

NRES DLC24VAPBETH

Features

- SOT-23 package
- High Trigger Voltage $\geq 100\text{ V}$
- Low leakage current
- Low capacitance: $C_d < 2\text{ pF}$
- Response time is typically $< 1\text{ ns}$
- 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) 2A (8/20 μs)
- AEC-Q101 qualified

Description

The NRES DLC24VAPBETH protects sensitive automotive electronics from ESD, Surge, and other harmful transient events. This device is designed for compliance to OPEN Alliance 100/1000 BASE-T1 Ethernet, and other high speed data networks. Device is suitable for ESD protection on the connector side of the transceiver PHY.

Absolute Maximum Ratings

$T_{amb}=25^\circ\text{C}$ unless otherwise specified

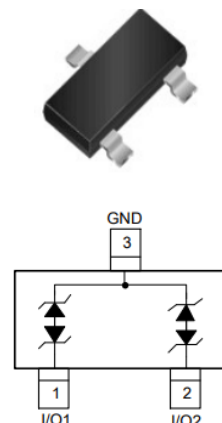
Parameter	Symbol	Value	Unit
Maximum Reverse Peak Pulse Current(8/20 μs)	I_{PP}^{*1}	2	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	KV
ESD per IEC 61000-4-2 (Contact)		± 30	
Storage Temperature Range	T_{STJ}	-55 to +150	$^\circ\text{C}$
Operating Temperature Range	T_J	-55 to +150	$^\circ\text{C}$

Electrical Characteristics

$T_A=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Conditions	Min	Typ	Max	Units
V_{RWM}	Reverse Working Peak Voltage	-			24.0	V
I_R	Reverse Current	$V_{RWM} = 24\text{ V}$			0.1	μA
V_{t1}	trigger voltage	$t_p=0.2/100\text{ ns(TLP)}$	100	140		V
V_h	holding voltage	$t_p=0.2/100\text{ ns(TLP)}$	28			V
R_{dyn}	dynamic resistance	$I(\text{TLP } (0.2/100\text{ ns})) = 40\text{ A}$		0.6		Ω
C_D	Diode Capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}$		2		pF

