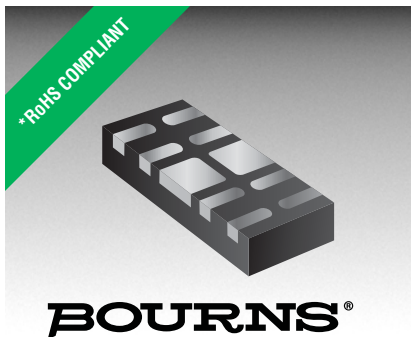




Features

- RoHS compliant*
- Low capacitance - 0.5 pF
- ESD protection >15 kV

Applications

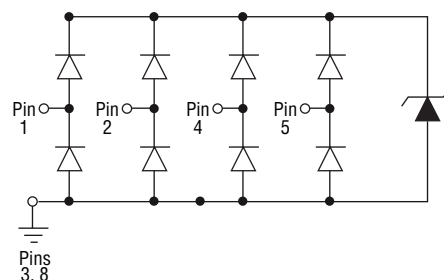
- HDMI 1.4
- Digital Visual Interface (DVI)
- USB 3.0 / USB OTG
- Memory protection
- SIM card ports

CDDFN10-0524P - Surface Mount TVS Diode Array

General Information

The CDDFN10-0524P device provides ESD, EFT and Surge protection for high-speed data ports meeting IEC 61000-4-2 (ESD) requirements. The Transient Voltage Suppressor array, protecting up to 4 data lines, offers a Working Peak Reverse Voltage of 5 V and Minimum Breakdown Voltage of 6 V.

The DFN10 packaged device will mount directly onto the industry standard DFN10 footprint. Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and their flat configuration minimizes roll away.



Absolute Maximum Ratings (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	CDDFN10-0524P	Unit
Peak Pulse Power ($t_p = 8/20 \mu\text{s}$)	P_{pp}	30	W
Peak Pulse Current ($t_p = 8/20 \mu\text{s}$)	I_{pp}	3.8	A
Operating Voltage (I/O pin - GND)	V_{DC}	6	V
Storage Temperature	T_{STG}	-55 to +150	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-55 to +85	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Breakdown Voltage @ 1 mA	V_{BR}	6			V
Reverse Standoff Voltage	V_{RWM}			5	V
Forward Voltage $I_f = 15 \text{ mA}$ (Gnd to I/O Pin)	V_F		0.9	1.1	V
Channel Leakage Current $V_{RWM} = 5 \text{ V}$, (I/O Pin to Gnd)	I_D			1.5	μA
Clamping Voltage IEC 61000-4-2 +6 kV, Contact mode (I/O Pin to Gnd)	V_C		12		V
Channel Input Capacitance $V_{pin3,8}=0 \text{ V}$, $V_{in}=2.5 \text{ V}$, $f=1 \text{ MHz}$ (I/O Pin to Gnd)	C_{IN}		0.5	0.65	pF
Channel to Channel Input Capacitance $V_{pin3,8}=0 \text{ V}$, $V_{in}=2.5 \text{ V}$, $f=1 \text{ MHz}$ (Between I/O pins)	C_{CROSS}		0.04	0.08	pF
ESD Protection per IEC 6-1000-4-2 Contact Discharge		8		10	kV
Air Discharge		15		15	
ESD Dynamic Turn-on Resistance (any I/O Pin to Gnd)	$R_{dynamic}$		0.3		Ω
EFT Protection per IEC 61000-4-4 @ 5/50 ns		40			A
Surge Protection per IEC 61000-4-5 @ 8/20 μs				3.8	A

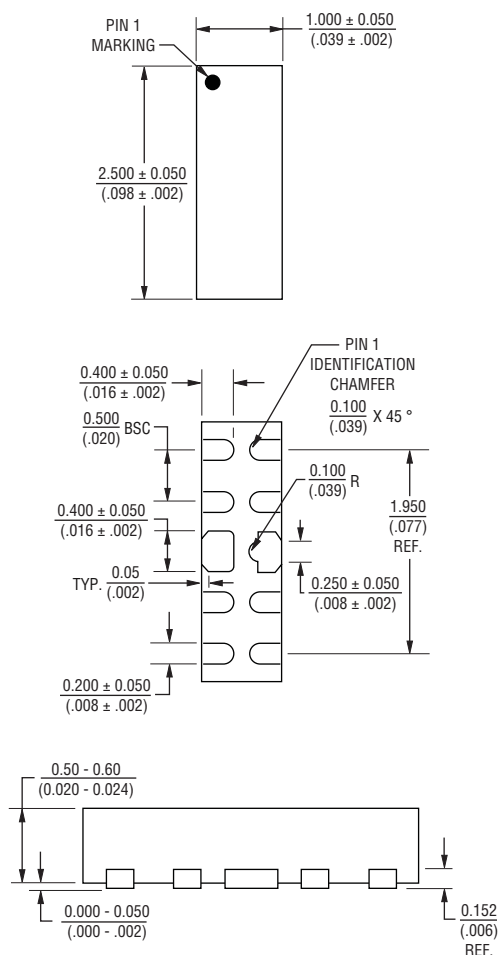
*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

