

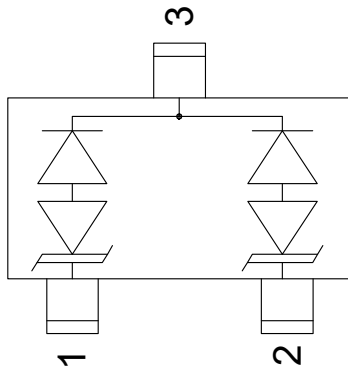
Description

The DJDLC05 is an 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 DJDLC05 has an ultra-low capacitance with a typical value at 1.0pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a lead-free SOT-23 package. The small size, ultra-low capacitance and high ESD surge protection make DJDLC05 an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

Mechanical Characteristics

- ◆ Package: SOT-23
- ◆ 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 Diagram

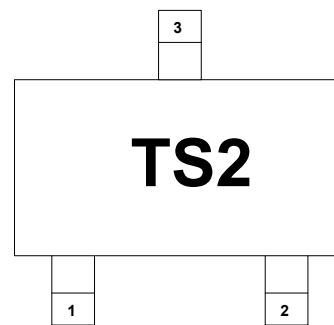
Features

- ◆ Ultra low capacitance: 1.0pF typical
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 5V
- ◆ Low clamping voltage
- ◆ Up to 2-line protects
- ◆ 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) 18A (8/20 μs)
- ◆ RoHS Compliant

Applications

- ◆ Cellular Handsets and Accessories
- ◆ Display Ports
- ◆ MDDI Ports
- ◆ USB 2.0 and 3.0 Ports
- ◆ HDMI 1.3 and 1.4
- ◆ Digital Visual Interface (DVI)
- ◆ PCI Express and Serial SATA Ports
- ◆ Notebook Computer

Marking Information



TS2= Device Marking Code

Ordering Information

Part Number	Marking	Packaging	Reel Size
DJDLC05	TS2	3000/Tape & Reel	7 inch

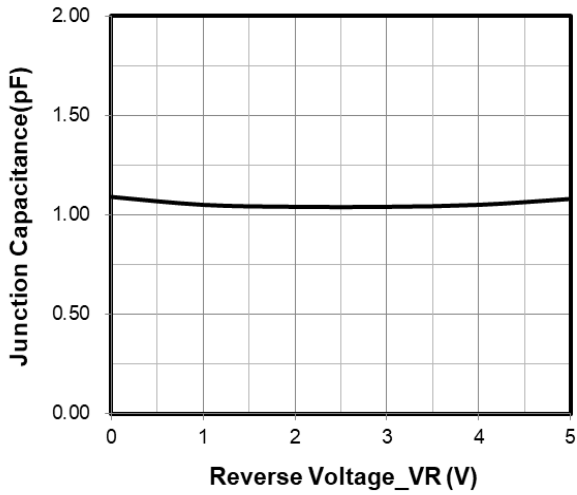
Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Operating Temperature Range	TJ	-40 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

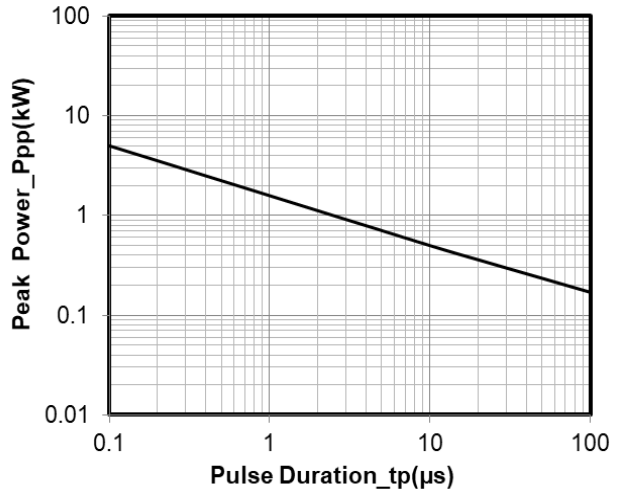
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	
Breakdown Voltage	VBR	6			V	IT = 1mA
Reverse Leakage Current	IR			100	nA	VRWM = 5V
Clamping Voltage	VC			10	V	I _{PP} = 1A (8 x 20µs pulse)
Clamping Voltage	VC			13	V	I _{PP} = 10A (8 x 20µs pulse)
Clamping Voltage	VC			20	V	I _{PP} = 18A (8 x 20µs pulse)
Peak Pulse Current	I _{PP}			18	A	tp=8/20µs
Junction Capacitance	CJ		1.0		pF	VR = 0V, f = 1MHz

