

ESDLLC5V0D06BH

Features

- Ultra small package: 0.6x0.3x0.3mm
- Ultra low capacitance: 0.35pF typical
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 20\text{kV}$
 - Contact discharge: $\pm 15\text{kV}$
 - IEC61000-4-5 (Lightning) 4A (8/20 μs)
- RoHS Compliant
- Lead Finish: NiPdAu

Description

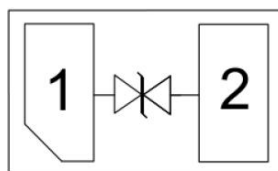
The ESDLLC5V0D06BH is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The ESDLLC5V0D06BH has an ultra-low capacitance with a typical value at 0.25pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 20\text{kV}$ air and $\pm 15\text{kV}$ contact discharge. It is assembled into an ultra-small 0.6x0.3x0.3mm

lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make ESDLLC5V0D06BH an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

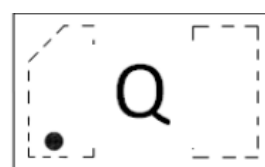
Applications

- Smart phones
- Display Ports
- MDDI Ports
- USB Ports
- Digital Video Interface (DVI)
- PCI Express and Serial SATA Ports

Circuit Diagram



Marking Diagram



Transparent top view
Q: Device Marking
Code

Absolute Maximum Ratings

Tamb=25°C unless otherwise specified

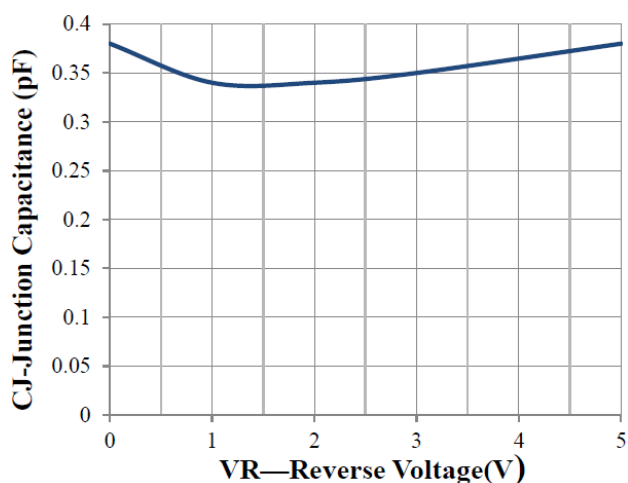
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppp	80	W
Maximum Reverse Peak Pulse Current	I _{PP} *1	4	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 20	KV
ESD per IEC 61000-4-2 (Contact)		± 15	
Storage Temperature Range	T _{STJ}	-55 to +150	°C
Operating Temperature Range	T _J	-55 to +125	°C

Electrical Characteristics

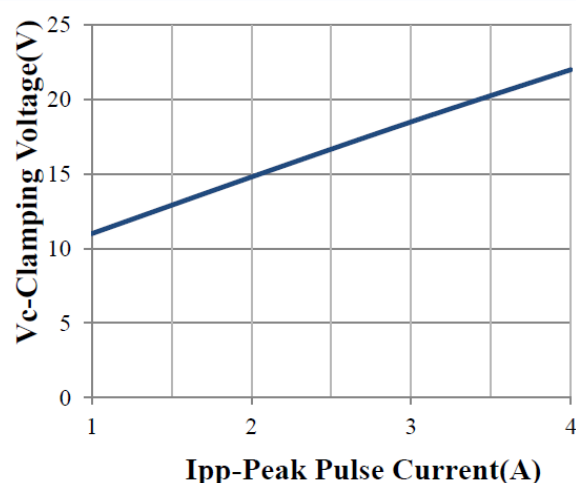
TA=25°C unless otherwise specified

Symbol	Parameter	Conditions	Min	Typ	Max	Units
V _{RWM}	Reverse Working Peak Voltage	-			5.0	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA	6.0	7.5	8.5	V
I _R	Reverse Current	V _{RWM} = 5V			0.5	μA
V _C	Clamping Voltage	I _{PP} =1A, t _P =8/20 μs			12	V
V _C	Clamping Voltage	I _{PP} =4A, t _P =8/20 μs		18	20	V
C _D	Diode Capacitance	V _R = 0V, f = 1MHz		0.35	0.40	pF

