

Features

- Lead free as standard
- RoHS compliant*
- Low capacitance - 4 pF
- ESD protection >24 kV
- Surge protection

Applications

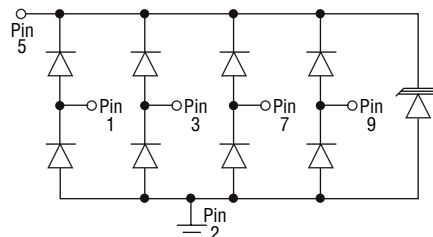
- FireWire, T1/E1, T3/E3 chip side protection
- Digital Visual Interface (DVI)
- Ethernet 10/100/1000 Base T
- High speed port protection
- Portable electronics

CDDFN10-3304N - TVS/Steering Diode Array

General Information

The CDDFN10-3304N device provides ESD, EFT and Surge protection for high speed data ports meeting 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 Reverse 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 and their flat configuration minimizes roll away.



Thermal Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDDFN10-3304N	Unit
Peak Pulse Power (t _p = 8/20 μs) (NOTE 1)	P _{PK}	400	W
Storage Temperature	T _{STG}	-55 to +150	°C
Operating Temperature	T _{OPR}	-55 to +150	°C

Notes:

1. See Peak Pulse Power vs. Pulse Time.

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDDFN10-3304N	Unit
Minimum Snap-Back Voltage @ 50 mA	V _{SB}	3.3	V
Maximum Working Peak Voltage	V _{WM}	3.3	V
Maximum Leakage Current @ V _{WM}	I _D	1	μA
Maximum Clamping Voltage ¹ @ I _P = 1 A	V _C	5.5	V
Maximum Clamping Voltage ¹ @ I _P = 10 A	V _C	10	V
Minimum Punch-Through Voltage @ 5 A	V _P	3.5	V
Maximum Junction Capacitance ² @ 0 V 1 MHz	C _D	4.0	pF
ESD Protection per IEC 61000-4-2			
Minimum Contact Discharge		8	kV
Minimum Air Discharge		15	kV
EFT Protection per IEC 61000-4-4 @ 5/50 ns		40	A
Surge Protection per IEC 61000-4-5 @ 8/20 μs Level 2 (Line-Gnd) & Level 3 (Line-Line)		18	A

Note 1: Pin 5 to ground.

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



Asia-Pacific: Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116

Europe: Tel: +41-41 768 5555 • Fax: +41-41 768 5510

The Americas: Tel: +1-951 781-5500 • Fax: +1-951 781-5700

www.bourns.com

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.

Specifications are subject to change without notice.

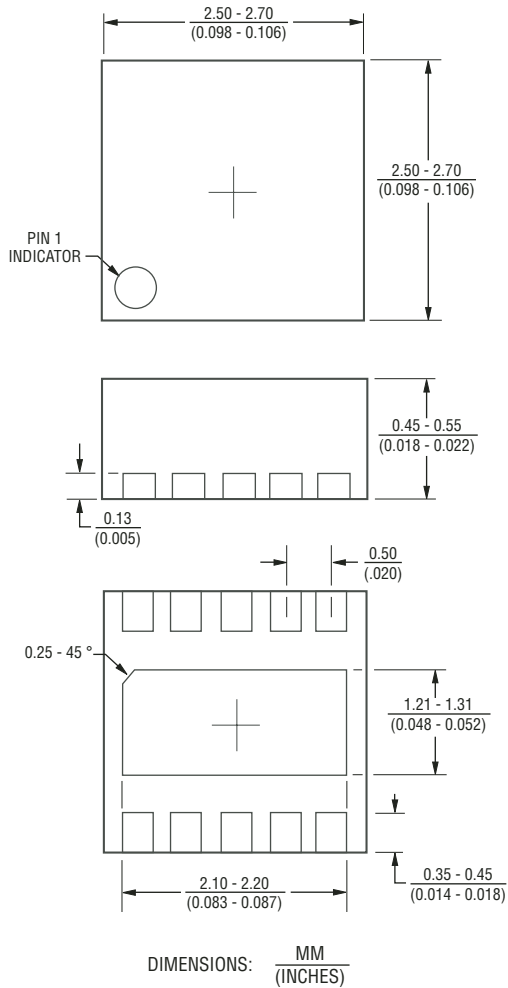
Customers should verify actual device performance in their specific applications

CDDFN10-3304N - TVS/Steering Diode Array

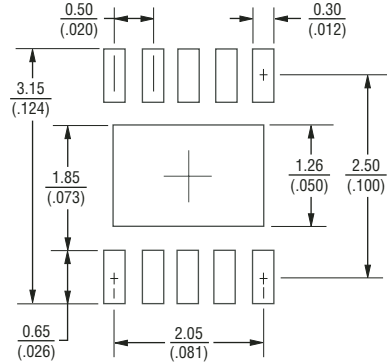


Product Dimensions

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

CDDFN10-3304N334

How to Order

CD DFN10 - 33 04 N

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

Pin Out

Pin	Function
1	I/O
2	N.C.
3	I/O
4	N.C.
5	V_{CC}
6	N.C.
7	I/O
8	N.C.
9	I/O
10	N.C.
GND	GROUND

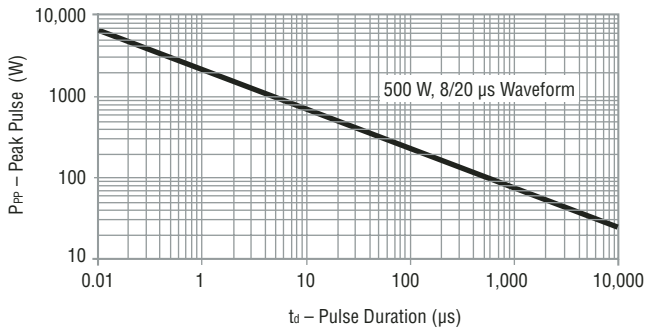
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CDDFN10-3304N - TVS/Steering Diode Array