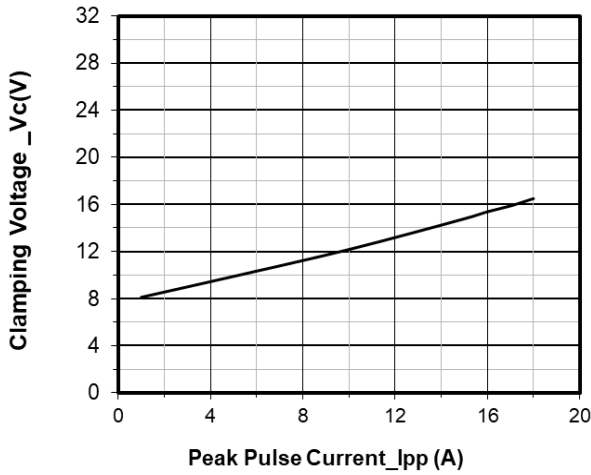
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



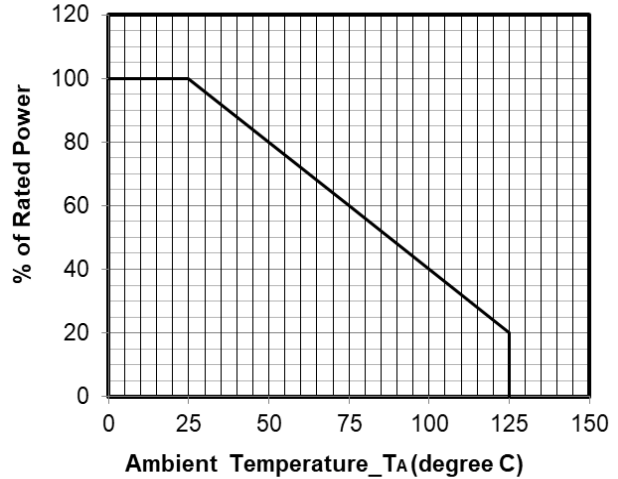
Junction Capacitance vs. Reverse Voltage



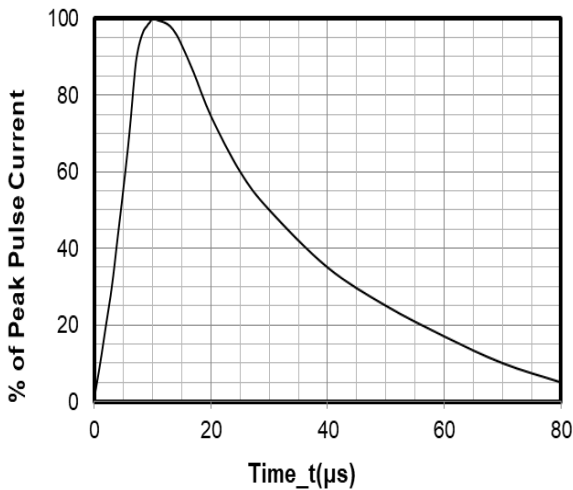
Peak Pulse Power vs. Pulse Time



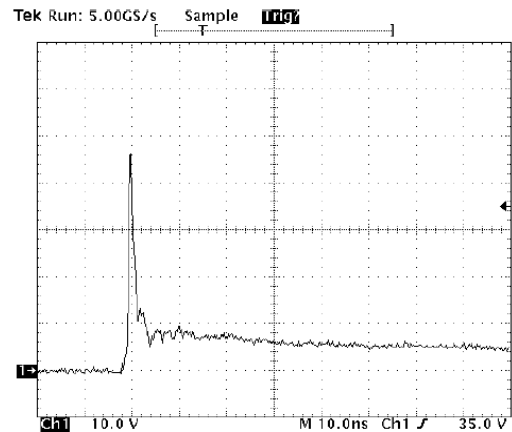
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



