

Bidirectional TVS Diodes

DESCRIPTION

The ESD3Z7.0C is a 7V bi-directional TVS diode,utilizing leadingmonolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line.The ESD3Z7.0C complies with the IEC 61000-4-2 (ESD) with ± 30 kV air and ± 30 kV contact discharge. The small size and high ESD surge protection make ESD3Z7.0C an ideal choice to protect cell phone,digital cameras,audioplayers andmany other portable applications.

FEATURES

- ◆Protects one data or power line
- ◆Ultra low leakage: nA level
- ◆Operating voltage: 7V
- ◆Low clamping voltage
- ◆2-pin leadless package
- ◆Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ± 30 kV
 - Contact discharge: ± 30 kV
 - IEC61000-4-5 (Lightning) 20A (8/20 μ s)

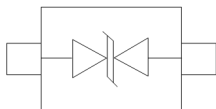
MECHANICAL CHARACTERISTICS

- ◆Case: SOD-323
- ◆Case Material: “Green” Molding Compound.
- ◆Terminal Connections: See Diagram Below
- ◆Marking Information: See Below

APPLICATIONS

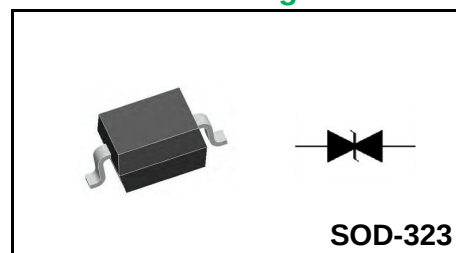
- ◆Cellular Handsets and Accessories
- ◆Personal Digital Assistants
- ◆Notebooks and Handhelds
- ◆Portable Instrumentation
- ◆Digital Cameras
- ◆Peripherals
- ◆Audio Players

Dimensions and Pin Configuration



Circuit and Pin Schematic

Pinning



Marking Code

ESD3Z7.0C	2C
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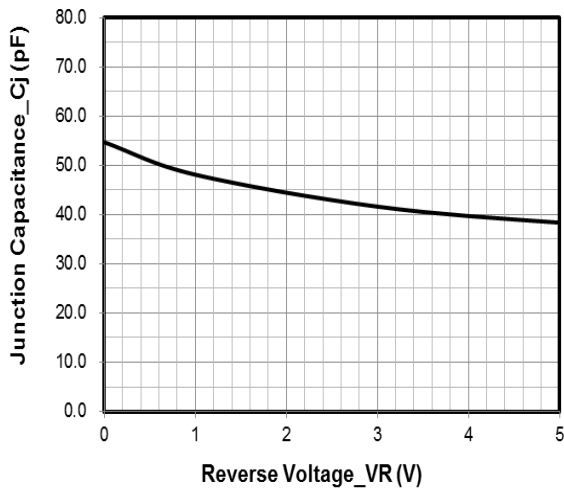
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{pk}	300	W
Peak Pulse Current (8/20μs)	I _{pp}	20	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	±30 ±30	kV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

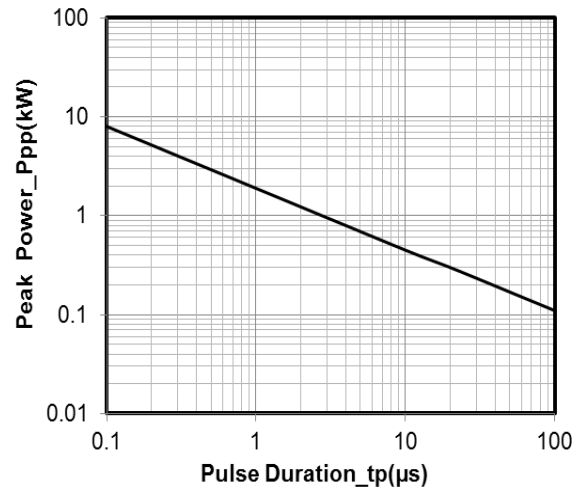
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			7	V	
Breakdown Voltage	V _{BR}	7.5			V	I _T = 1mA
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 7V
Clamping Voltage	V _C			10	V	I _{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V _C			15	V	I _{PP} = 20A (8 x 20μs pulse)
Junction Capacitance	C _J			60	pF	V _R = 0V, f = 1MHz