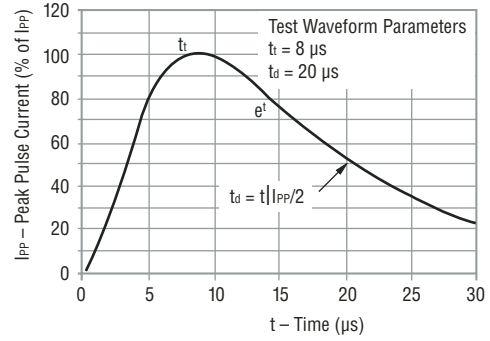


Rating & Characteristic Curves

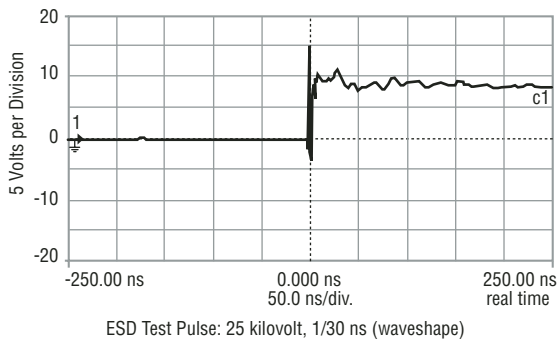
Peak Pulse Power vs. Pulse Time



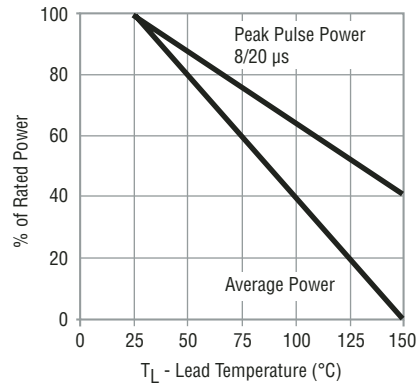
Pulse Waveform



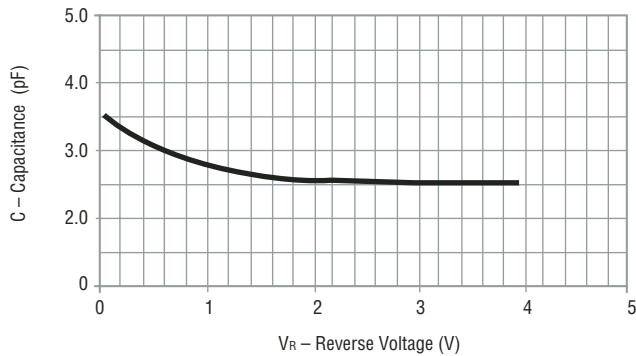
Overshoot & Clamping Voltage



Power Derating Curve



Typical Reverse Voltage vs. Capacitance



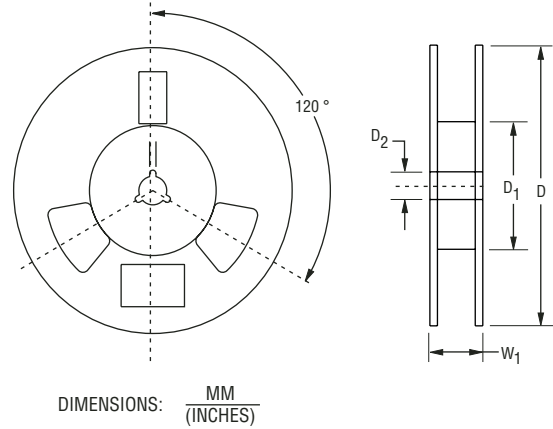
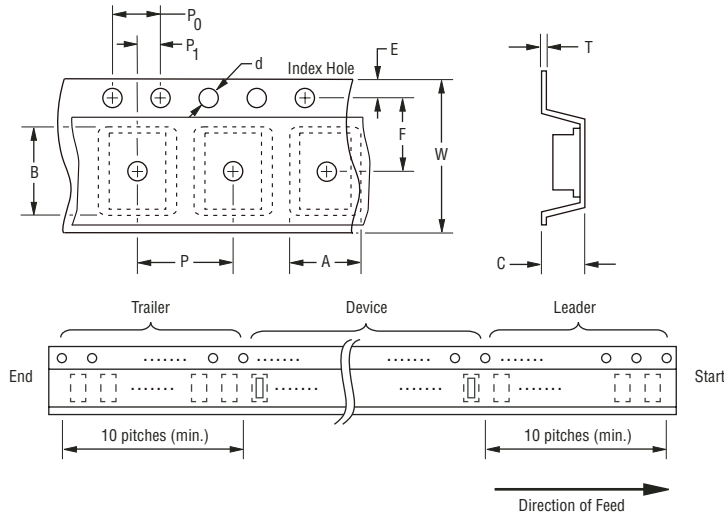
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CDDFN10-3304N - TVS/Steering Diode Array

BOURNS®

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	$\frac{2.90 \pm 0.10}{(0.114 \pm 0.004)}$
Carrier Length	B	$\frac{2.90 \pm 0.10}{(0.114 \pm 0.004)}$
Carrier Depth	C	$\frac{0.90 \pm 0.10}{(0.035 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$
Reel Inner Diameter	D ₁	$\frac{50.0}{(1.969)}$ MIN.
Feed Hole Diameter	D ₂	$\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$
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	$\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 \pm 0.008)}$
Reel Width	W ₁	$\frac{14.4}{(0.567)}$ MAX.
Quantity per Reel	--	3000

09/08

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