightning) 3A (8/20 μs)
- RoHS Compliant

Dimensions and Pin Configuration



Circuit Schematic



Pin Schematic

Mechanical Characteristics

- Package: SOT-563
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below

Applications

- Cellular Handsets and Accessories
- Cordless Phones
- Personal Digital Assistants (PDA's)
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- MP3 Players

Ordering Information

Part Number	Shipping	Reel Size
PESDU0505S56	3000/Tape & Reel	7 inch

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

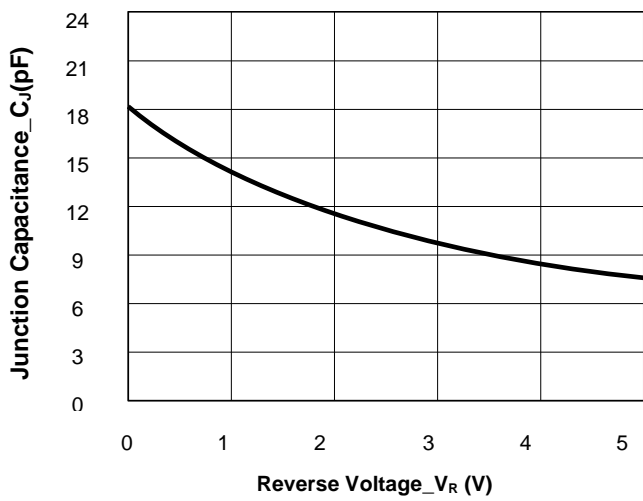
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	PPK	40	W
Peak Pulse Current (8/20 μs)	I _{PP}	3	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 15	kV
ESD per IEC 61000-4-2 (Contact)		± 8	
Operating Temperature Range	T _{OP}	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{STG}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

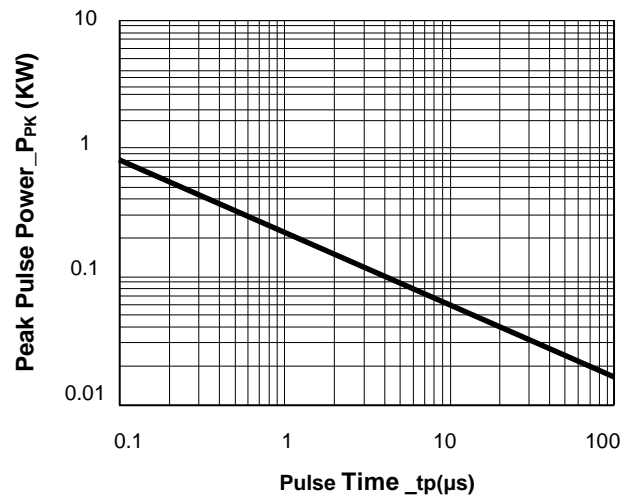
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5	V	Any I/O pin to ground
Breakdown Voltage	V _{BR}	6			V	I _T = 1mA, any I/O pin to ground
Reverse Leakage Current	I _R		0.05	0.5	μA	V _{RWM} = 5V, any I/O pin to ground
Diode Forward Voltage	V _F		0.85	1.2	V	I _F = 15mA
Clamping Voltage	V _C			9	V	I _{PP} = 1A (8/20 μs pulse), any I/O pin to ground
Clamping Voltage	V _C			12	V	I _{PP} = 3A (8/20 μs pulse), any I/O pin to ground
Junction Capacitance	C _J		17	20	pF	V _R = 0V, f = 1MHz

Note 1: I/O pins are Pin 1, 3, 4 and 6

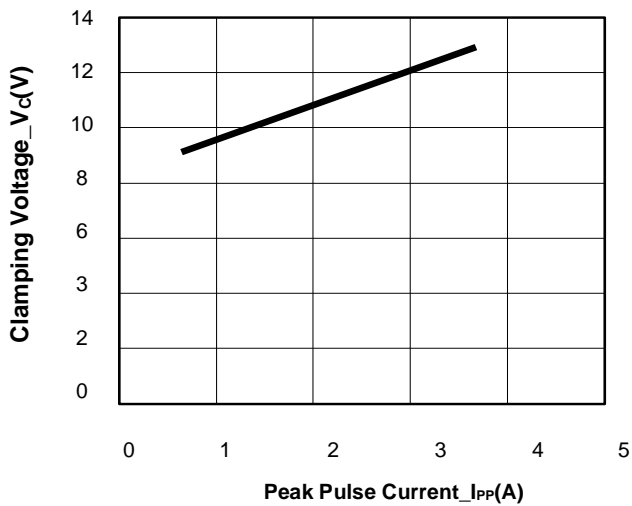
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



