

Description

The DCSD12C-L is a 12V bi-directional TVS diode, utilizing leading monolithic 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 DCSD12C-L complies with the IEC 61000-4-2 (ESD) standard with ± 25 kV air and ± 20 kV contact discharge. It is assembled into an ultra-small lead-free SOD-323 package. The small size and high ESD surge protection make DCSD12C-L an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- ◆ 120W peak pulse power (8/20 μ s)
- ◆ Protects one data or power line
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 12V
- ◆ Low clamping voltage
- ◆ 2-pin leadless package
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: ± 25 kV
Contact discharge: ± 20 kV
 - IEC61000-4-5 (Lightning) 6A (8/20 μ s)
- ◆ RoHS Compliant

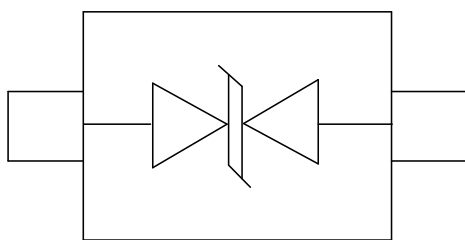
Mechanical Characteristics

- ◆ Package: SOD-323
- ◆ Case Material: "Green" Molding Compound.
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ 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

Marking Information



12L = Device Marking Code

Ordering Information

Part Number	Marking	Packaging	Reel Size
DCSD12C-L	12L	3000/Tape & Reel	7 inch

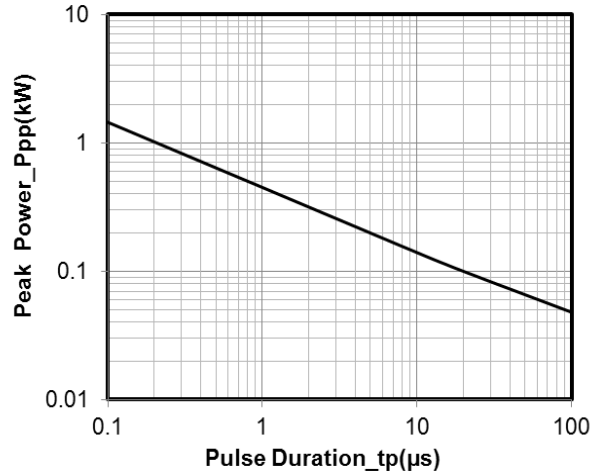
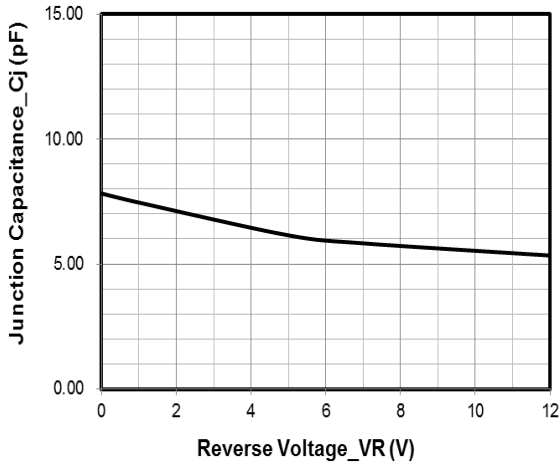
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20 μs)	Ppk	120	W
Peak Pulse Current(8/20 μs)	I _{PP}	6	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Temperature Range	T _J	-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)

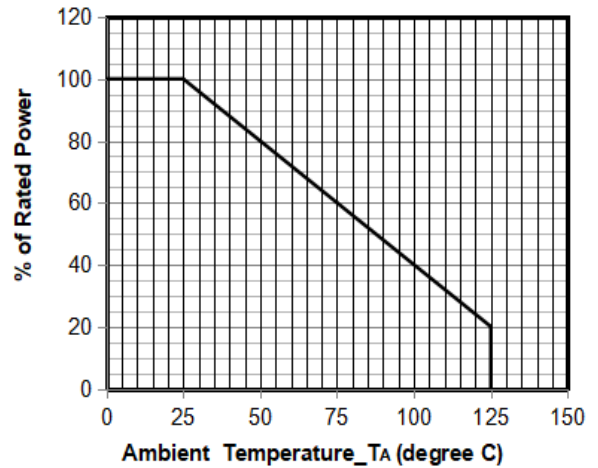
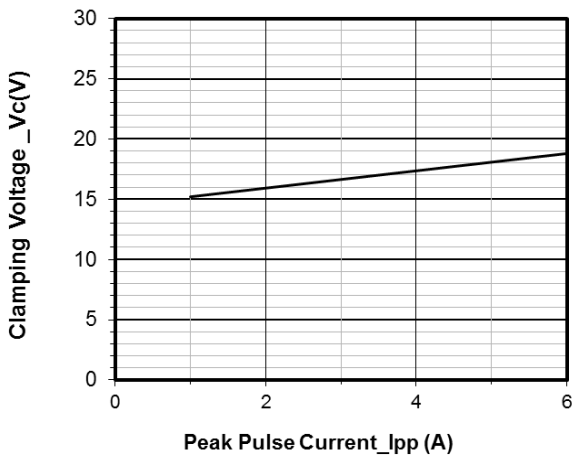
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			12	V	
Breakdown Voltage	V _{BR}	13.3			V	I _T = 1mA
Reverse Leakage Current	I _R			0.2	μA	V _{RWM} = 12V
Clamping Voltage	V _C			16	V	I _{PP} = 1A (8 x 20 μs pulse)
Clamping Voltage	V _C			20	V	I _{PP} = 6A (8 x 20 μs pulse)
Junction Capacitance	C _J		7.5	15	pF	V _R = 0V, f = 1MHz

