


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)

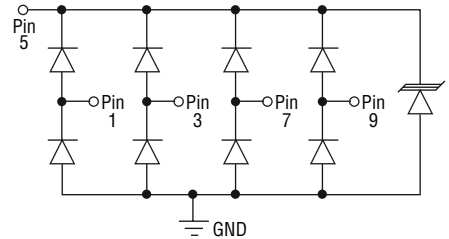
 Model CDDFN10-3304N is currently available but not recommended for new designs. Model [CDDFN10-3304NA](#) is preferred.

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 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	CDDFN10-3304N	Unit
Peak Pulse Power ($t_p = 8/20\ \mu\text{s}$) ^(NOTE 1)	P_{PK}	450	W
Peak Pulse Current ($t_p = 8/20\ \mu\text{s}$) per IEC 61000-4-5	I_{PP}	25	A
Storage Temperature	T_{STG}	-55 to +150	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-55 to +125	$^\circ\text{C}$
ESD Protection per IEC 61000-4-2 Contact Discharge		30 max.	kV
Air Discharge		30 max.	kV
EFT Protection per IEC 61000-4-4 @ 5/50 ns		40 min.	A

Notes:

1. See Peak Pulse Power vs. Pulse Time.

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
Working Peak Voltage	V_{WM}			3.3	V
Leakage Current ¹ @ V_{WM}	I_D			1	μA
Clamping Voltage ² @ $I_P = 5\ \text{A}$ 8/20 μs	V_C			15	V
Clamping Voltage ² @ $I_P = 15\ \text{A}$ 8/20 μs	V_C			18	V
Clamping Voltage ² @ $I_P = 20\ \text{A}$ 8/20 μs	V_C			20	V
Junction Capacitance ² @ 0 V 1 MHz	C_D		4.0	5.0	pF
Junction Capacitance ³ @ 0 V 1 MHz	C_{IO}		1.5		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.



WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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Applications

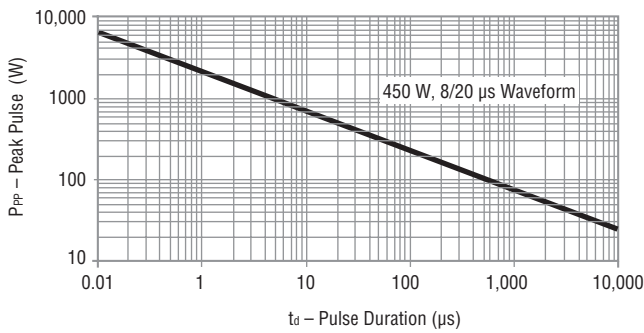
- FireWire, T1/E1, T3/E3 chip side protection
- Digital Visual Interface (DVI)
- Ethernet 10/100/1000 Base T
- High speed port protection
- Portable electronics

CDDFN10-3304N - TVS/Steering Diode Array

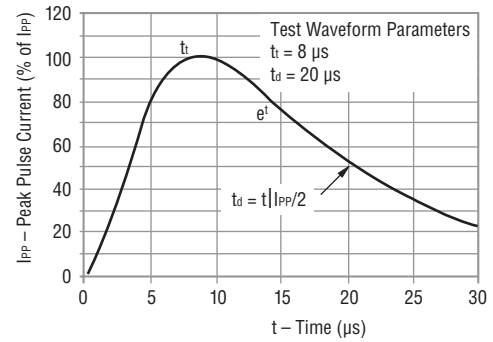
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Rating & Characteristic Curves

