



## Features

- IEC 61000-4-2 (ESD) ±30 kV (Air/Contact)  
IEC 61000-4-5 (Lightning) 45 A (8/20 μs)
- ESD protection to IEC 61000-4-2 (Level 4)
- RoHS compliant\*

## Applications

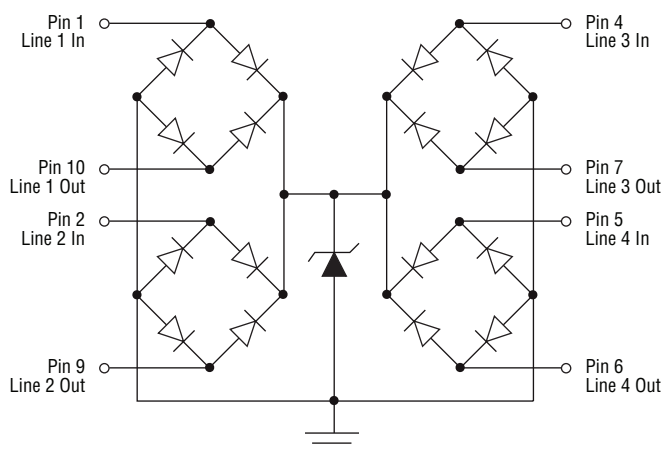
- WAN/LAN devices
- 10/100/1000 Ethernet

# CDDFN10-2574N - Surface Mount TVS Diode Array

## General Information

The Model CDDFN10-2574N device provides Electrostatic Discharge (ESD), Electrical Fast Transients (EFT), Lightning, and Cable Discharge Event (CDE) protection for high-speed data ports, meeting IEC 61000-4-2 (ESD) requirements. The Transient Voltage Suppressor array, protecting up to four data lines, offers a Working Peak Reverse Voltage of 2.5 V and a Minimum Breakdown Voltage of 3 V.

The DFN10 packaged device has a low typical capacitance of only 1.7 pF between I/O lines. This allows it to be used for protecting sensitive components used on high-speed interfaces. The small footprint of the device allows for flow-through routing on the PCB, helping to maintain matched impedances of the high-speed data lines.



## Absolute Maximum Ratings (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDDFN10-2574N	Unit
Peak Pulse Current (t <sub>p</sub> = 8/20 μS)	I <sub>pp</sub>	45	A
Operating Temperature	T <sub>OP</sub>	-55 to +85	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C

## Electrical Characteristics (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Working Peak Reverse Voltage	V <sub>WM</sub>			2.5	V
Breakdown Voltage @ 1 mA	V <sub>BR</sub>	3		7	V
Leakage Current @ V <sub>WM</sub>	I <sub>R</sub>			1	μA
Capacitance @ 1.25 V, f = 1 MHz (Between I/O Pins)	C <sub>IN</sub>		1.7	2.5	pF
Clamping Voltage @ 8/20 μs @ I <sub>pp</sub>	V <sub>C</sub>			11	V
ESD Protection per IEC 6-1000-4-2 Contact Discharge Air Discharge				±30 ±30	kV

\*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.

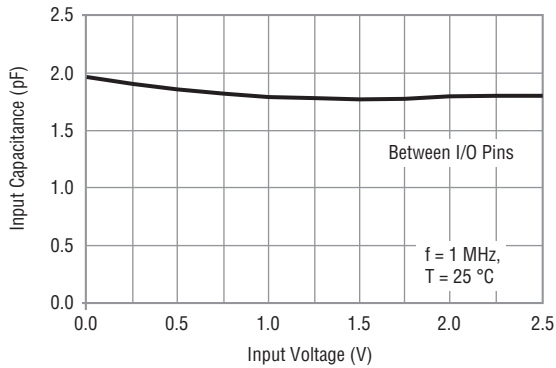
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# CDDFN10-2574N - Surface Mount TVS Diode Array