CDDFN10-0524P - Surface Mount TVS Diode Array

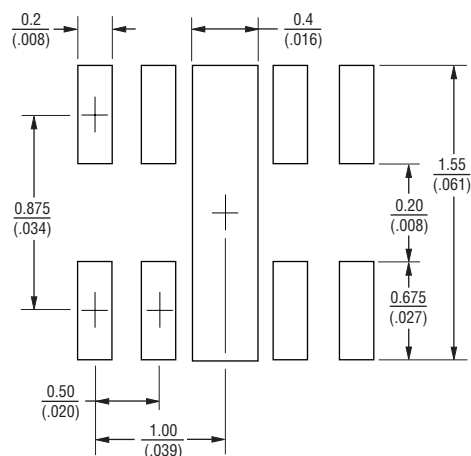
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Product Dimensions

This is a molded DFN10 package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 7 mg and has a flammability rating of UL 94V-0.



Recommended Footprint



Typical Part Marking

CDDFN10-0524P524

How to Order

CD DFN10 - 05 24 P

Common Diode _____

Chip Diode _____

Package _____

DFN10 = DFN-10 Package

Working Peak Reverse Voltage _____

05 = 5 V_{RWM} (Volts)

Number of Lines _____

24 = 2 Ground / 4 Data Lines

Suffix _____

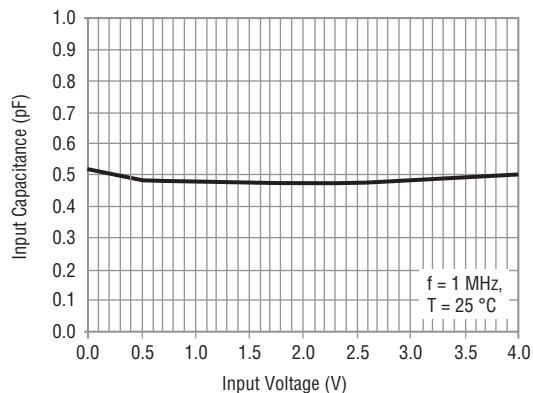
P = Ultra-low Capacitance

CDDFN10-0524P - Surface Mount TVS Diode Array

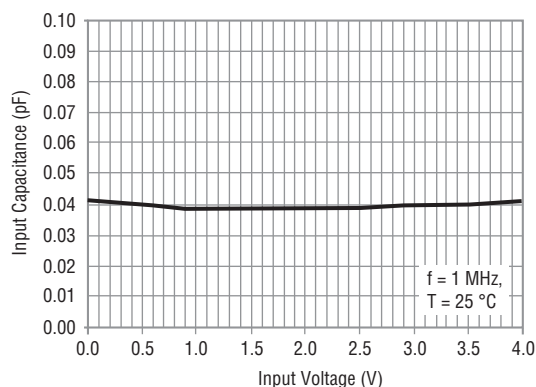
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Rating & Characteristic Curves

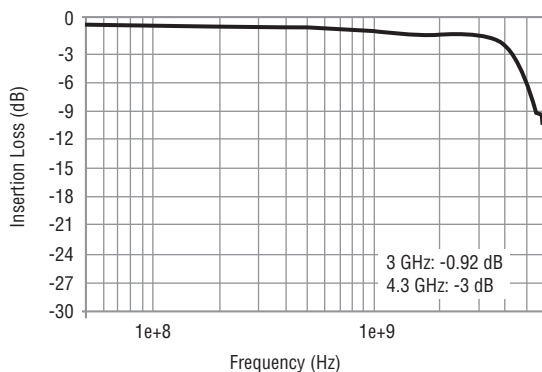
Typical Variation C_{IN} vs V_{IN}



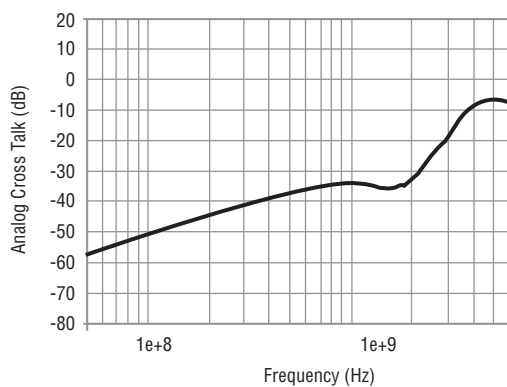
Typical Variation of $C_{IO\text{-}to\text{-}IO}$ vs V_{IN}



