Description

The DCSD33CL is a 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 DCSD33CL complies with the IEC 61000-4-2 (ESD) with ± 30kV air and ± 30kV contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make DCSD33CL an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- 300W peak pulse power (8/20μs)
- Protects one data line
- Ultra low leakage：nA level
- Operating voltage：3.3V
- Ultra low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
  - – IEC61000-4-5 (Lightning) 30A (8/20μs)
- RoHS Compliant

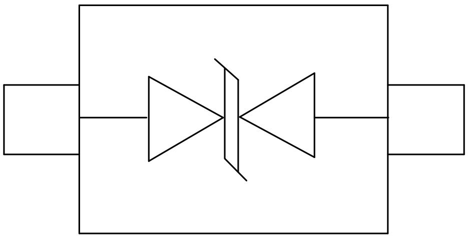
Mechanical Characteristics

- 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

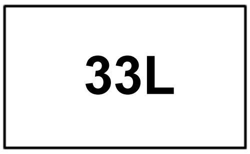
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Computer Interfaces Protection
- Control Signal Lines Protection
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Dimensions and Pin Configuration



Circuit and Pin Schematic

Marking Information



33L=Device Marking Code

Ordering Information

Part Number	Marking	Packaging	Reel Size
DCSD33CL	33L	3000/Tape & Reel	7 inch

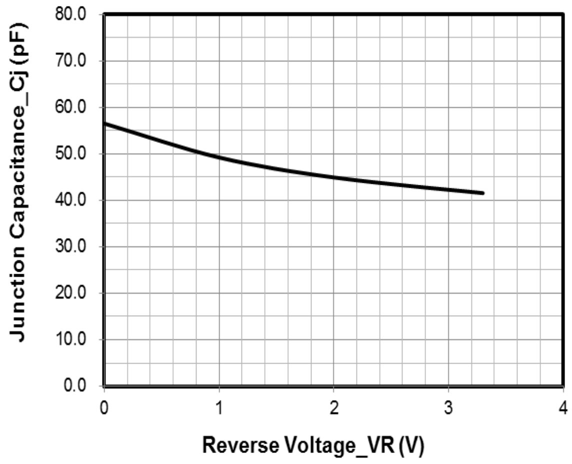
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	**Symbol**	**Value**	**Unit**
Peak Pulse Power (8/20μs)	Ppk	300	W
Peak Pulse Current (8/20μs)	Ipp	30	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	Tstg	−55 to +150	°C

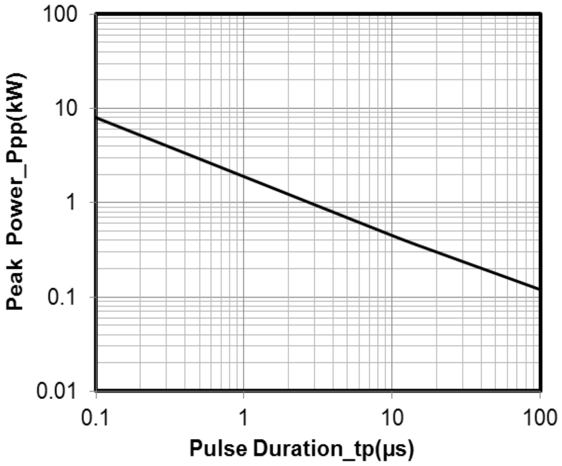
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	**Symbol**	**Min**	**Typ**	**Max**	**Unit**	**Test Condition**
Reverse Working Voltage	V_{RWM}			3.3	V	
Punch-Through Voltage	V_{PT}	3.5			V	I_T = 2μA
Snap-Back Voltage	V_{SB}	2.8			V	I_T = 50mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 3.3V
Clamping Voltage	V_C			5.5	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			10.0	V	I_{PP} = 30A (8 x 20μs pulse)
Junction Capacitance	C_J		56		pF	VR = 0V, f = 1MHz

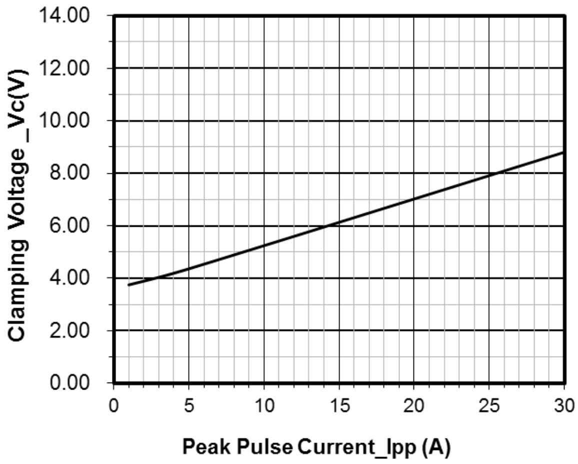
Typical Performance Characteristics (TA=25℃ unless otherwise Specified)



