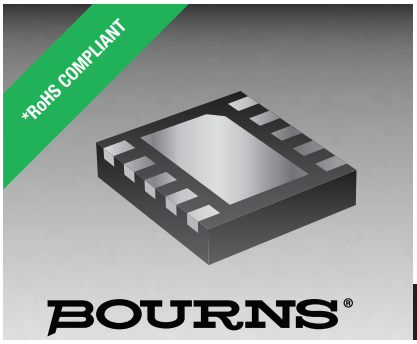


Features

- 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)

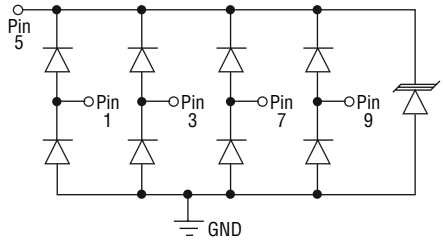
Model CDDFN10-3304N is obsolete and not recommended for new designs. Model CDDFN10-3304NA is preferred.

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 °C (Unless Otherwise Noted)

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

Notes:
1. See Peak Pulse Power vs. Pulse Time.

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Electrical Characteristics (@ T_A = 25 °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 A 8/20 μs	V_C			15	V
Clamping Voltage[2] @ I_P = 15 A 8/20 μs	V_C			18	V
Clamping Voltage[2] @ I_P = 20 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.
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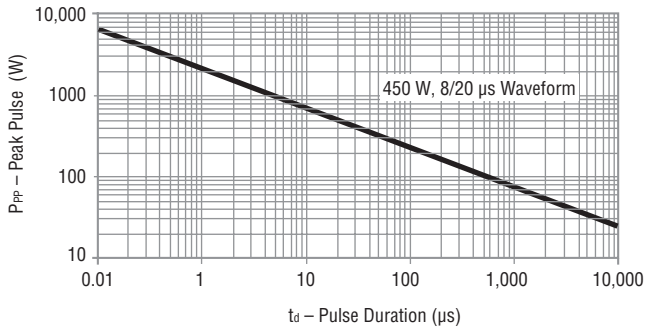
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Applications

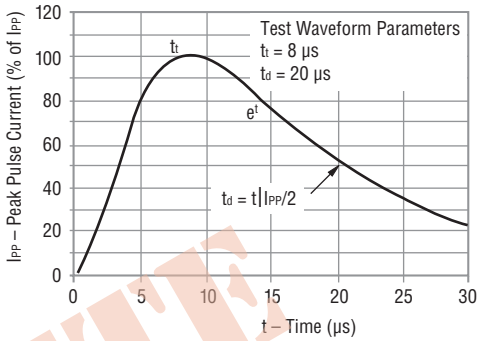
- FireWire, T1/E1, T3/E3 chip side protection
- Digital Visual Interface (DVI)
- Ethernet 10/100/1000 Base T
- High speed port protection
- Portable electronics

