

### Description

The DLLC15I is a 15V uni-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 high-speed data lines. The DLLC15I has a low capacitance with a typical value at 1pF, and 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 a lead-free SOD-323 package. The small size, low capacitance and high ESD surge protection make DLLC15I an ideal choice to protect cell phone, wireless systems, and communication equipment.

### Mechanical Characteristics

- ◆ Package: SOD-323
- ◆ 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

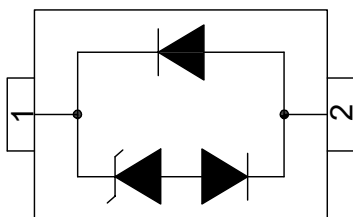
### Features

- ◆ 280W peak pulse power (8/20 $\mu\text{s}$ )
- ◆ Ultra low capacitance : 1.0pF typical
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 15V
- ◆ Low clamping voltage
- ◆ Protects one power line or data line
- ◆ 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) 10A (8/20 $\mu\text{s}$ )
- ◆ RoHS Compliant

### Applications

- ◆ USB Ports
- ◆ Smart Phones
- ◆ Wireless Systems
- ◆ Ethernet 10/100/1000 Base T

### Dimensions and Pin Configuration



Circuit and Pin Schematic

### Marking Information



E= Device Marking Code

### Ordering Information

Part Number	Marking	Packaging	Reel Size
DLLC15I	E	3000/Tape & Reel	7 inch

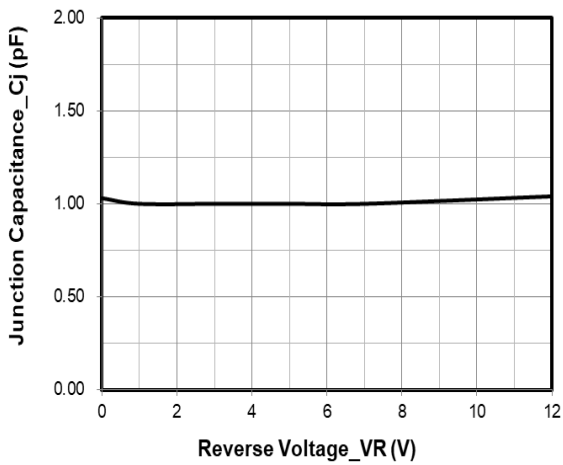
### **Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	350	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	Ipp	10	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

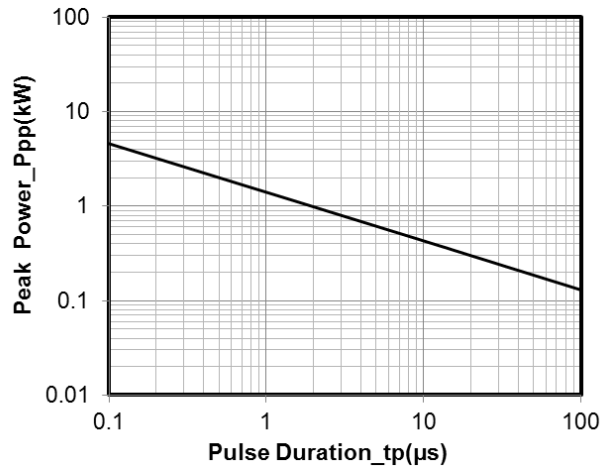
### **Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			15	V	
Breakdown Voltage	VBR	16.7			V	IT = 1mA
Reverse Leakage Current	IR			100	nA	VRWM = 15V
Clamping Voltage	VC			21	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	VC			28	V	I <sub>PP</sub> = 7A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	VC			35	V	I <sub>PP</sub> = 10A (8 x 20 $\mu\text{s}$ pulse)
Peak Pulse Current	I <sub>PP</sub>			10	A	tp=8/20 $\mu\text{s}$
Junction Capacitance	CJ		1.0		pF	VR = 0V, f = 1MHz

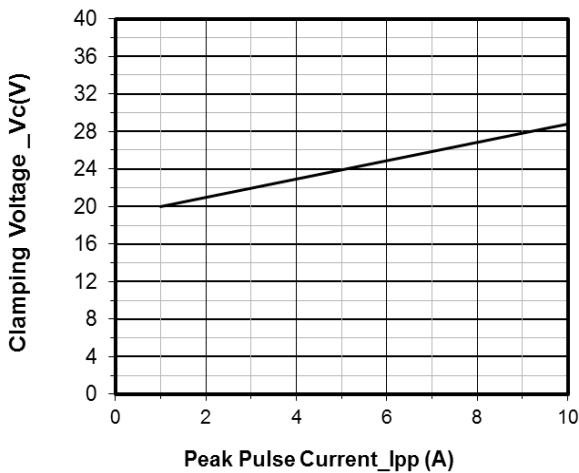
**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**