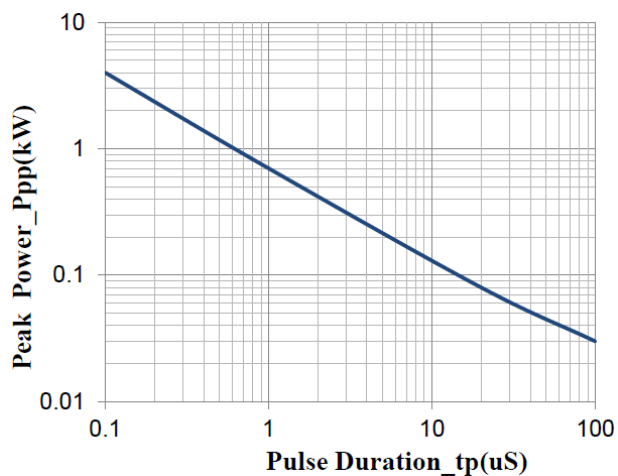
Characteristic Curves



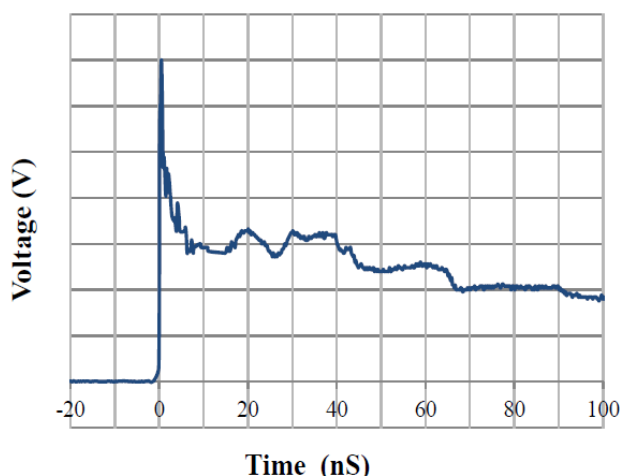
Junction Capacitance vs. Reverse Voltage



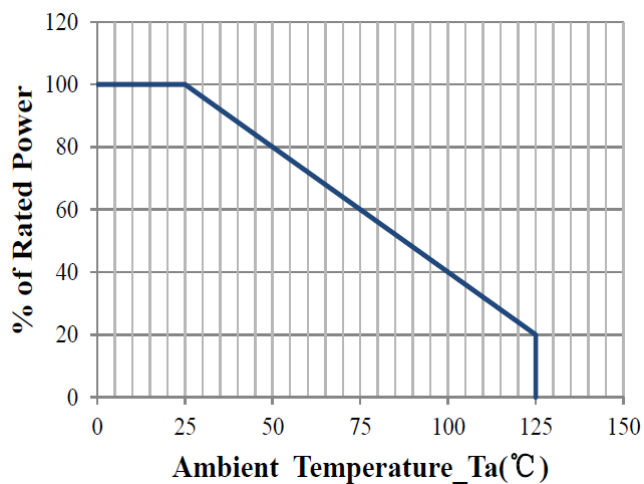
Clamping Voltage vs. Peak Pulse Current



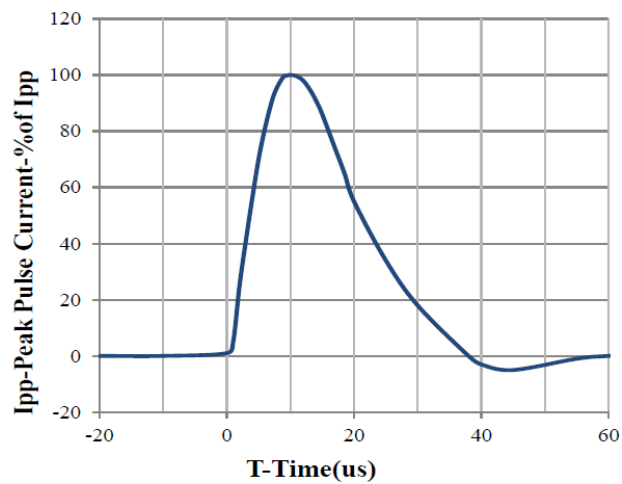
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

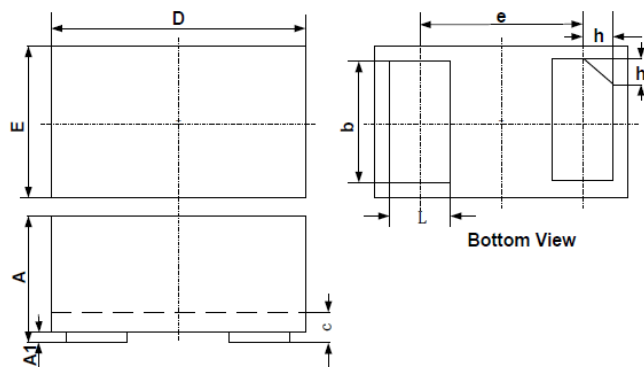


Power Derating Curve



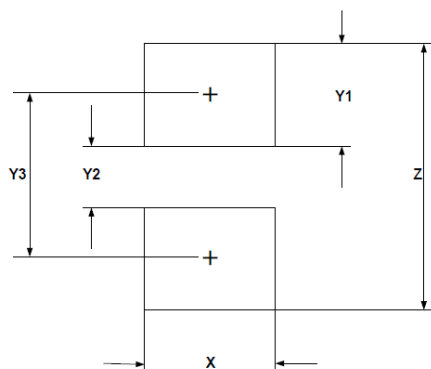
8/20μs Pulse Waveform

DFN0603-2 Package Outline & Dimensions



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.230		0.330
A1	0.000	0.020	0.050
b	0.215	0.245	0.275
c	0.120	0.150	0.180
D	0.550	0.600	0.650
e	0.355 BSC		
E	0.250	0.300	0.350
L	0.160	0.190	0.220
h	0.079 BSC		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.30	0.012
Y1	0.25	0.010
Y2	0.15	0.006
Y3	0.40	0.016
Z	0.65	0.026

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 device performance may vary over time.

Users should verify actual device performance in their specific applications.