Rating & Characteristic Curves

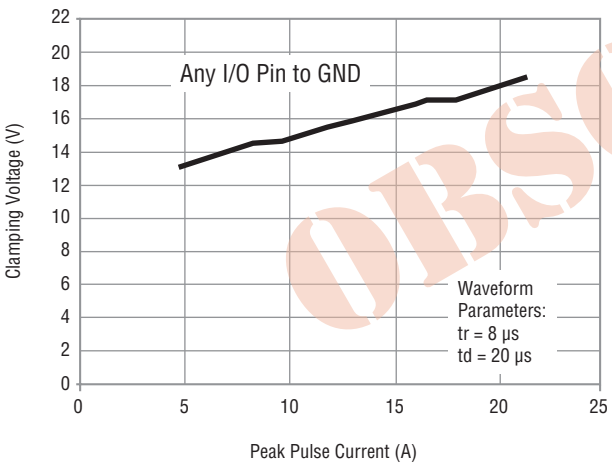
Peak Pulse Power vs. Pulse Time



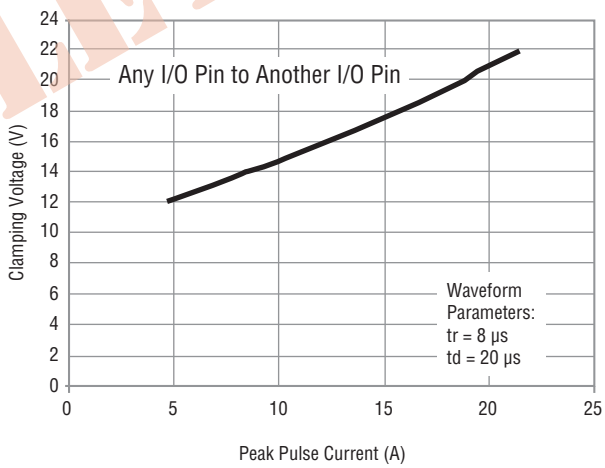
Pulse Waveform



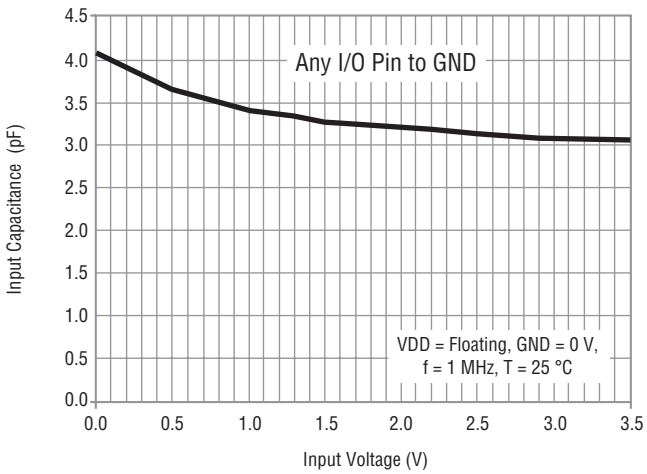
Clamping Voltage vs Peak Pulse Current



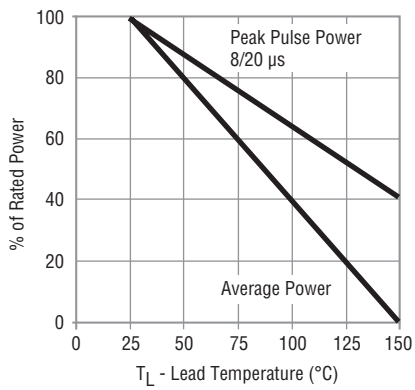
Clamping Voltage vs Peak Pulse Current



Typical Voltage vs. Capacitance



Power Derating Curve



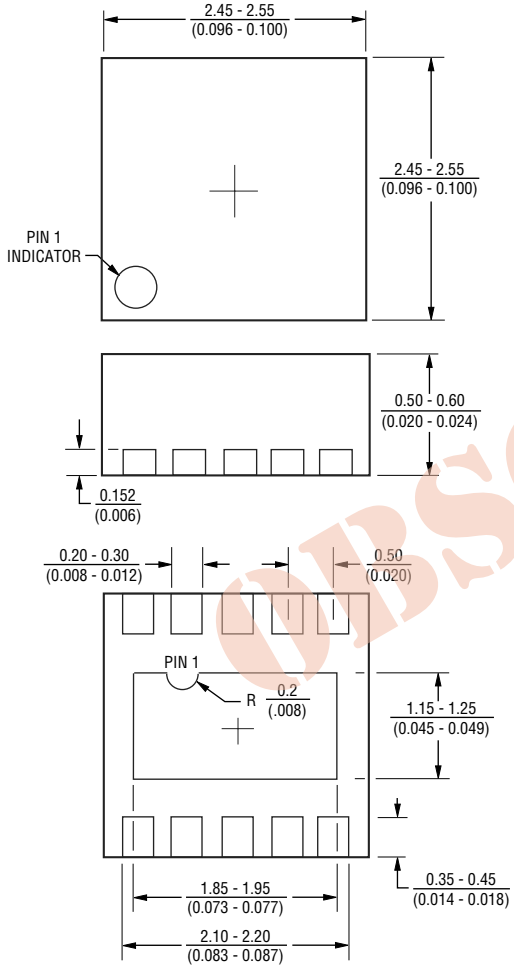
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Product Dimensions

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.

