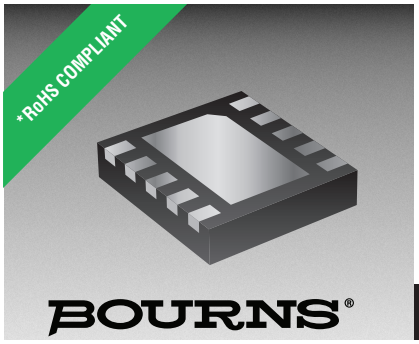


Features

- 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

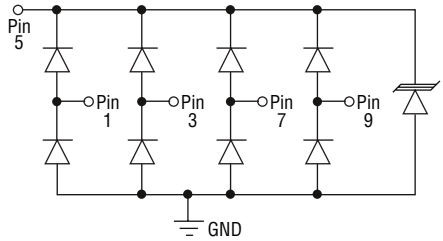
- FireWire, T1/E1, T3/E3 chip side protection
- Digital Visual Interface (DVI)
- Ethernet 10/100/1000 Base T
- High speed port protection
- Portable electronics

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 °C (Unless Otherwise Noted)

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

Electrical Characteristics (@ T_A = 25 °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 A 8/20 μs	V_C			12	V
Clamping Voltage[2] @ I_P = 15 A 8/20 μs	V_C			15	V
Clamping Voltage[2] @ I_P = 25 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.
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Users should verify actual device performance in their specific applications.
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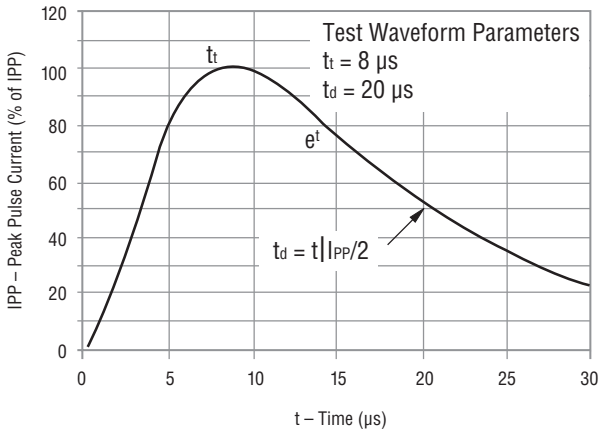
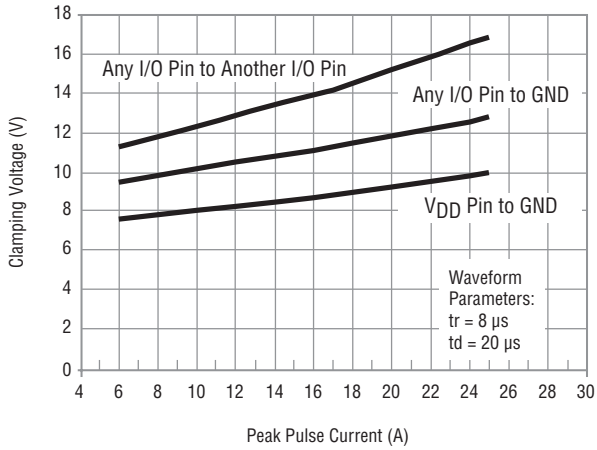
Rating & Characteristic Curves

