

Features

- Bidirectional TVS
- Low capacitance - 12 pF
- ESD protection >15 kV
- Fits 0402 footprint

Applications

- Computers and peripherals
- Communication systems
- Audio & video equipment
- Portable instrumentation

CDDFN2-TxxC Series - Surface Mount TVS Diode

General Information

The CDDFN2-TxxC Series provides ESD and EFT protection for external ports of electronic devices such as cellular phones, hand held electronics and other portable electronic devices.

The device measures 1.05 mm x 0.65 mm and is available in a DFN-2 package and is intended to be mounted directly onto an FR4 printed circuit board. The device will fit an 0402 footprint.

The device is designed to meet IEC 61000-4-2(ESD) and IEC 61000-4-4(EFT) protection requirements.



Absolute Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDDFN2-			Unit
		5.0C	12C	24C	
Peak Pulse Power @ 8/20 μs	P _{pk}	75	25	47	W
Peak Pulse Current @ 8/20 μs	I _{pp}	5	1	1	A
Operating Temperature	T _{OPR}	-40 to +125			°C
Storage Temperature	T _{STG}	-55 to +150			°C

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDDFN2-			Unit
		5.0C	12C	24C	
Maximum Working Peak Voltage	V _{WM}	5.0	12	24	V
Minimum Breakdown Voltage @ 1 mA	V _{BR}	6.0	13	25	V
Maximum Leakage Current @ V _{WM}	I _L	2.0			μA
Typical Capacitance @ 0 V 1 MHz	C _J	15	12	10	pF
Maximum Capacitance @ 0 V 1 MHz	C _J	20			pF
Maximum Clamping Voltage @ I _{pp} 8/20 μs	V _C	15	25	47	V
ESD Protection per IEC 61000-4-2					
Minimum Contact Discharge	ESD	8			kV
Minimum Air Discharge	ESD	15			kV

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*RoHS Directive 2002/95/EC Jan 27, 2003 including Annex.

Specifications are subject to change without notice.

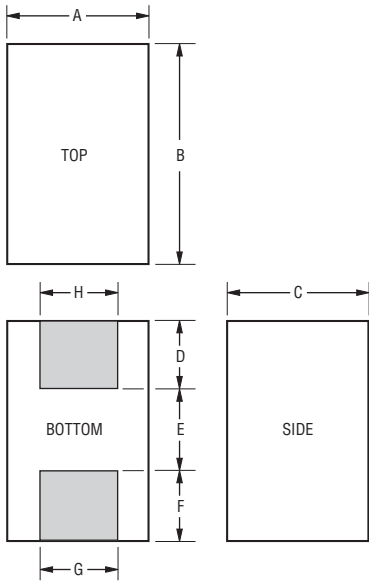
Customers should verify actual device performance in their specific applications.

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Product Dimensions

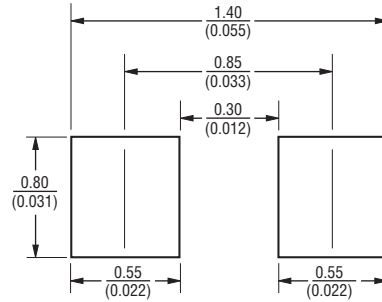
This is a Molded DFN-2 package with lead free 100 % Au plating on the terminations. It weighs approximately 10 mg.



Dimensions	
A	$\frac{0.55-0.65}{(0.022-0.026)}$
B	$\frac{0.95- 1.05}{(0.037-.041)}$
C	$\frac{0.45-0.55}{(0.018-.022)}$
D	$\frac{0.30}{(0.012)}$ TYP.
E	$\frac{0.43}{(0.017)}$ TYP.
F	$\frac{0.30}{(0.012)}$ TYP.
G	$\frac{0.50}{(0.020)}$ TYP.
H	$\frac{0.50}{(0.020)}$ TYP.

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

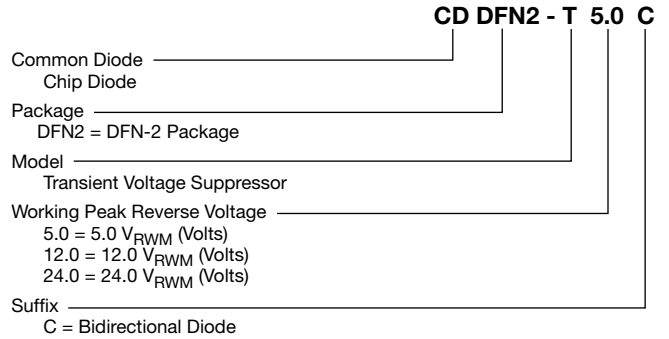
Recommended PCB Footprint



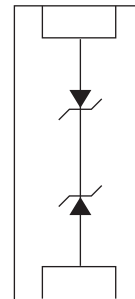
Typical Part Marking

CDDFN2-T5.0C	E5
CDDFN2-T12C	E2
CDDFN2-T24C	E4

How to Order



Block Diagram

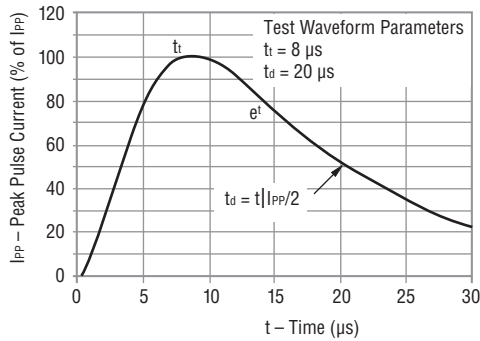


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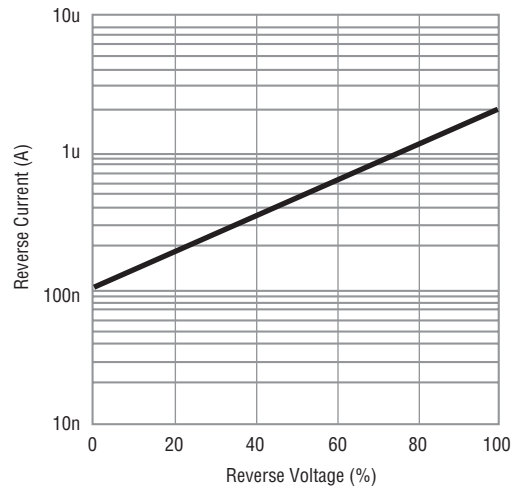