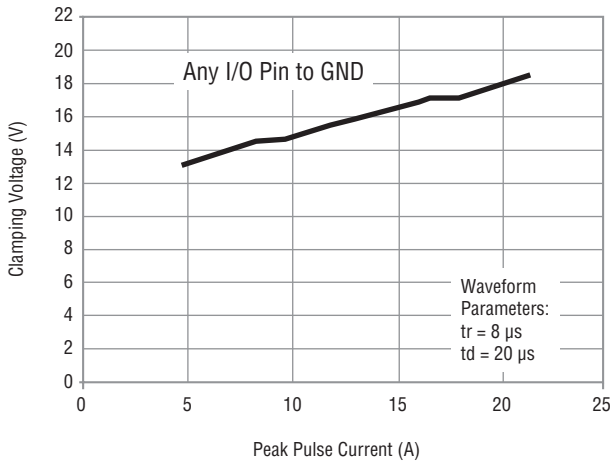
Peak Pulse Power vs. Pulse Time



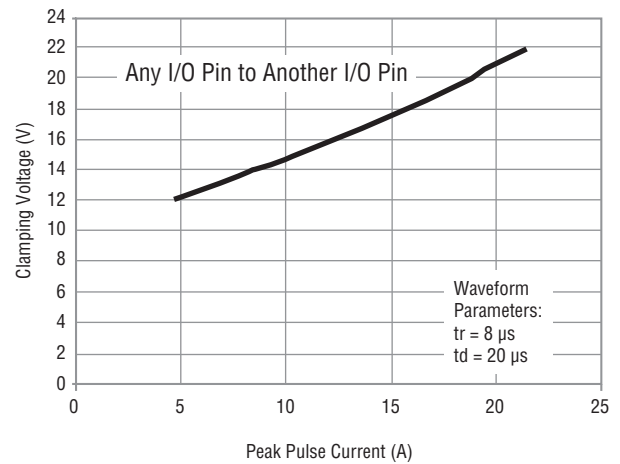
Pulse Waveform



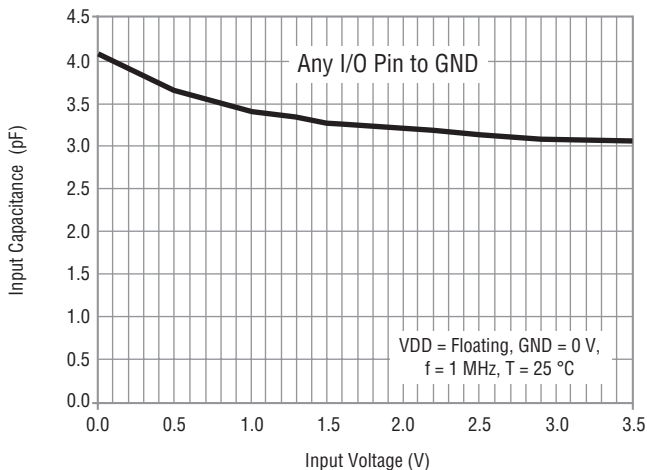
Clamping Voltage vs. Peak Pulse Current



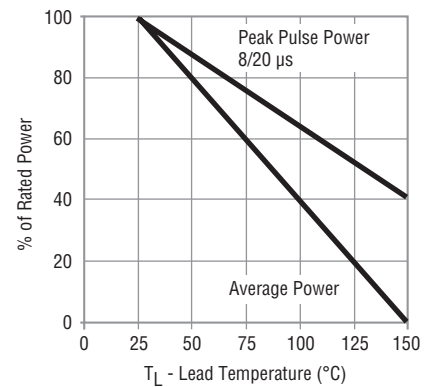
Clamping Voltage vs. Peak Pulse Current



Typical Voltage vs. Capacitance



Power Derating Curve



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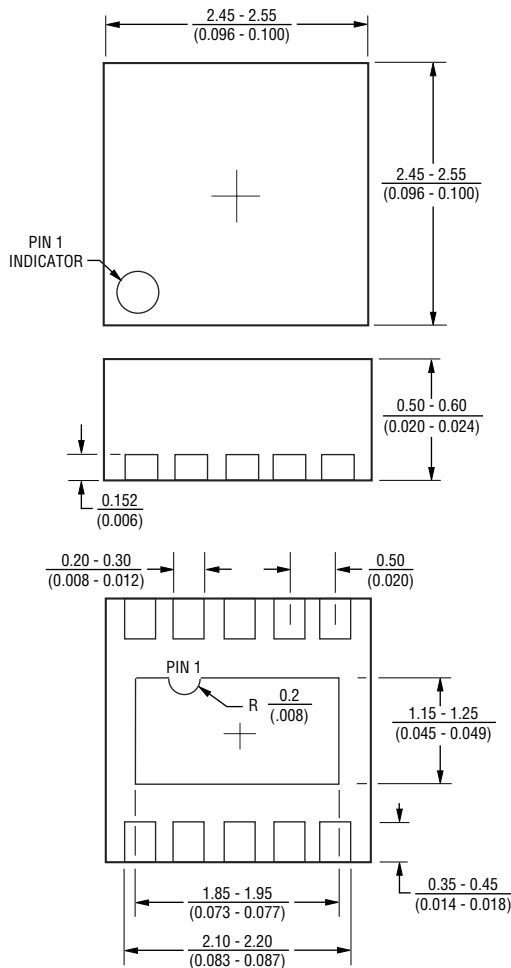
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CDDFN10-3304N - TVS/Steering Diode Array

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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.