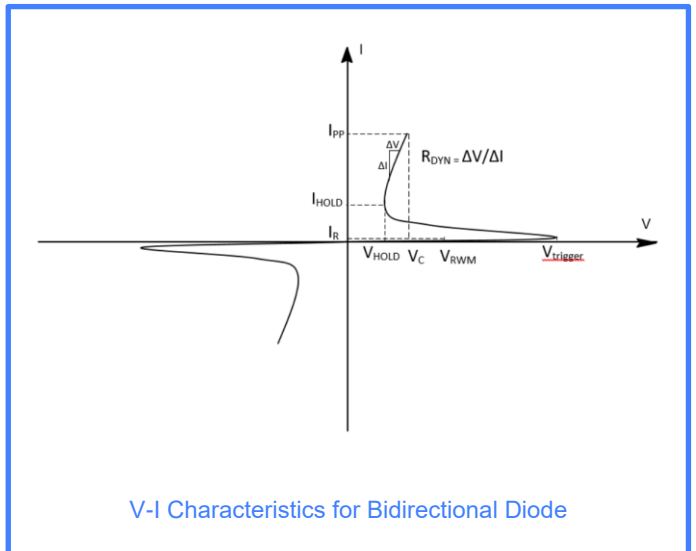
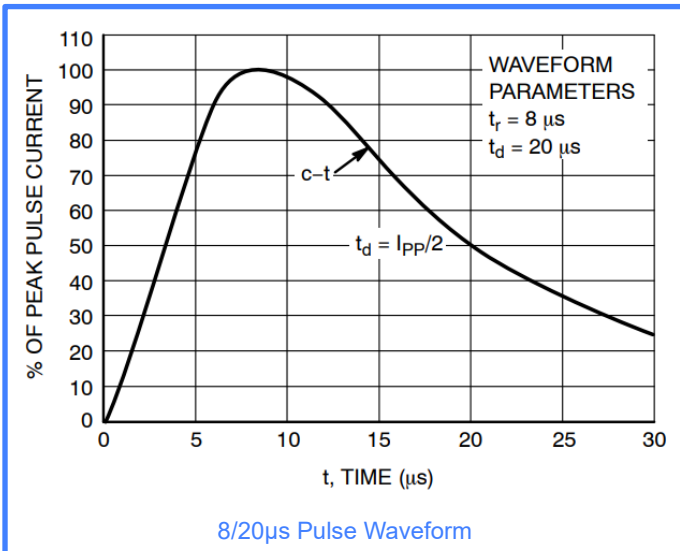
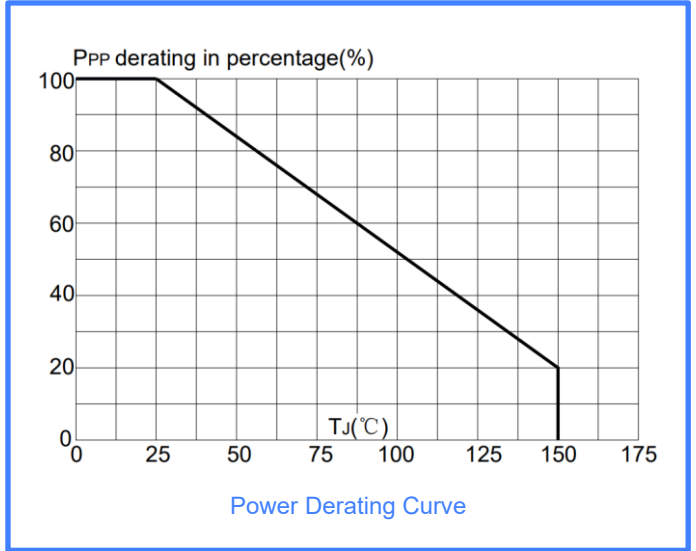
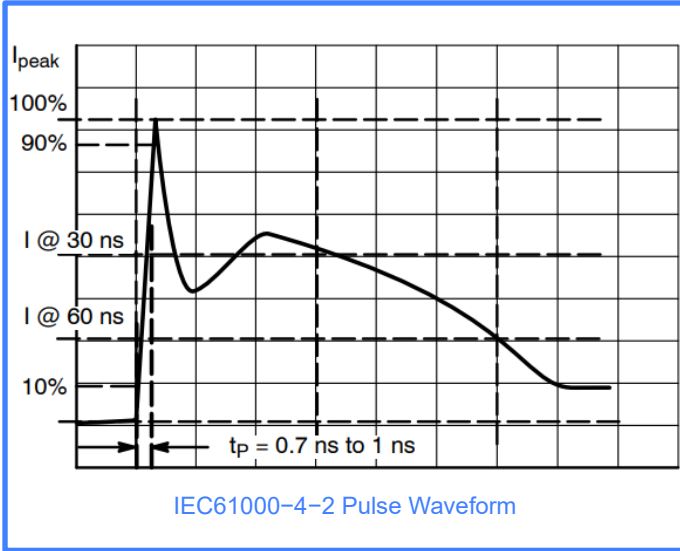
Circuit Diagram