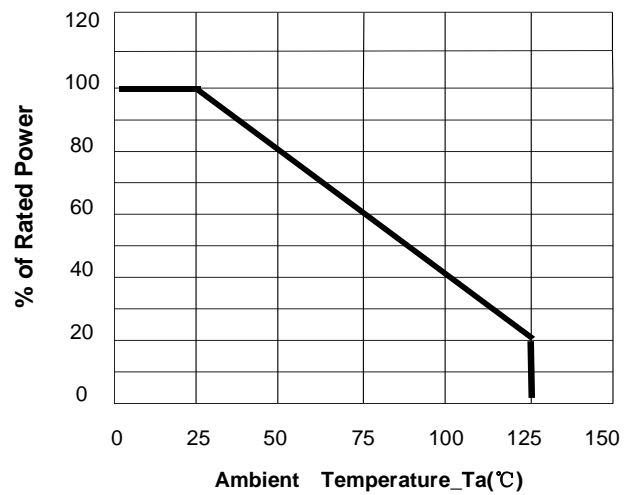
Junction Capacitance vs. Reverse Voltage



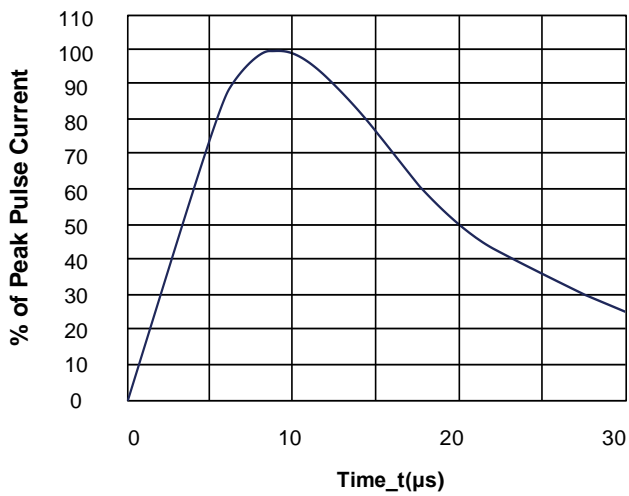
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

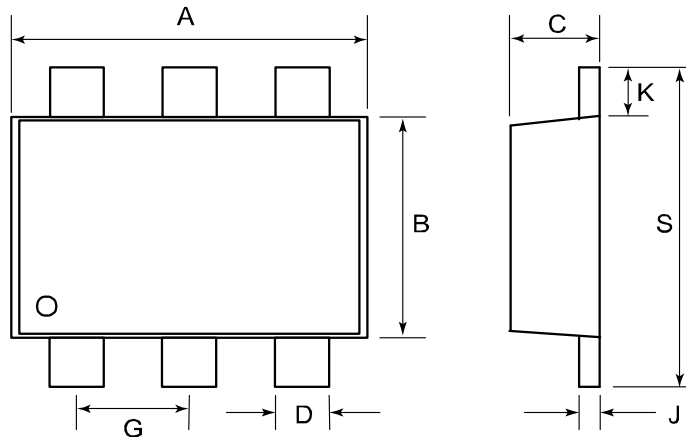


Power Derating Curve



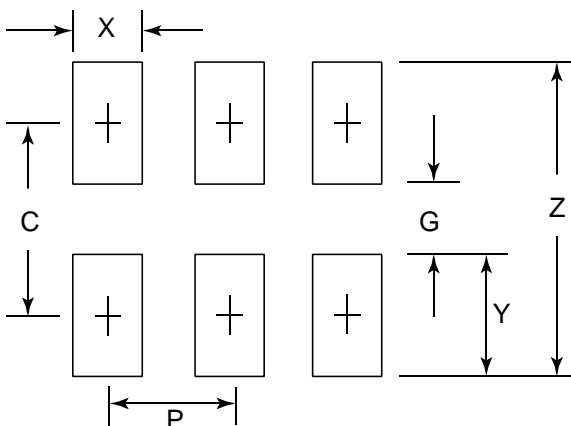
8/20 μ s Pulse Waveform

SOT-563 Package Outline Drawing



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.5	1.7	0.059	0.067
B	1.1	1.3	0.043	0.051
C	0.5	0.6	0.020	0.024
D	0.17	0.27	0.007	0.011
G	0.50 BSC		0.020 BSC	
J	0.08	0.18	0.003	0.007
K	0.10	0.3	0.004	0.012
S	1.50	1.70	0.059	0.067

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	1.35	0.0531
G	0.90	0.0354
P	0.50	0.0197
X	0.30	0.0118
Y	0.45	0.0177
Z	1.80	0.0709