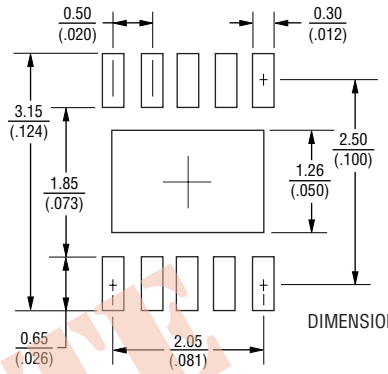


How to Order

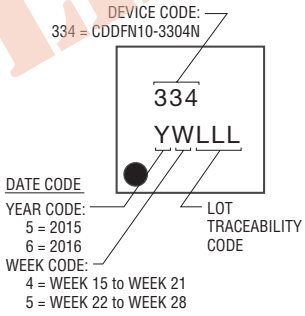
CD DFN10 - 33 04 N

- 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

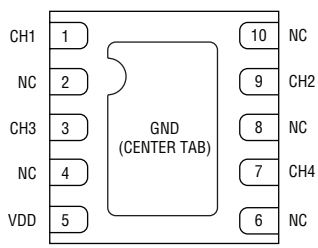


Typical Part Marking



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



TOP VIEW

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

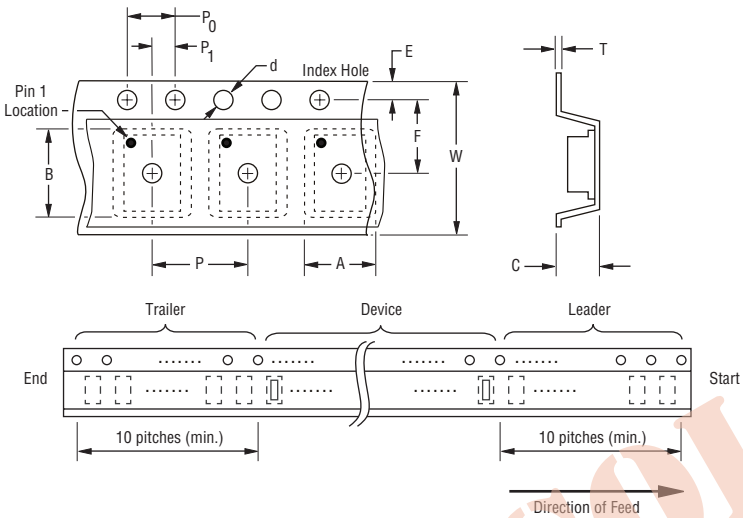
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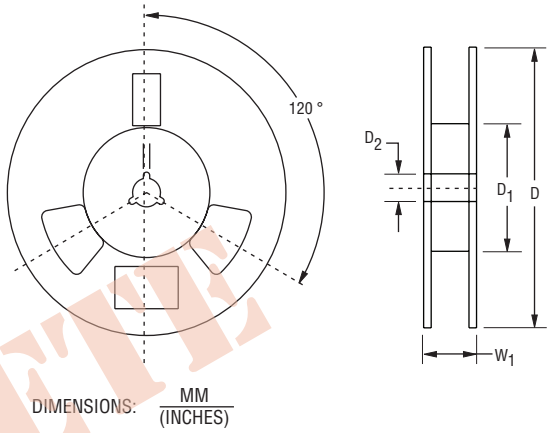
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Packaging Information

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	1.2 ± 0.05 (0.047 ± 0.002)
Carrier Length	B	2.7 ± 0.05 (0.106 ± 0.002)
Carrier Depth	C	0.7 ± 0.05 (0.028 ± 0.002)
Sprocket Hole	d	1.5 ± 0.05 (0.059 +0.002)
Reel Outside Diameter	D	180 ± 3 (7.087 ± 0.118)
Reel Inner Diameter	D_1	50.0 (1.969) MIN.
Feed Hole Diameter	D_2	13.00 ± 0.20 (0.512 ± 0.008)
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 ± 0.004)
Punch Hole Position	F	3.50 ± 0.05 (0.138 ± 0.002)
Punch Hole Pitch	P	4.00 ± 0.10 (0.157 ± 0.004)
Sprocket Hole Pitch	P_0	4.00 ± 0.10 (0.157 ± 0.004)
Embossment Center	P_1	2.00 ± 0.05 (0.079 ± 0.002)
Overall Tape Thickness	T	0.60 (0.024) MAX.
Tape Width	W	12.3 (0.484) MAX.
Reel Width	W_1	18.4 (0.724) MAX.
Quantity per Reel	--	3000

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