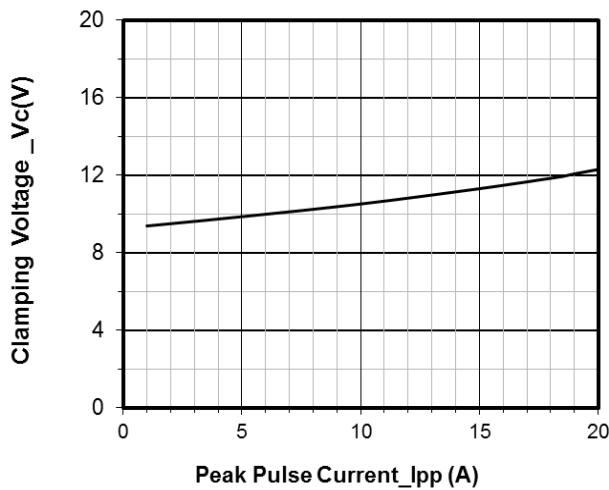
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



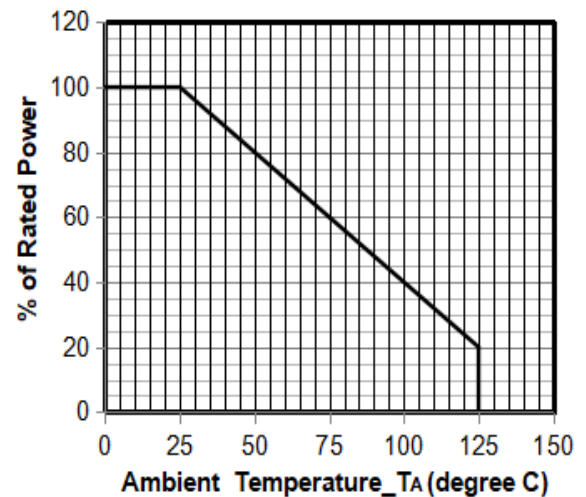
Junction Capacitance vs. Reverse Voltage



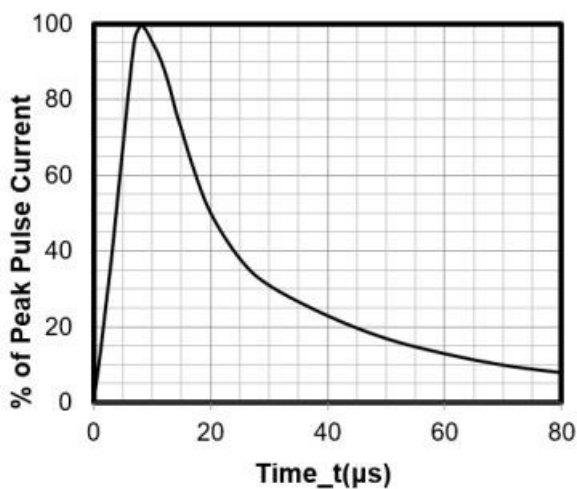
Peak Pulse Power vs. Pulse Time



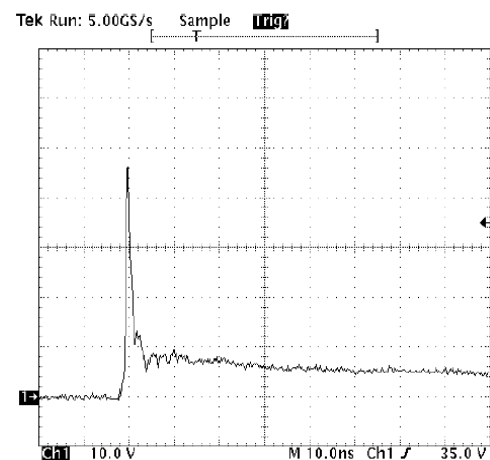
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20 μs Pulse Waveform



Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

Ordering information

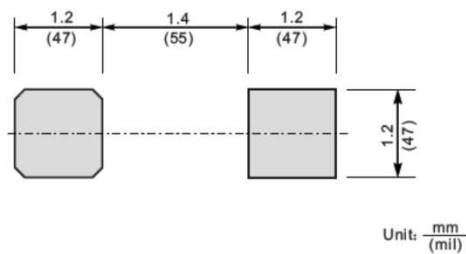
Package	Packing Description	Packing Quantity
SOD-323	Tape/Reel, 7" reel	3000PCS/Reel 120000PCS/Carton

Package Dimensions

SOD-323

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	0.8	1.1	32	43
C	0.08	0.15	3.1	5.9
D	1.2	1.4	47	55
E	1.4	1.8	63	70
E1	2.55	2.75	100	108
b	0.25	0.4	9.8	16
L1	0.2	0.45	7.9	16
A1	-	0.2	-	8
∠	9°			

The recommended mounting pad size



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