Rating & Characteristic Curves

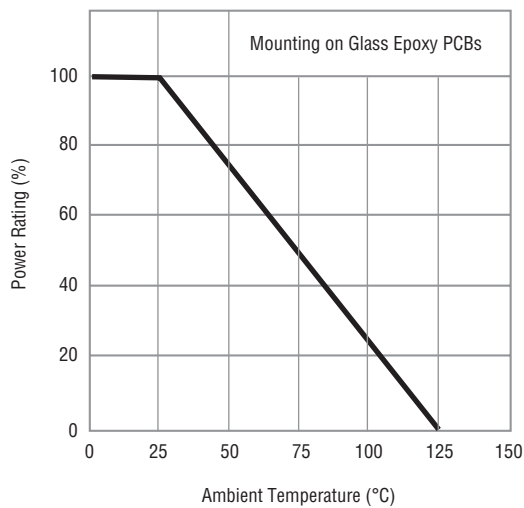
Pulse Waveform



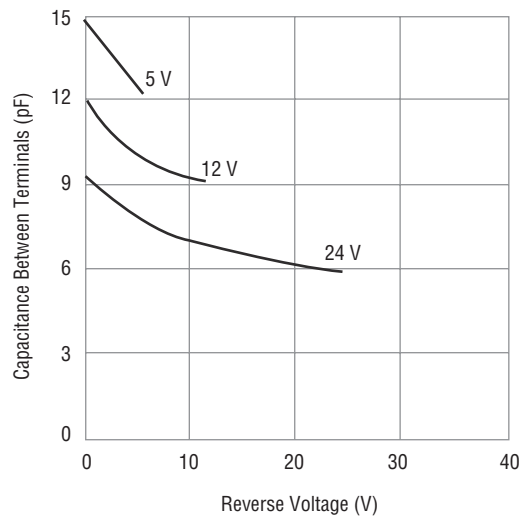
Reverse Characteristics



Power Derating Curve



Capacitance Between Terminals

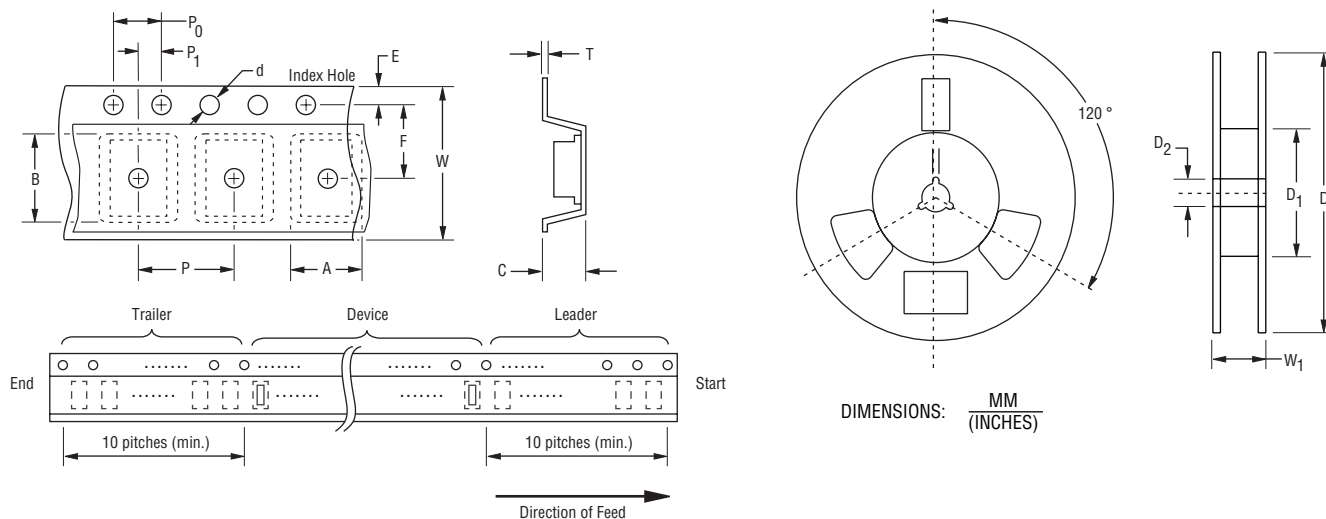


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Packaging Information

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



Item	Symbol	DFN-2
Carrier Width	A	$\frac{0.80 \pm 0.10}{(0.031 \pm 0.004)}$
Carrier Length	B	$\frac{1.20 \pm 0.10}{(0.047 \pm 0.004)}$
Carrier Depth	C	$\frac{0.70 \pm 0.10}{(0.027 \pm 0.004)}$
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	$\frac{50.0}{(1.969)}$ 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	$\frac{14.4}{(0.567)}$ MAX.
Quantity per Reel	--	5000

REV. 03/11

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