

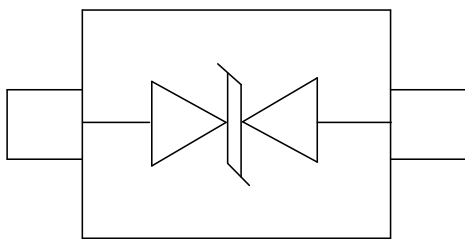
Description

The DC3321D7 is a 3.3V bi-directional ESD protection diode, utilizing leading monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The DC3321D7 complies with the IEC 61000-4-2 (ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small SOD-723 lead-free package. The small size and high ESD surge protection make DC3321D7 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Mechanical Characteristics

- ◆ Package: SOD-723
- ◆ Lead 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

Dimensions and Pin Configuration



Circuit and Pin Schematic

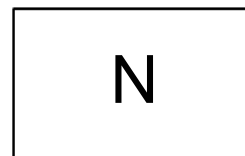
Features

- ◆ Protects one data or power line
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 3.3V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 8A (8/20 μs)
- ◆ RoHS Compliant

Applications

- ◆ Cellular Handsets and Accessories
- ◆ Personal Digital Assistants
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ Peripherals
- ◆ Audio Players
- ◆ Keypads, Side Keys, LCD Displays

Marking Information



Ordering Information

Part Number	Marking	Packaging	Reel Size
DC3321D7	N	8000/Tape & Reel	7 inch

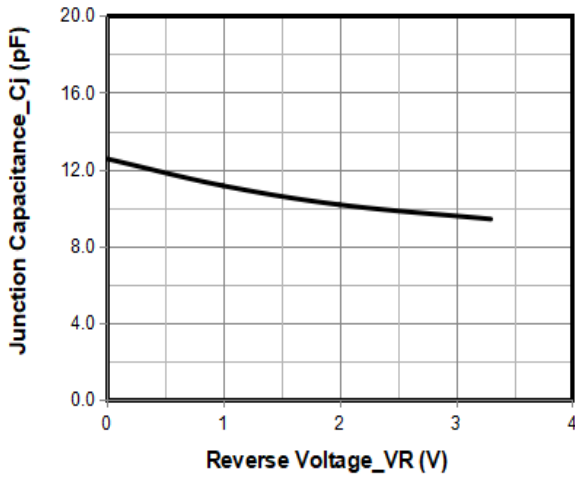
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	80	W
Peak Pulse Current (8/20 μs)	IPP	8	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

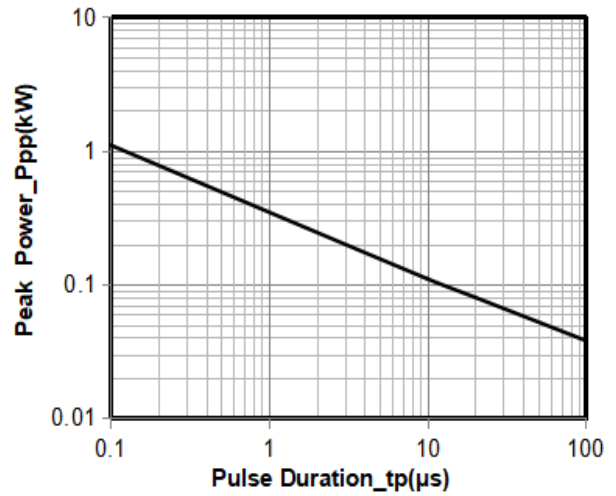
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			3.3	V	
Punch-Through Voltage	VPT	3.5			V	$I_T = 2\mu\text{A}$
Snap-Back Voltage	VSB	3.5			V	$I_T = 50\text{mA}$
Reverse Leakage Current	I_R		0.01	0.2	μA	$V_{RWM} = 3.3\text{V}$
Clamping Voltage	VC			6	V	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)
				8	V	$I_{PP} = 5\text{A}$ (8 x 20 μs pulse)
				10	V	$I_{PP} = 8\text{A}$ (8 x 20 μs pulse)
Junction Capacitance	CJ		12.5	25	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

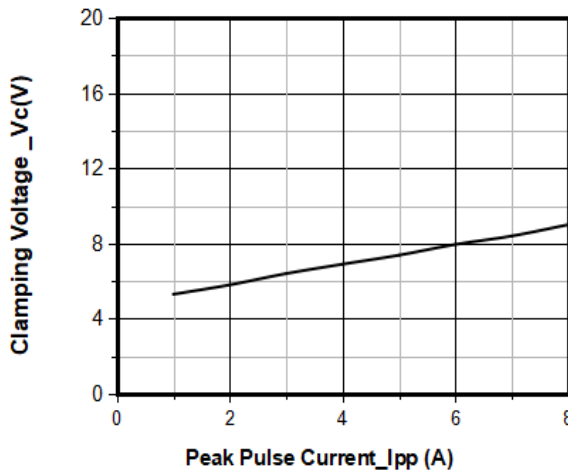
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