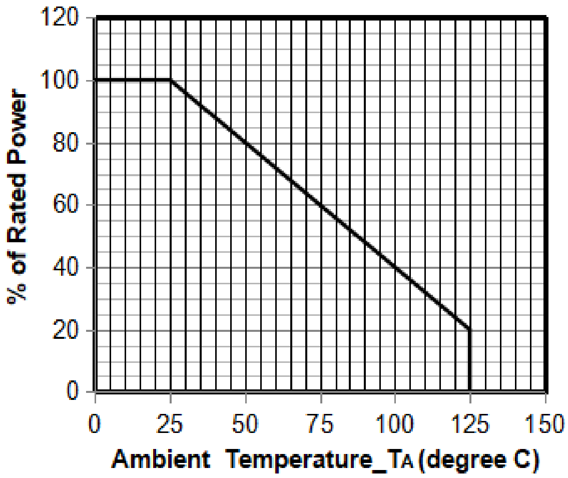
Junction Capacitance vs. Reverse Voltage



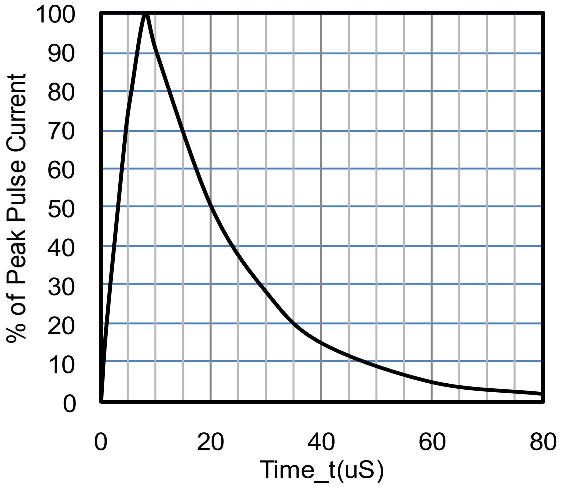
Peak Pulse Power vs. Pulse Time



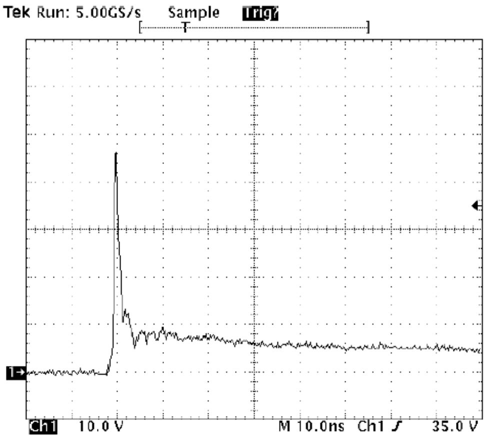
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

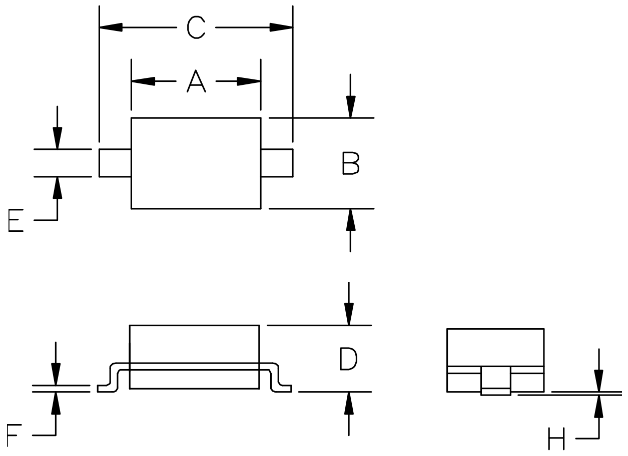


Note：Data is taken with a 10x attenuator

ESD Clamping Voltage

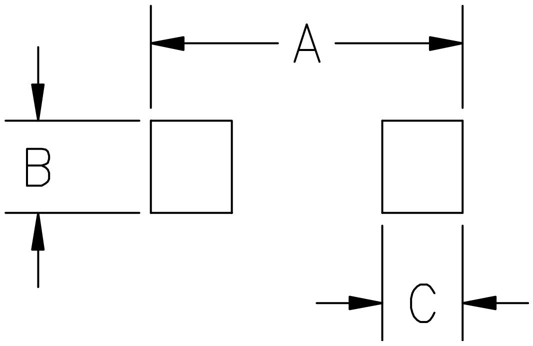
8 kV Contact per IEC61000−4−2

SOD-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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