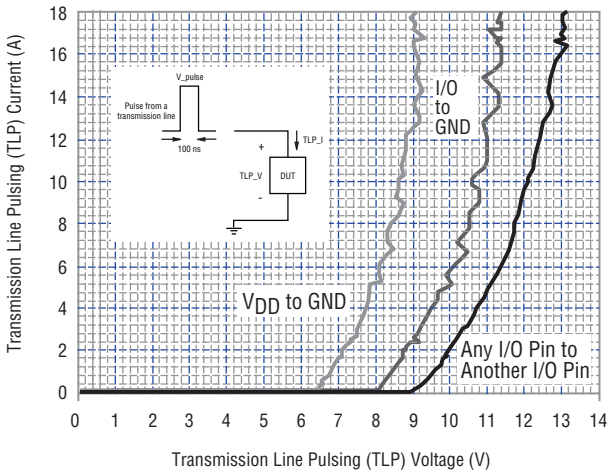
Pulse Waveform



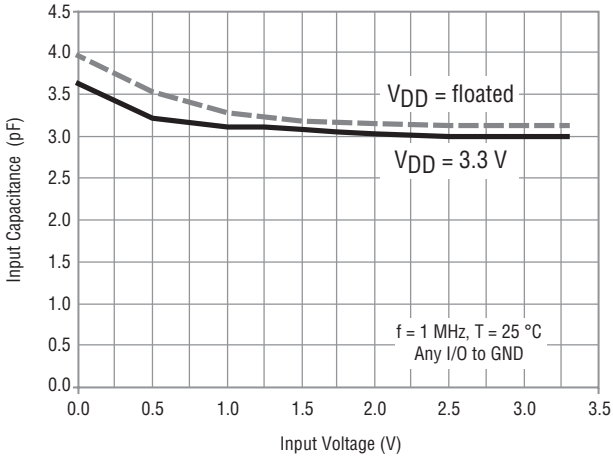
Typical Clamping Voltage vs Peak Pulse Current



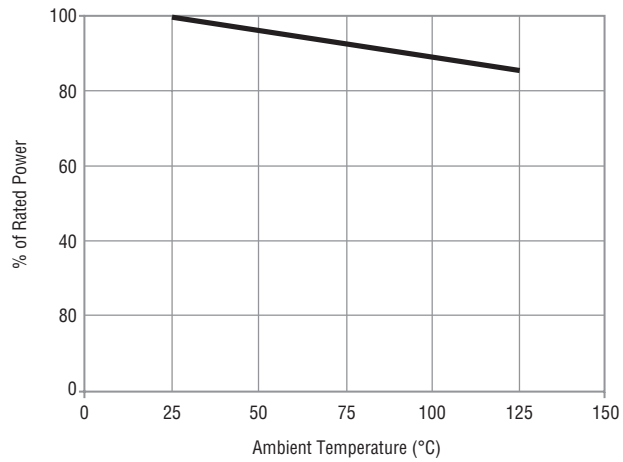
Typical Transmission Line Pulsing (TLP) Measurement



Typical Voltage vs. Capacitance



Typical Power Derating Curve



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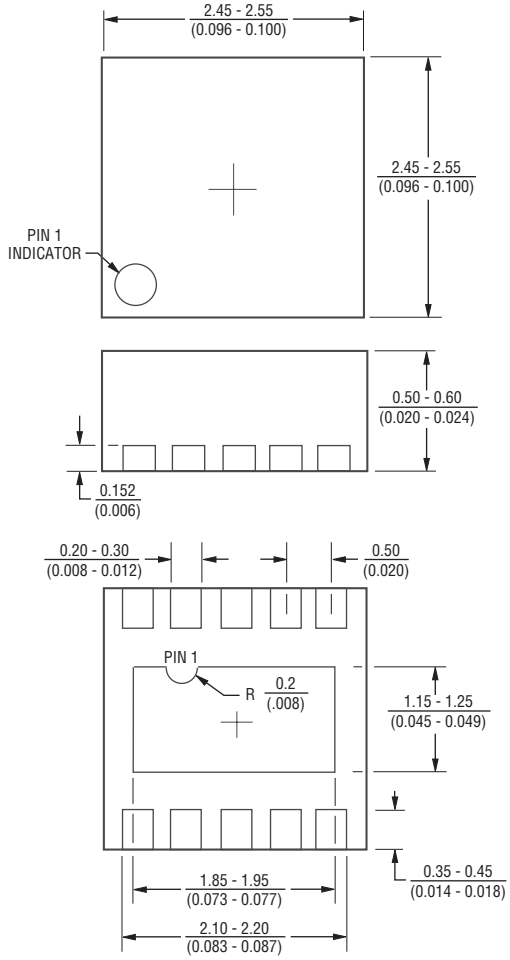
Product Dimensions