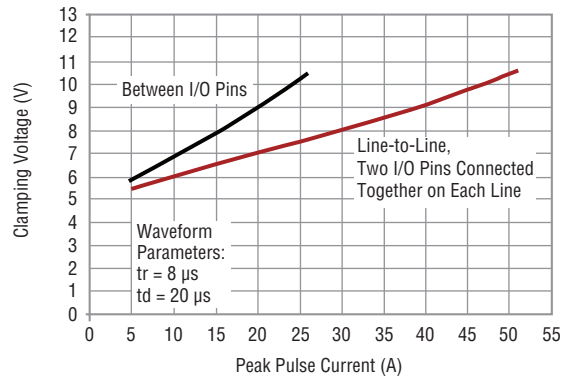
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## Rating & Characteristic Curves

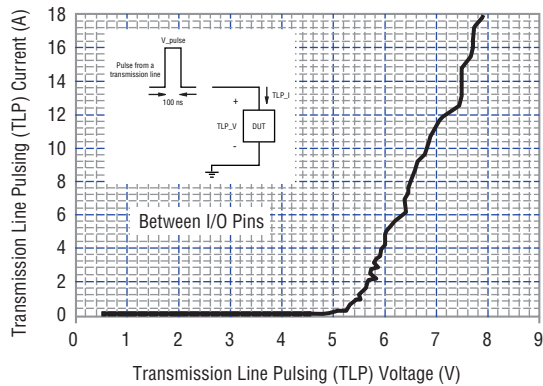
### Typical Capacitance vs. Voltage



### Typical Clamping Voltage vs. Peak Pulse Current



### Typical Transmission Line Pulsing (TLP)



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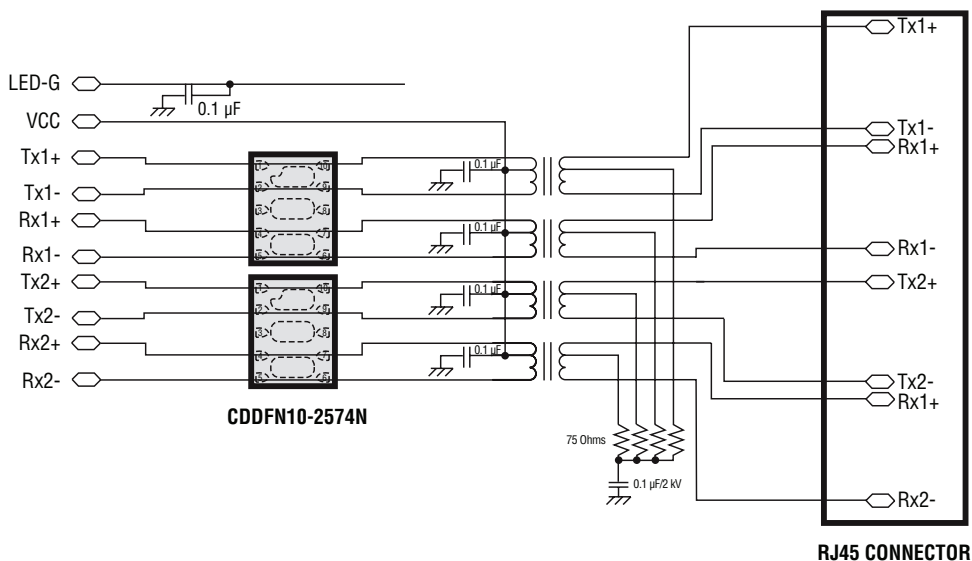
# CDDFN10-2574N - Surface Mount TVS Diode Array

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## Reference Application

The Bourns® Model CDDFN10-2574N is designed to protect four high-speed data lines operating at 2.5 volts from system ESD/EFT/Lightning pulses. The use of a DFN10 package using a “feed-through” layout provides minimal impedance change on the high-speed data line, while the low capacitance performance of the device limits signal degradation on each channel.

