

NRESDTLC5V0D8B

Features

- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 0.10pF 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: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 5A (8/20 μs)
- RoHS Compliant

Description

The NRESDTLC5V0D8BH 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.

Absolute Maximum Ratings

Tamb=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	60	W
Maximum Reverse Peak Pulse Current (8/20 μs)	I _{PP}	5	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 30	KV
ESD per IEC 61000-4-2 (Contact)		± 30	
Storage Temperature Range	T _{STJ}	-55 to +150	°C
Operating Temperature Range	T _J	-55 to +125	°C

Electrical Characteristics

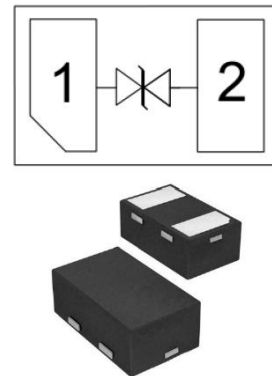
TA=25°C unless otherwise specified

Symbol	Parameter	Conditions	Min	Typ	Max	Units
V _{RWM}	Reverse Working Peak Voltage	-			5.0	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA	6.5		9.0	V
I _R	Reverse Current	V _{RWM} = 5V			0.1	μA
V _H	Holding Voltage	I _H =100mA	5.2			V
V _{CL}	Clamping Voltage	I _{PP} =16A, t _p =100ns		13.2		V
R _{DYN}	Dynamic Resistance			0.44		Ω
V _C	Clamping Voltage	I _{PP} =1A, t _p =8/20 μs		6.5	8	V
V _C	Clamping Voltage	I _{PP} =5A, t _p =8/20 μs		10	12	V
C _D	Diode Capacitance	VR = 0V, f = 1MHz		0.10	0.15	pF

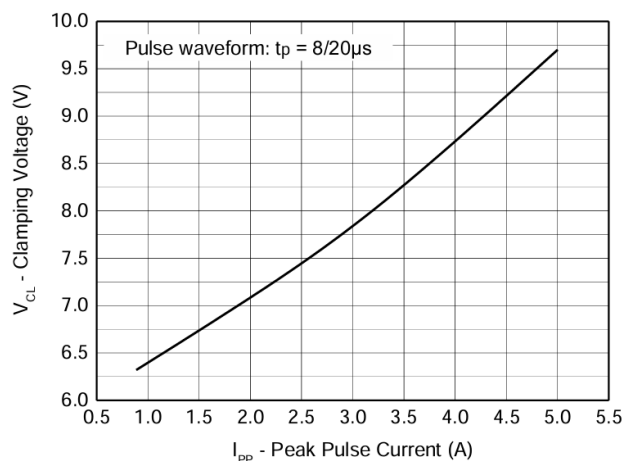
Applications

- Notebooks and smartphone
- Display Ports
- Computer and peripheral devices
- Digital Video Interface (DVI)
- Portable Electronics

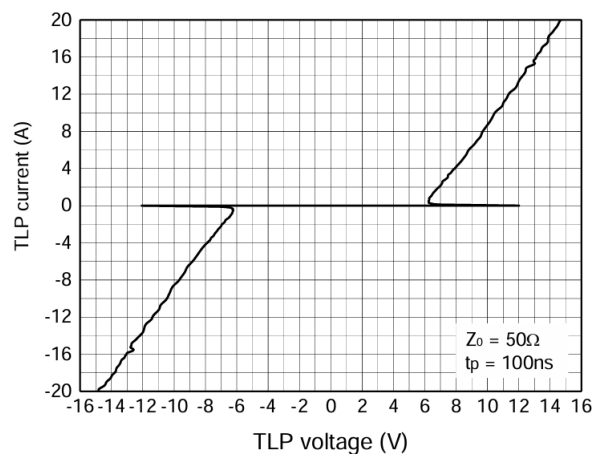
Circuit Diagram



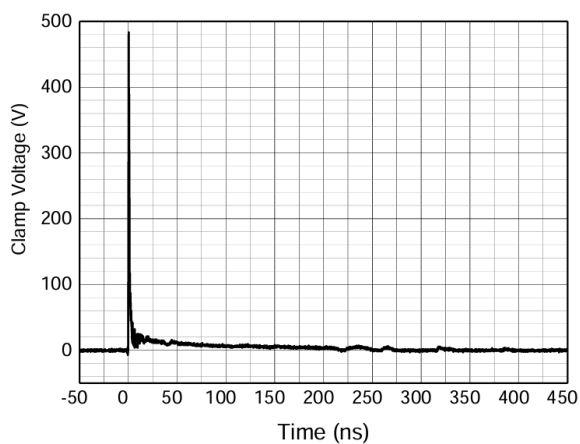
Characteristic Curves



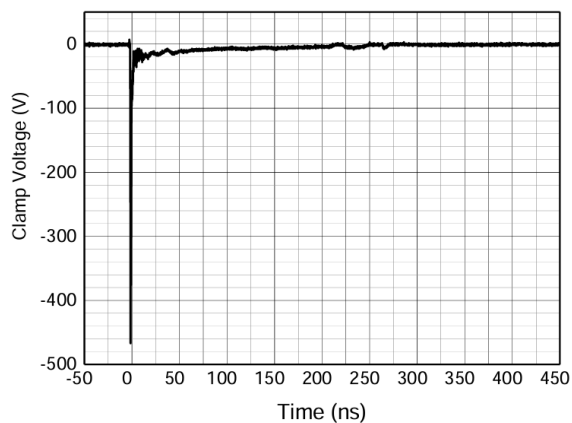
Clamping Voltage vs. Peak Pulse Current



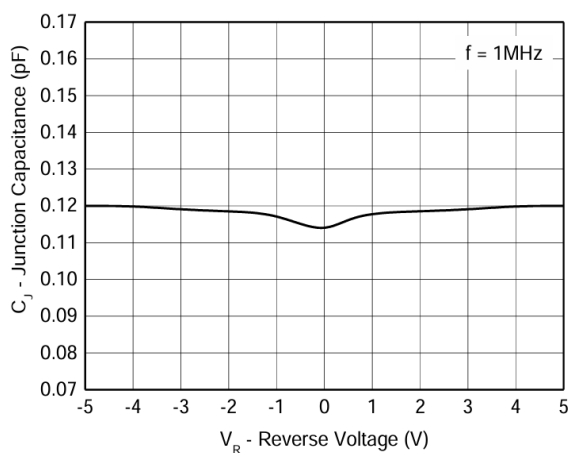
TLP IV Curve



+8kV contact discharge per IEC61000-4-2

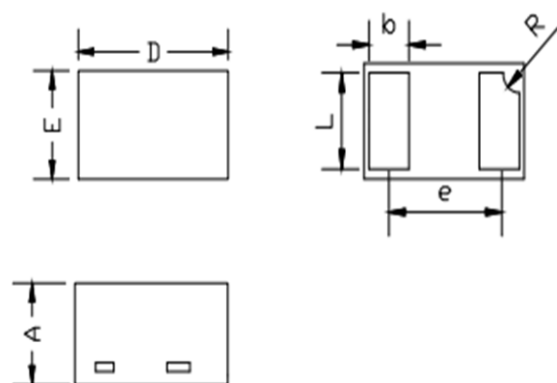


-8kV contact discharge per IEC61000-4-2



Capacitance vs. Reverse Voltage

DFN1006-2 Package Outline & Dimensions



MILLMETER			
SYMBOL	MIN	NOM	MAX
A	0.45	-	0.55
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.20	0.25	0.30
L	0.45	0.50	0.55
e	0.675		
R	0.07	0.10	0.13

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.