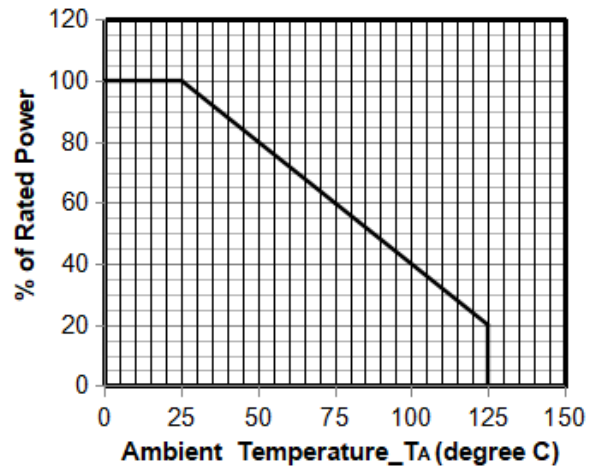
Junction Capacitance vs. Reverse Voltage



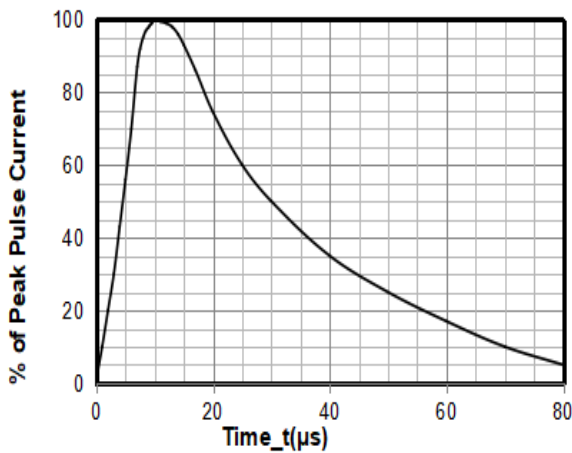
Peak Pulse Power vs. Pulse Time



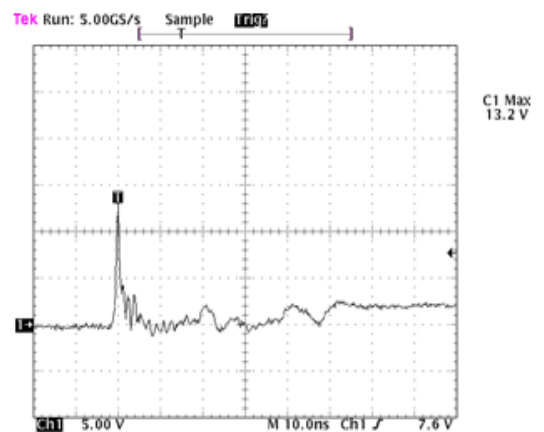
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

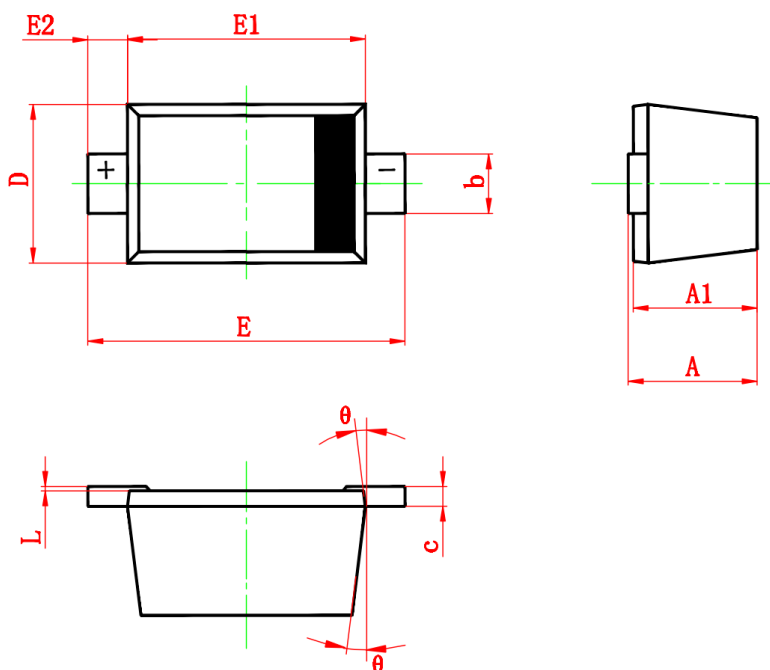


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

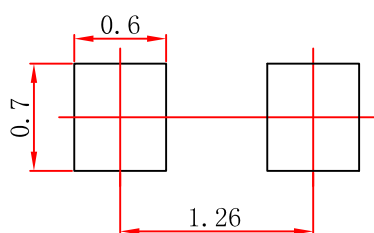
8 kV Contact per IEC61000-4-2

SOD-723 Package Outline Drawing



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.525	0.650	0.021	0.026
A1	0.510	0.610	0.020	0.024
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.550	0.650	0.022	0.026
E	1.300	1.500	0.051	0.059
E1	0.900	1.100	0.035	0.043
E2	0.200 REF.		0.008 REF.	
L	0.000	0.070	0.000	0.003
θ	7° REF.		7° REF.	

Suggested Land Pattern



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

Contact Information

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