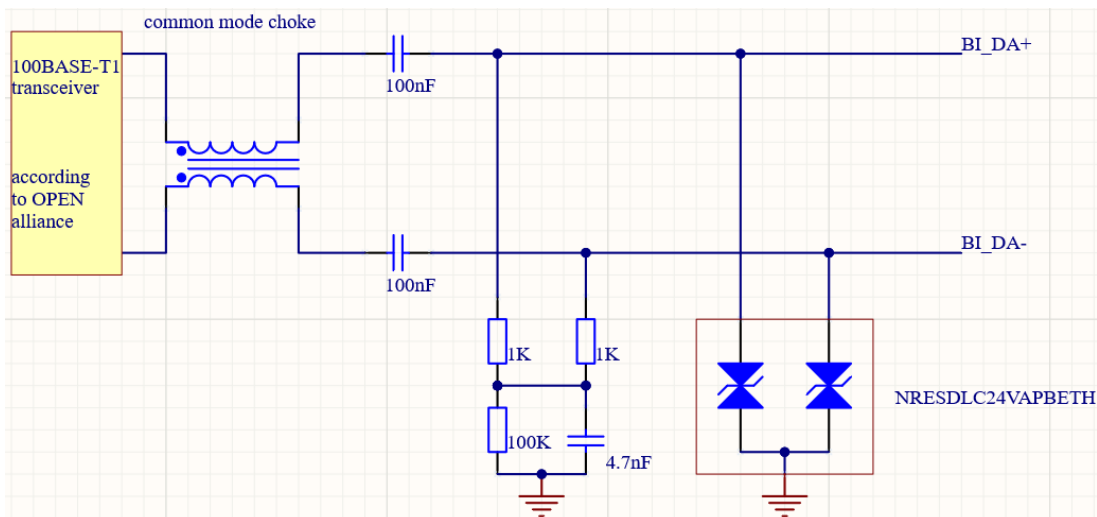
Applications

- Open Alliance 100/1000 BASE-T1 Ethernet
- High Speed Data Networks

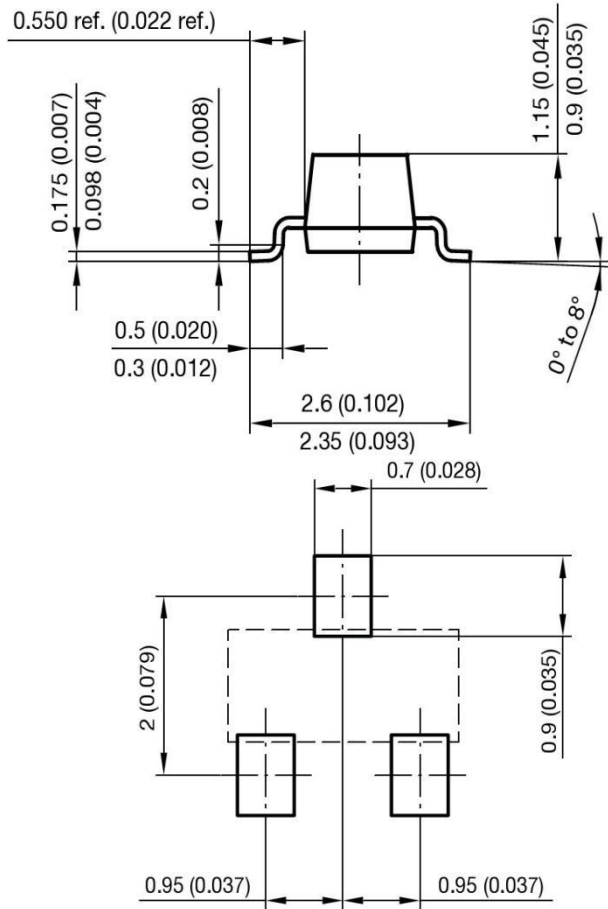
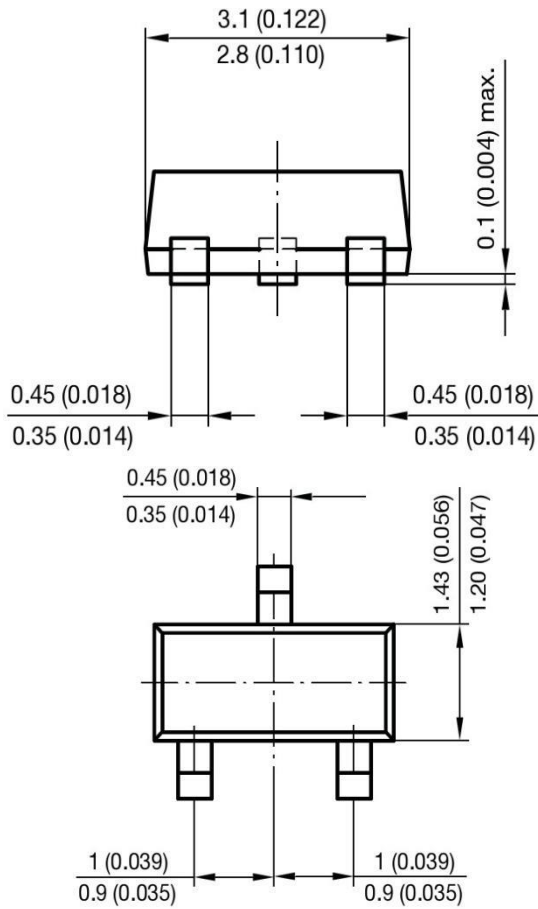
Characteristic Curves



Application Example



SOT-23 Package Outline & Dimensions



Mounting Pad Layout

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.