

Features

- Working voltage 3.3 V
- SMT - DFN package
- Low capacitance - 4 pF
- IEC 61000-4-2 (ESD)
- IEC 61000-4-4 (EFT)
- IEC 61000-4-5 (Surge)

Applications

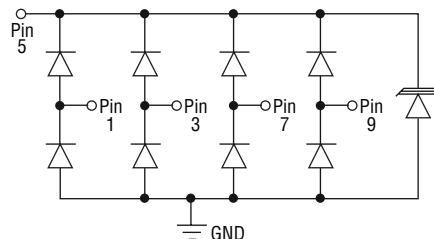
- FireWire, T1/E1, T3/E3 chip side protection
- Digital Visual Interface (DVI)
- Ethernet 10/100/1000 Base T
- High speed port protection
- Portable electronics

CDDFN10-3304NA - TVS/Steering Diode Array

General Information

The CDDFN10-3304NA device provides ESD, EFT and Surge protection for high speed data ports, assisting compliance with IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements. The Transient Voltage Suppressor array, protecting up to 4 data lines, offers a Working Peak Voltage of 3.3 V.

The DFN-10 packaged device will mount directly onto the industry standard DFN-10 footprint. Bourns® Chip Diodes are easy to handle with standard pick and place equipment.



Absolute Maximum Ratings, $T_A = 25\text{ }^\circ\text{C}$ (Unless Otherwise Noted)

Parameter	Symbol	CDDFN10-3304NA	Unit
Peak Pulse Current ($t_p = 8/20\ \mu\text{s}$) per IEC 61000-4-5	I_{PP}	25	A
ESD Protection per IEC 61000-4-2	Contact Discharge	± 30	kV
	Air Discharge	± 30	kV
EFT Protection per IEC 61000-4-4 @ 5/50 ns		40	A
Storage Temperature	T_{STG}	-55 to +150	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-55 to +125	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Breakdown Voltage @ 1 mA	V_{BR}	3.9			V
Reverse Working Peak Voltage	V_{RWM}			3.3	V
Leakage Current ¹ @ V_{RWM}	I_D			1	μA
Clamping Voltage ² @ $I_P = 5\ \text{A}$ 8/20 μs	V_C			12	V
Clamping Voltage ² @ $I_P = 15\ \text{A}$ 8/20 μs	V_C			15	V
Clamping Voltage ² @ $I_P = 25\ \text{A}$ 8/20 μs	V_C			18	V
Junction Capacitance ² @ 0 V 1 MHz	C_D		4.0	4.6	pF
Junction Capacitance ³ @ 0 V 1 MHz	C_{IO}		1.5	2.3	pF

Note 1: Pin 5 to ground.

Note 2: Pin 1,3,7 or 9 to ground.

Note 3: Between Pin 1,3,7 and 9.

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

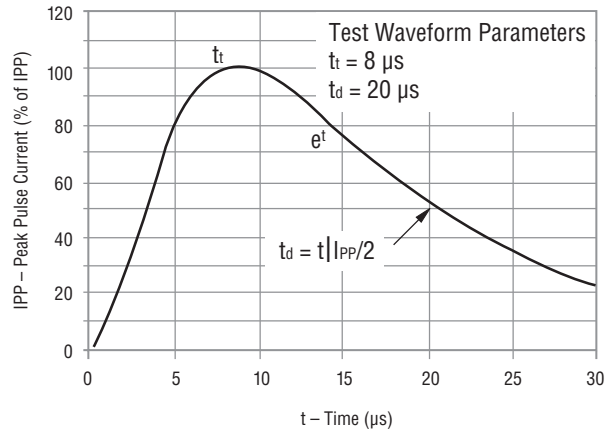
Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

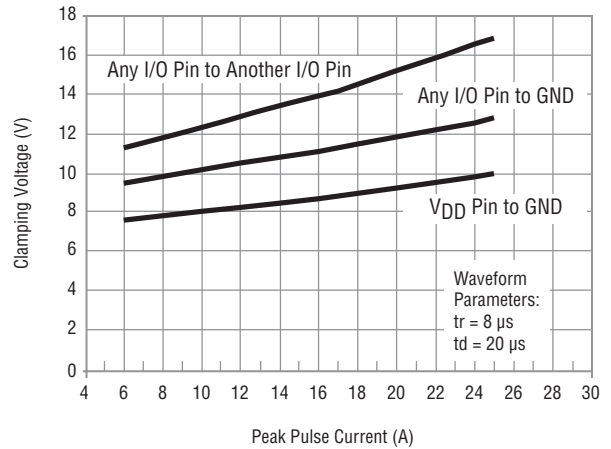
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Rating & Characteristic Curves