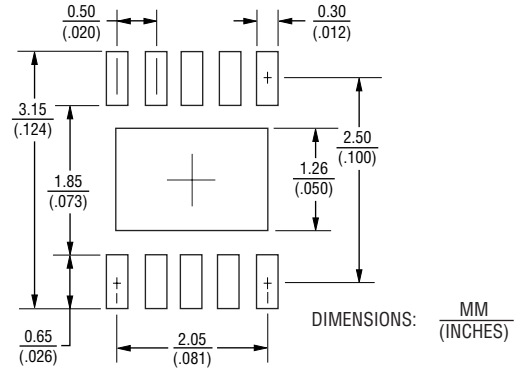


How to Order

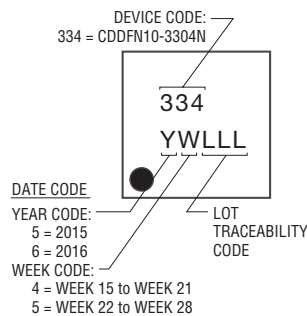
CD DFN10 - 33 04 N

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

Recommended Footprint

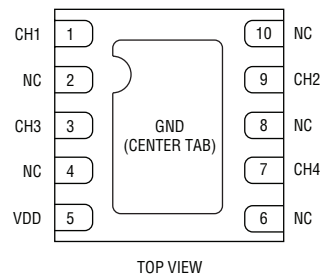


Typical Part Marking



Week Code	Duration
2	Week 1~Week 7
3	Week 8~Week 14
4	Week 15~Week 21
5	Week 22~Week 28
6	Week 29~Week 35
7	Week 36~Week 42
8	Week 43~Week 49
9	Week 50~Week 52

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.
CENTER TAB	GROUND

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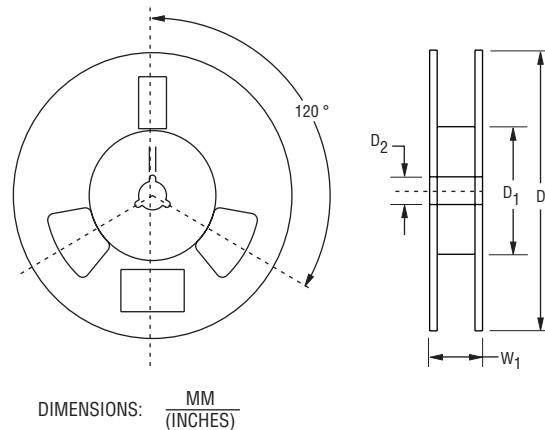
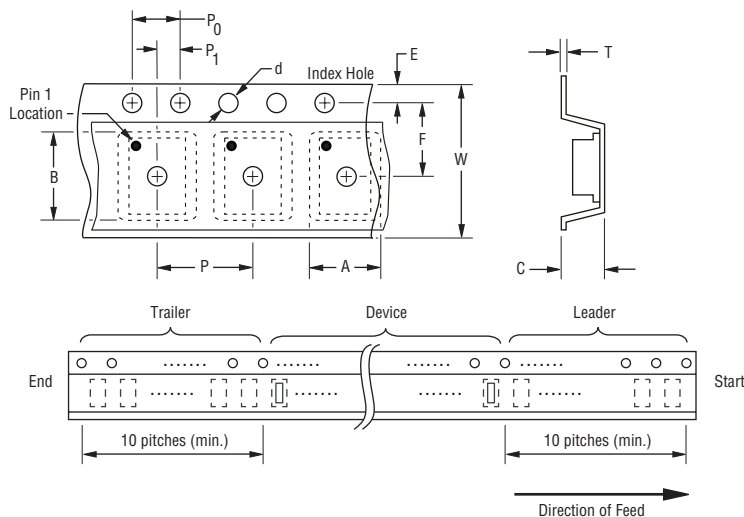
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CDDFN10-3304N - TVS/Steering Diode Array

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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

REV. 10/20

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