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 NA

Common Diode
Chip Diode

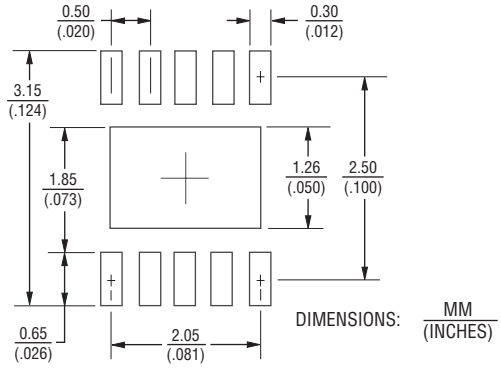
Package
DFN10 = DFN-10 Package

Reverse Working Peak Voltage
33 = 3.3 V_{RWM} (Volts)

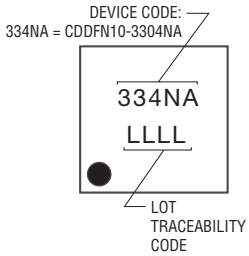
Number of Lines
04 = 4 Data Lines

Suffix
NA = Low Capacitance

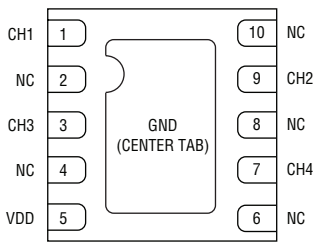
Recommended Footprint



Typical Part Marking



Pin Out



TOP VIEW

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

Environmental Specifications

Moisture Sensitivity Level 3
ESD Classification (HBM) 3B

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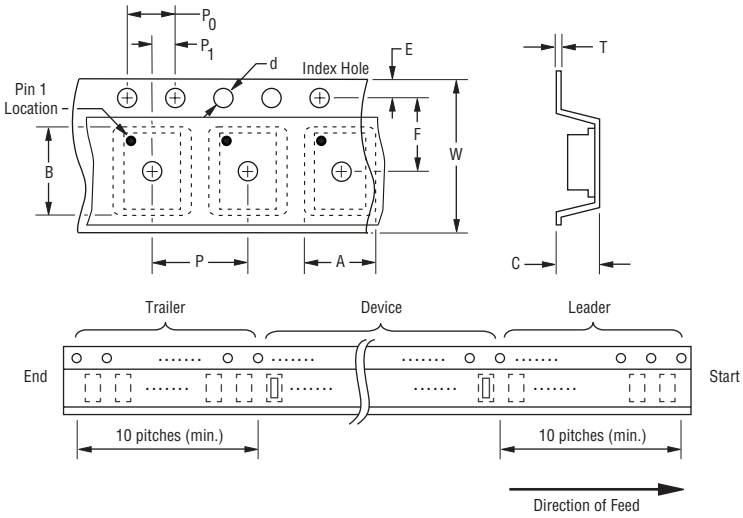
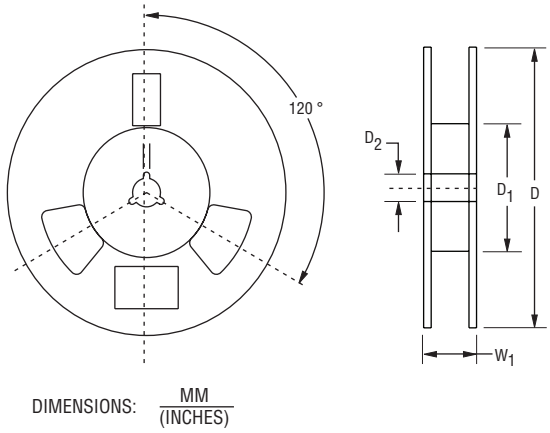
Packaging Information

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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