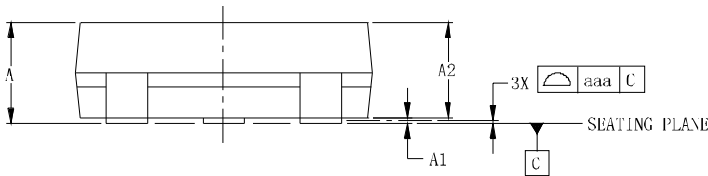
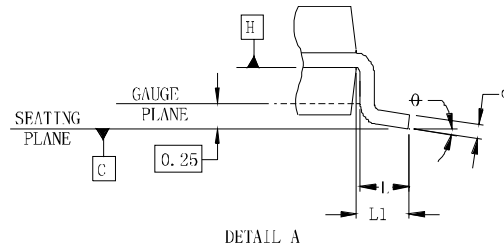
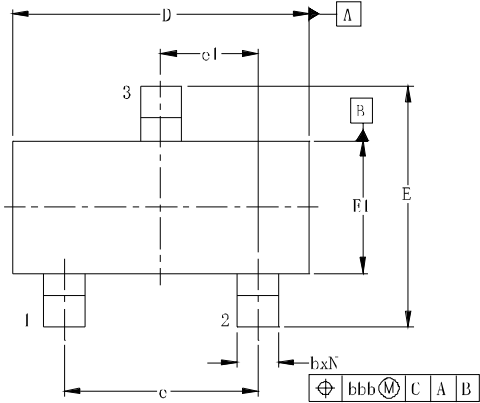
8 X 20μs Pulse Waveform



Note: Data is taken with a 10x attenuator

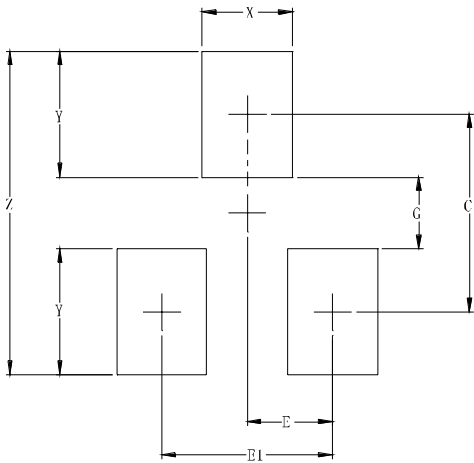
ESD Clamping Voltage
8 kV Contact per IEC61000-4-2

SOT-23 Package Outline Drawing



DIMENSIONS						
SYM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.035	-	0.044	0.89	-	1.12
A1	0.000	-	0.004	0.01	-	0.10
A2	0.035	0.037	0.040	0.88	0.95	1.02
b	0.012	-	0.020	0.30	-	0.51
c	0.003	-	0.007	0.08	-	0.18
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075		1.90BSC			
e1	0.037		0.95BSC			
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	0.022		0.55			
N	3		3			
ϕ	0°	-	8°	0°	-	8°
aaa	0.004		0.10			
bbb	0.008		0.20			

Suggested Land Pattern



DIMENSIONS		
SYM	INCHES	MILLIMETERS
C	0.087	2.20
E	0.037	0.95
E1	0.075	1.90
G	0.031	0.80
X	0.039	1.00
Y	0.055	1.40
Z	0.141	3.60

Contact Information

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