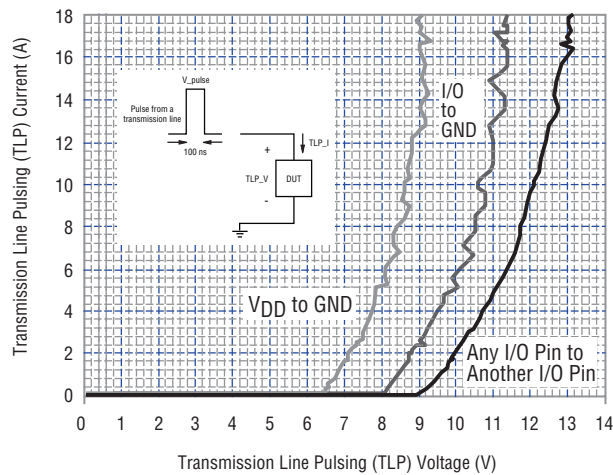
Pulse Waveform



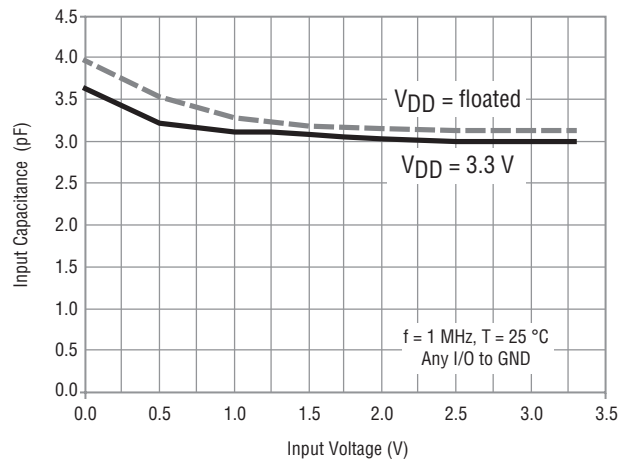
Typical Clamping Voltage vs Peak Pulse Current



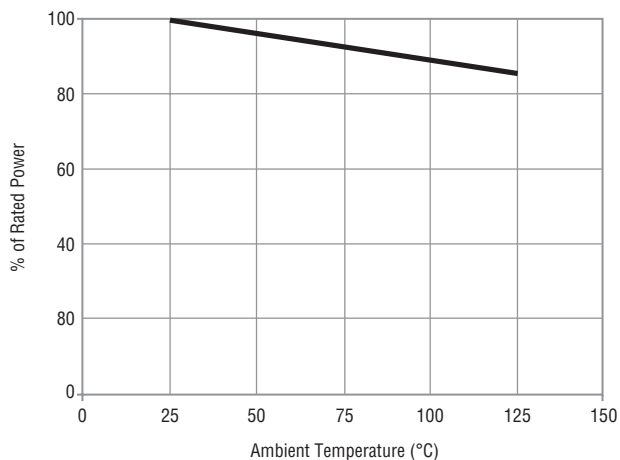
Typical Transmission Line Pulsing (TLP) Measurement



Typical Voltage vs. Capacitance



Typical Power Derating Curve



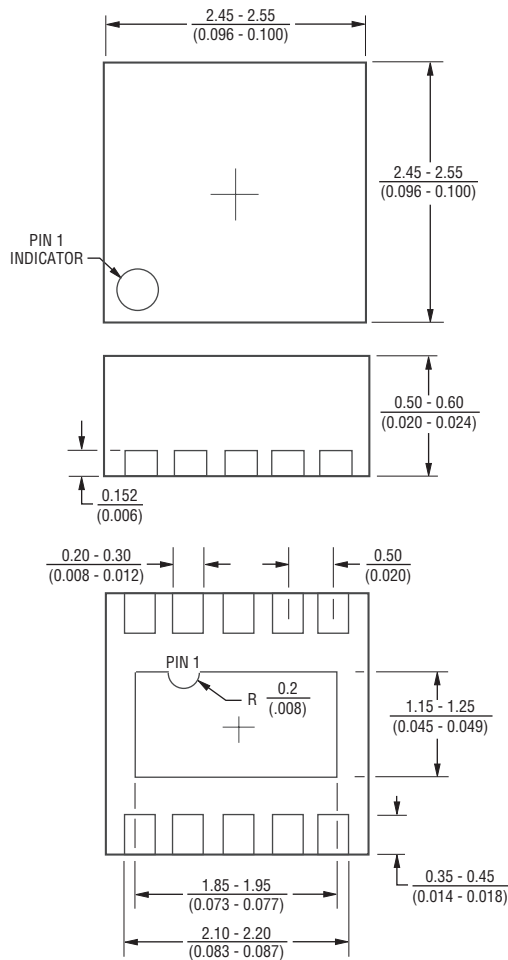
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CDDFN10-3304NA - TVS/Steering Diode Array

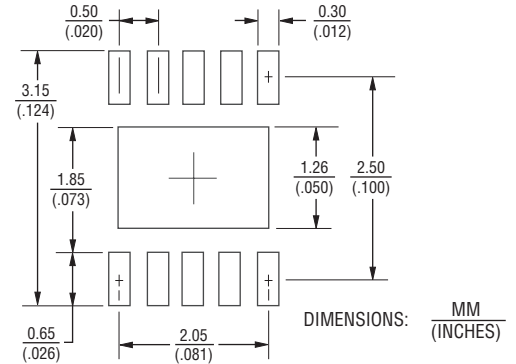
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Product Dimensions

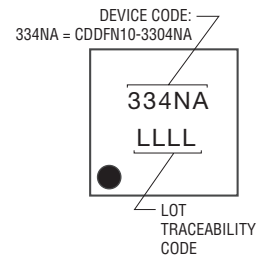
This is a molded DFN10 package with lead free Nickel-Paladium-Gold (Ni/Pd/Au) on the lead frame. It has a flammability rating of UL 94V-0.