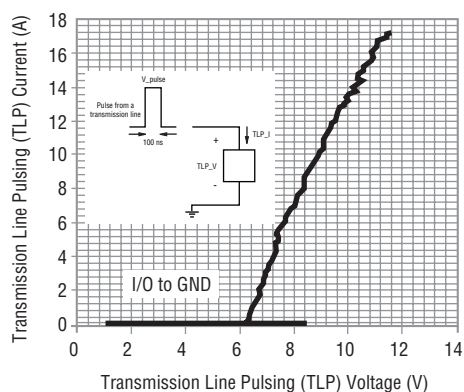
Insertion Loss S_{21} (I/O-to-GND)



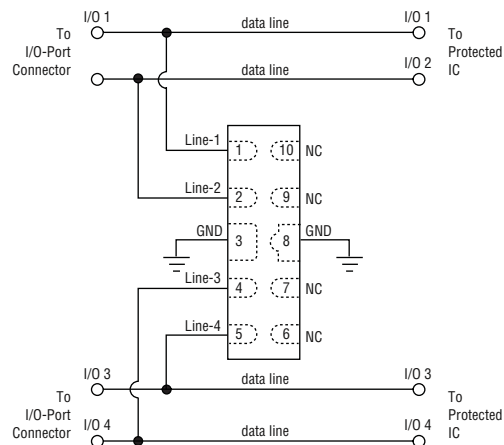
Analog Cross Talk



Transmission Line Pulsing (TLP)



Data Lines Connection

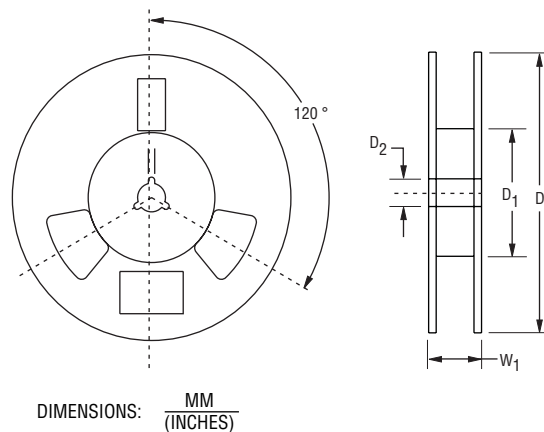
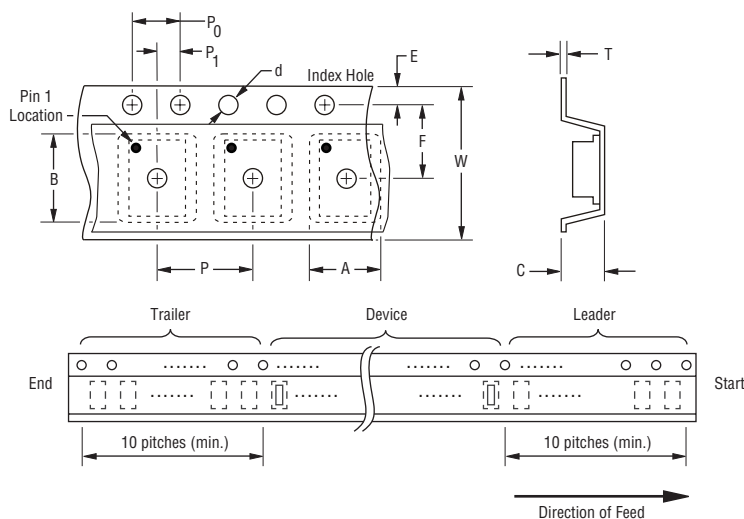


CDDFN10-0524P - Surface Mount TVS Diode Array

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Packaging Information

The product is packaged in an 8 mm x 4 mm tape and reel format per EIA-481-A standard.



Item	Symbol	DFN-10
Carrier Width	A	$\frac{1.45 \pm 0.05}{(0.057 \pm 0.002)}$
Carrier Length	B	$\frac{2.95 \pm 0.05}{(0.116 \pm 0.002)}$
Carrier Depth	C	$\frac{0.90 \pm 0.05}{(0.035 \pm 0.002)}$
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	$\frac{50.0}{(1.969)} \text{ MIN.}$
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	$\frac{14.4}{(0.567)} \text{ MAX.}$
Quantity per Reel	--	3000

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