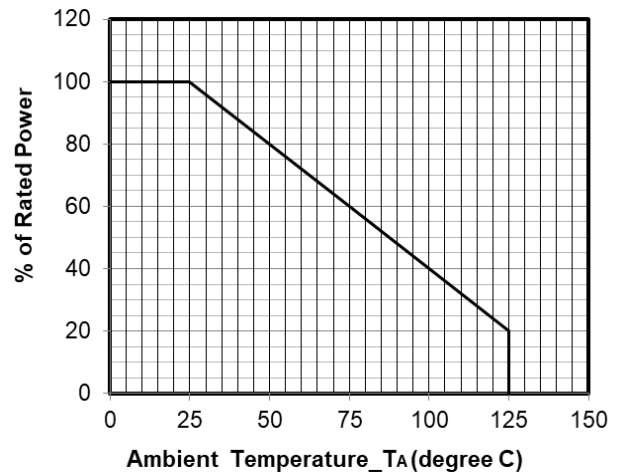
**Junction Capacitance vs. Reverse Voltage**



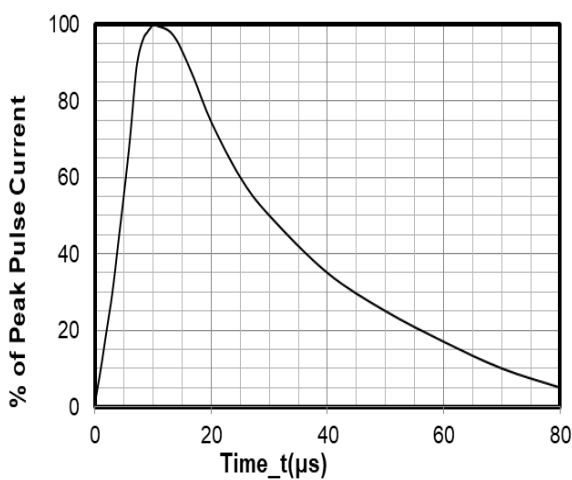
**Peak Pulse Power vs. Pulse Time**



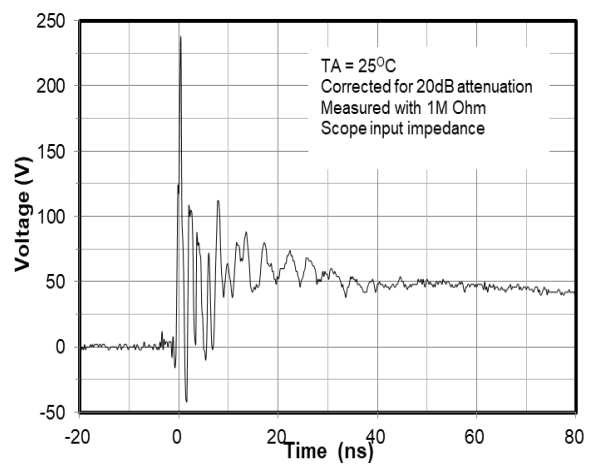
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**



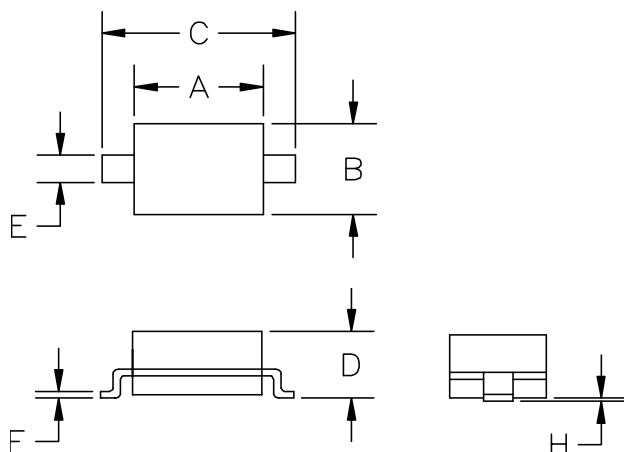
**8 X 20μs Pulse Waveform**



**ESD Clamping Voltage**

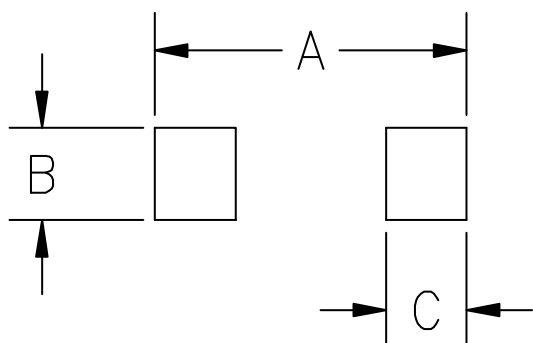
**8 kV Contact per IEC61000-4-2**

## SOD-323 Package Outline Drawing



SYM	DIMENSIONS			
	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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