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



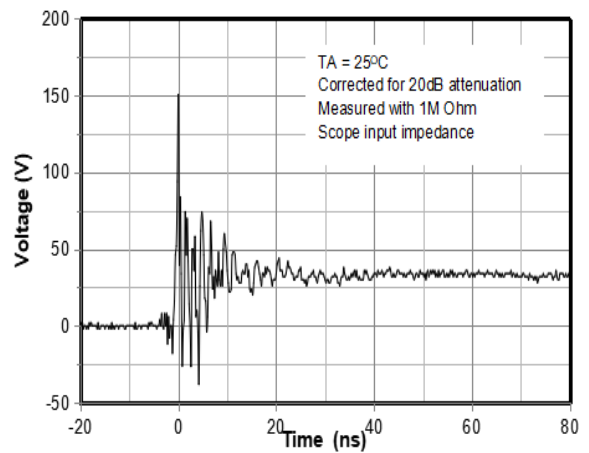
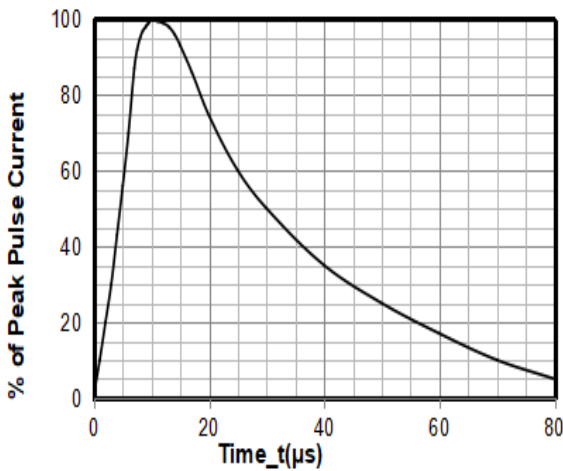
Junction Capacitance vs. Reverse Voltage

Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

Power Derating Curve

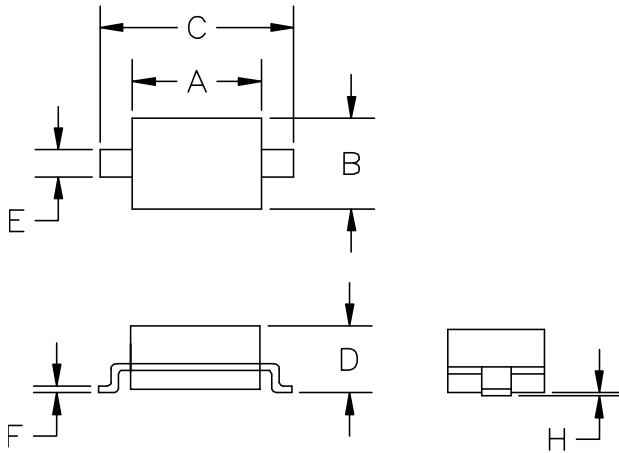


8 X 20µs Pulse Waveform

ESD Clamping Voltage

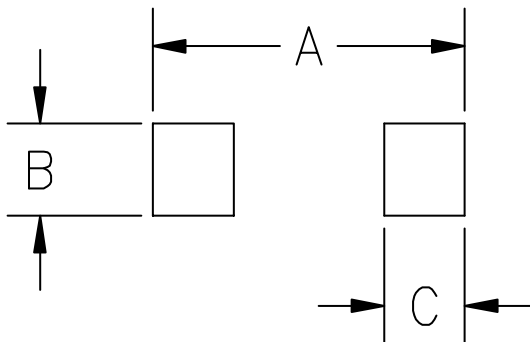
8 kV Contact per IEC61000-4-2

SOD-323 Package Outline Drawing



SYM	DIMENSIO			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.80	0.060	0.071
B	1.20	1.40	0.045	0.054
C	2.30	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

Contact Information

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