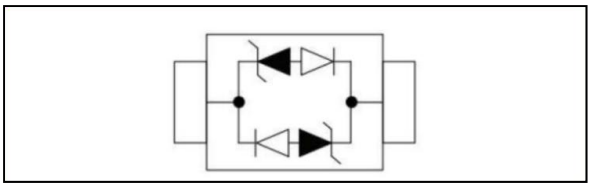
ESDLC12VBOD

Description

ESDLC12VBOD 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 high-speed data lines. The DLLC12CI has a low capacitance with a typical value at 1pF,and complies with the IEC 61000-4-2 (ESD) standard with ±30kV air and ±30kV contact discharge. It is assembled into a lead-free SOD-323 package. The small size, low capacitance and high ESD surge protection make DLLC12CI an ideal choice to protect cell phone, wireless systems, and communication equipment.

Functional Diagram



Features

- Ultra low capacitance ： 1.0pF typical
- Ultra low leakage：nA level
- Low Operating：12V
- Protects one power line or data line
- 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)
- RoHS Compliant

Applications

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

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

Parameter	Symbol	Value	Unit
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−40 to +85	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Dated:10/2019
Rev: 1.0

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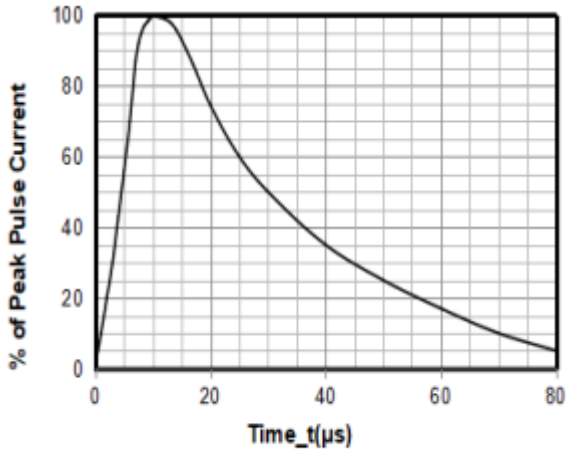
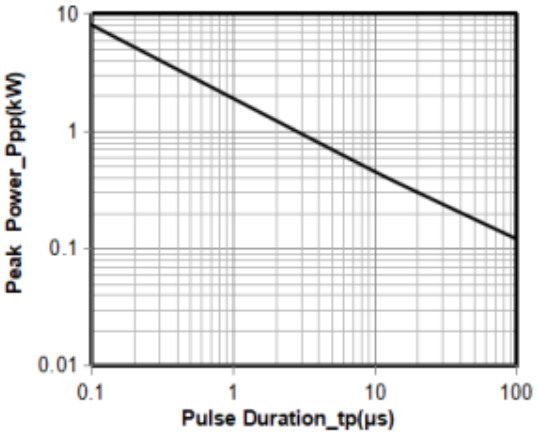
Electrical Characteristics (TA = 25 °C unless otherwise noted)

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		<1	100	nA	V_{RWM} = 12V
Clamping Voltage	V_C			18	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			23	V	I_{PP} = 5A (8 x 20μs pulse)
Clamping Voltage	V_C			27	V	I_{PP} = 8A (8 x 20μs pulse)
Peak Pulse Current	I_{PP}			8	A	tp=8/20μs
Junction Capacitance	C_J		1.0		pF	VR = 0V, f = 1MHz

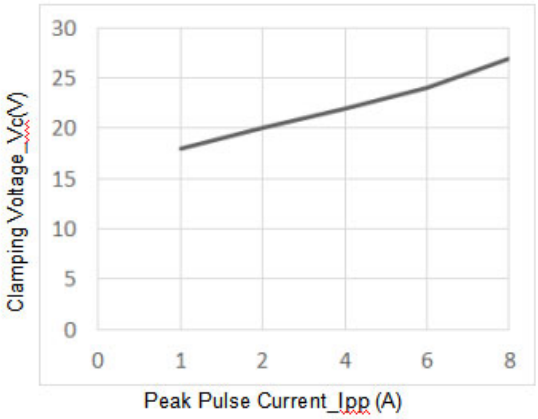
Characteristics Curves



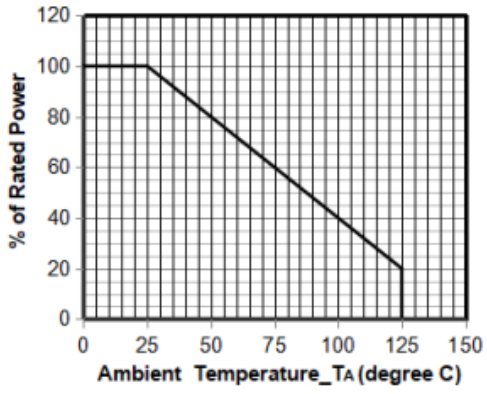
8 X 20μs Pulse Waveform



Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power Derating Curve

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Rev: 1.0

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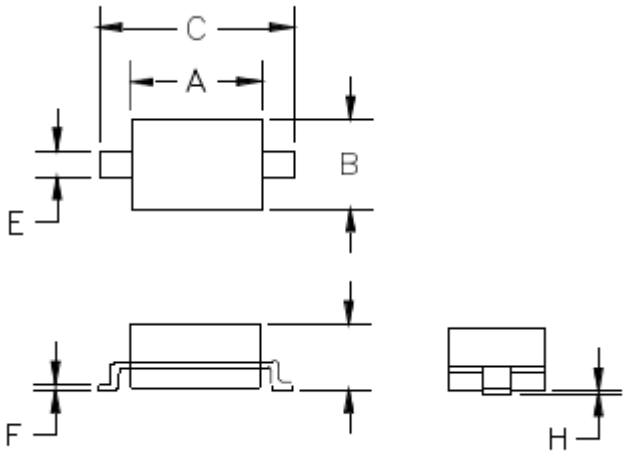
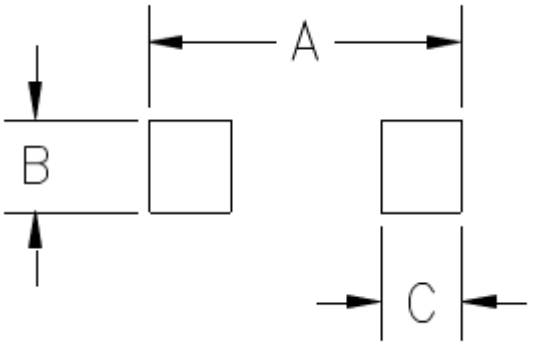
ACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOD323



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

Mounting Pad Layout



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual deviceperformance may vary over time.

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