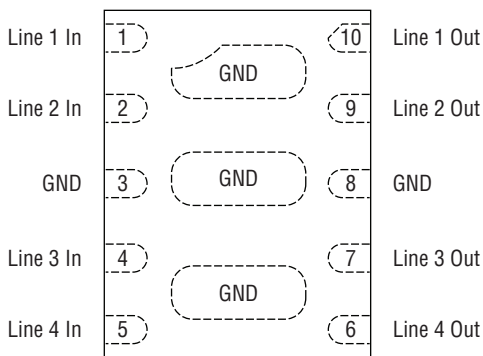
Gigabit Ethernet LAN Port



## Typical Part Marking

CDDFN10-2574N .....2574

## Device Pinout



## How to Order

Common Code \_\_\_\_\_ **CD DFN10 - 2574 N**  
 Chip Diode  
 Package \_\_\_\_\_  
 DFN10 = DFN-10 Package  
 Model Designator \_\_\_\_\_  
 2574 = 2.5 V<sub>RWM</sub> (Volts)  
 Suffix \_\_\_\_\_  
 N = Low Capacitance

Specifications are subject to change without notice.

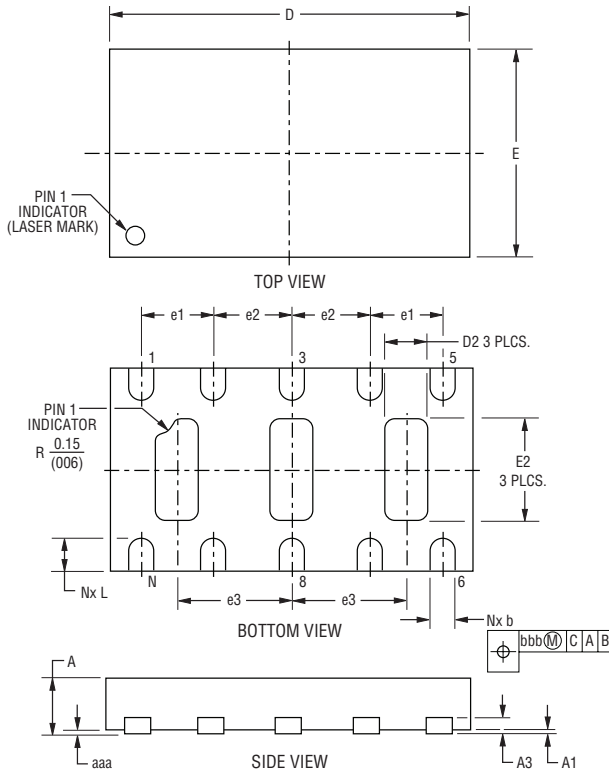
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# CDDFN10-2574N - Surface Mount TVS Diode Array



## Product Dimensions

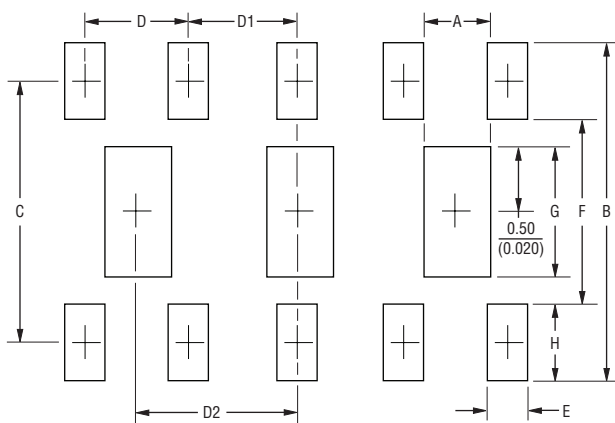


Symbol	Dimension		
	Min.	Nom.	Max.
A	0.51 (0.020)	0.55 (0.022)	0.60 (0.024)
A1	0.00 (0.000)	0.02 (0.001)	0.05 (0.002)
A3		0.153 REF. (0.006)	
b	0.15 (0.006)	0.20 (0.008)	0.25 (0.010)
D	2.90 (0.114)	3.00 (0.118)	3.10 (0.122)
E	1.90 (0.075)	2.00 (0.079)	2.10 (0.083)
e1		0.6 BSC (0.024)	
e2		0.65 BSC (0.026)	
e3		0.95 BSC (0.037)	
D2	0.25 (0.010)	0.35 (0.014)	0.45 (0.018)
E2	0.95 (0.037)	1.00 (0.039)	1.05 (0.041)
L	0.25 (0.010)	0.30 (0.012)	0.35 (0.014)
aaa		0.08 (0.003)	
bbb		0.10 (0.004)	

DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

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

## Recommended Footprint



Symbol	Dimension
A	0.40 (0.016)
B	2.56 (0.101)
C	1.98 (0.078)
D	0.60 (0.024)
D1	0.65 (0.026)
D2	0.95 (0.037)
E	0.25 (0.010)
F	1.40 (0.055)
G	1.00 (0.039)
H	0.58 (0.023)

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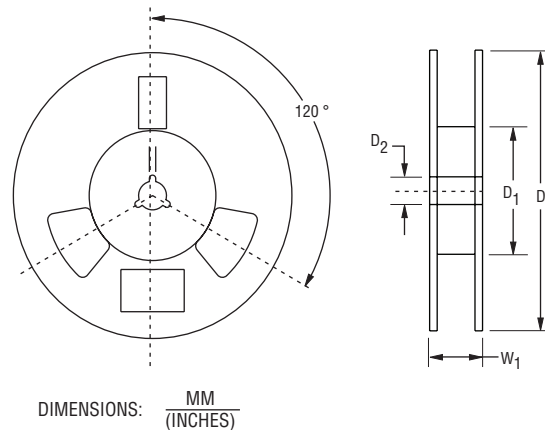
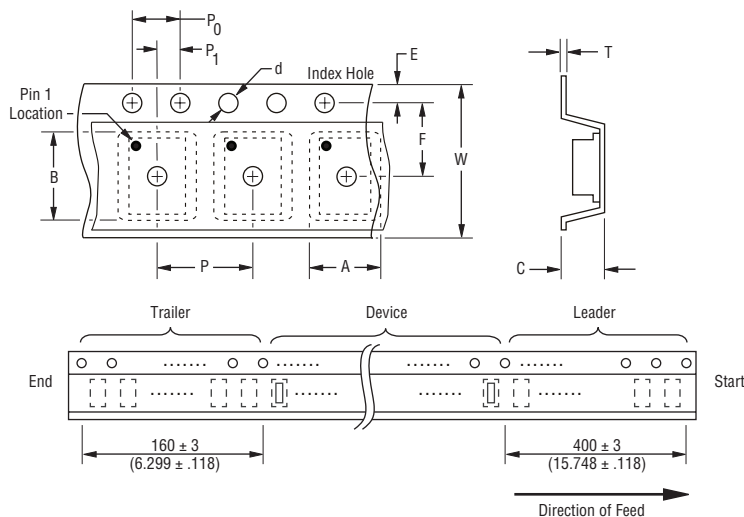
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# CDDFN10-2574N - Surface Mount TVS Diode Array

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## Packaging Information

The product is packaged in a 12 mm x 4 mm tape and reel format per EIA-481-D standard.



Item	Symbol	Dimension
Carrier Width	A	$\frac{2.3 \pm 0.1}{(0.091 \pm 0.004)}$
Carrier Length	B	$\frac{3.3 \pm 0.1}{(0.13 \pm 0.004)}$
Carrier Depth	C	$\frac{0.7 \pm 0.1}{(0.028 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.5 \pm 0.1}{(0.059 \pm 0.004)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$
Reel Inner Diameter	D <sub>1</sub>	$\frac{50.0}{(1.969)}$ MIN.
Feed Hole Diameter	D <sub>2</sub>	$\frac{13.0 \pm 0.5}{(0.512 \pm 0.02)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.1}{(0.069 \pm 0.004)}$
Punch Hole Position	F	$\frac{5.5 \pm 0.1}{(0.217 \pm 0.004)}$
Punch Hole Pitch	P	$\frac{4.0 \pm 0.1}{(0.157 \pm 0.004)}$
Sprocket Hole Pitch	P <sub>0</sub>	$\frac{4.0 \pm 0.1}{(0.157 \pm 0.004)}$
Embossment Center	P <sub>1</sub>	$\frac{2.0 \pm 0.05}{(0.079 \pm 0.002)}$
Overall Tape Thickness	T	$\frac{0.3 \pm 0.05}{(0.012 \pm 0.002)}$
Tape Width	W	$\frac{12.00 \pm 0.3}{(0.472 \pm 0.012)}$
Reel Width	W <sub>1</sub>	$\frac{15.8}{(0.622)}$ MAX.
Quantity per Reel	--	3000

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