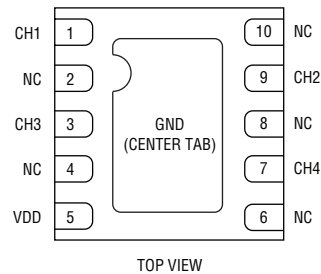
Recommended Footprint



Typical Part Marking



Pin Out



Pin	Function
1	I/O
2	N.C.
3	I/O
4	N.C.
5	V _{DD}
6	N.C.
7	I/O
8	N.C.
9	I/O
10	N.C.
CENTER TAB	GROUND

How to Order

CD DFN10 - 33 04 NA

Common Diode _____
 Chip Diode _____
 Package _____
 DFN10 = DFN-10 Package _____
 Reverse Working Peak Voltage _____
 33 = 3.3 V_{RWM} (Volts) _____
 Number of Lines _____
 04 = 4 Data Lines _____
 Suffix _____
 NA = Low Capacitance _____

Environmental Specifications

Moisture Sensitivity Level.....3
 ESD Classification (HBM).....3B

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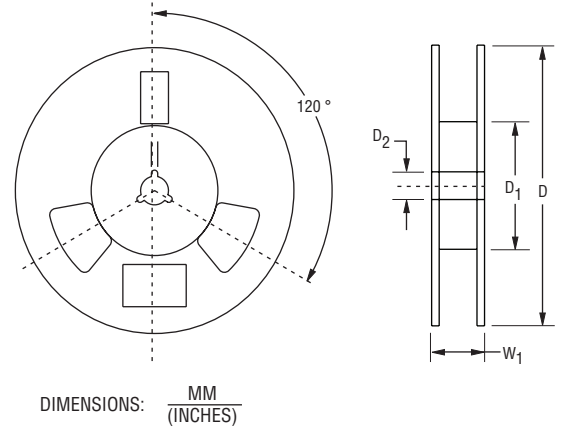
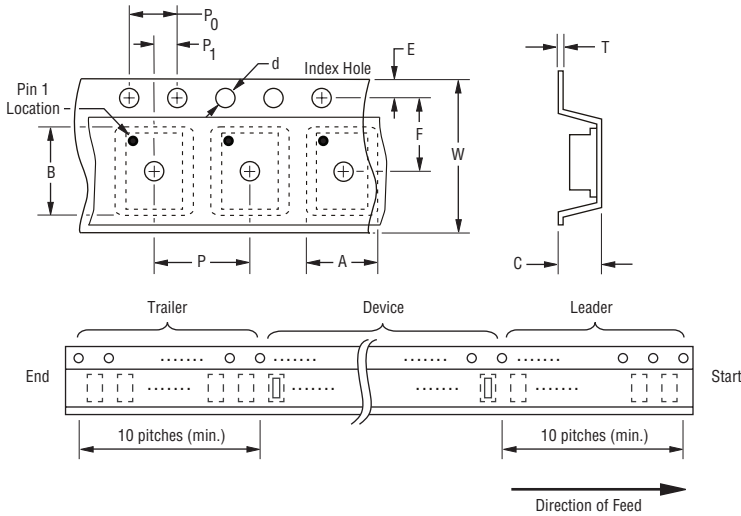
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CDDFN10-3304NA - TVS/Steering Diode Array

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Packaging Information

The product will be dispensed in tape and reel format (see diagram below).



Devices are packed in accordance with EIA standard RS-481-A.

Item	Symbol	DFN-10
Carrier Width	A	$\frac{1.2 \pm 0.05}{(0.047 \pm 0.002)}$
Carrier Length	B	$\frac{2.7 \pm 0.05}{(0.106 \pm 0.002)}$
Carrier Depth	C	$\frac{0.7 \pm 0.05}{(0.028 \pm 0.002)}$
Sprocket Hole	d	$\frac{1.5 \pm 0.05}{(0.059 \pm 0.002)}$
Reel Outside Diameter	D	$\frac{180 \pm 3}{(7.087 \pm 0.118)}$
Reel Inner Diameter	D ₁	$\frac{50.0}{(1.969)}$ MIN.
Feed Hole Diameter	D ₂	$\frac{13.00 \pm 0.20}{(0.512 \pm 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 \pm 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
Overall Tape Thickness	T	$\frac{0.60}{(0.024)}$ MAX.
Tape Width	W	$\frac{12.3}{(0.484)}$ MAX.
Reel Width	W ₁	$\frac{18.4}{(0.724)}$ MAX.
Quantity per Reel	--	3000

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