

Features

- Bidirectional TVS 3.3 V
- Low capacitance - 23 pF
- ESD protection >25 kV
- Fits 0402 footprint

Applications

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

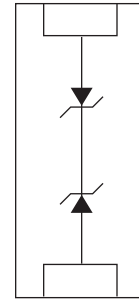
CDDFN2-T3.3C - Surface Mount TVS Diode

General Information

The CDDFN2-T3.3C device provides ESD, EFT and Surge protection for external ports of electronic devices such as cellular phones, handheld electronics and other portable electronic devices.

The device measures 1.0 mm x 0.60 mm x 0.55 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 a 0402 footprint.

The device is designed to meet IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC61000-4-5 (Surge) protection requirements.



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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Supply Voltage	V _{DC}	-3.8		3.8	V
Peak Pulse Current @ 8/20 μs	I _{pp}			5	A
Operating Temperature	T _{OPR}	-55	+25	+125	°C
Storage Temperature	T _{STG}	-55	+25	+150	°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Working Peak Voltage	V _{WM}		3.0	3.3	V
Breakdown Voltage @ 1 mA	V _{BR}	4		6.5	V
Leakage Current @ 5 V	I _L		0.05	0.5	μA
Capacitance @ 0 V, 1 MHz	C _J		23	28	pF
Clamping Voltage @ I _P = 1 A, 8/20 μs	V _C		4.5	5.5	V
Clamping Voltage @ I _{PP} = 5 A, 8/20 μs	V _C		6	7	V
ESD Protection per IEC 61000-4-2					
Contact Discharge	ESD	8		30	kV
Air Discharge	ESD	15		30	kV
EFT Protection per IEC 61000-4-4 @ 5/50 nS	EFT			80	A
Surge Protection per IEC 61000-4-5 @ 8/20 μs	Surge			5	A



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

Specifications are subject to change without notice.

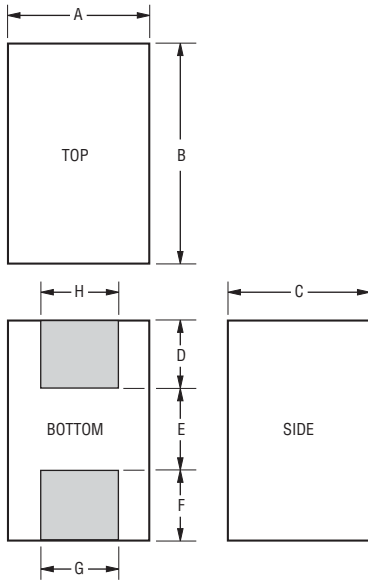
Customers should verify actual device performance in their specific applications

CDDFN2-T3.3C - Surface Mount TVS Diode

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Product Dimensions

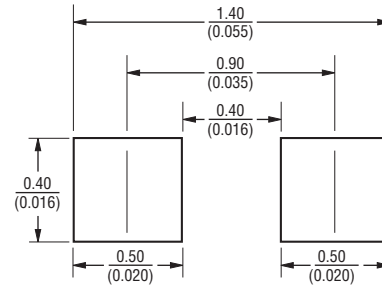
This is a Molded DFN-2 package with lead free 100 % Sn plating on the terminations. It weighs approximately 30 mg.



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	$\frac{0.275-0.325}{(0.011-0.013)}$
E	$\frac{0.432}{(0.017)}$
F	$\frac{0.275-0.325}{(0.011-0.013)}$
G	$\frac{0.275-0.325}{(0.011-0.013)}$
H	$\frac{0.275-0.325}{(0.011-0.013)}$

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

Recommended PCB Footprint



Typical Part Marking

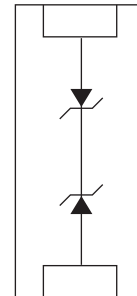
CDDFN2-T3.3C FX

How to Order

CD DFN2 - T 3.3 C

Common Diode _____
 Chip Diode _____
 Package _____
 DFN2 = DFN-2 Package _____
 Model _____
 Transient Voltage Suppressor _____
 Working Peak Reverse Voltage _____
 3.3 = 3.3 V_{RWM} (Volts) _____
 Suffix _____
 C = Bidirectional Diode

Block Diagram



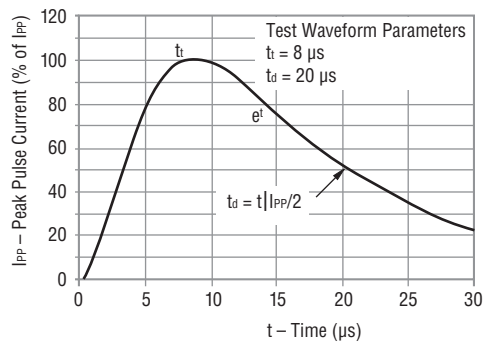
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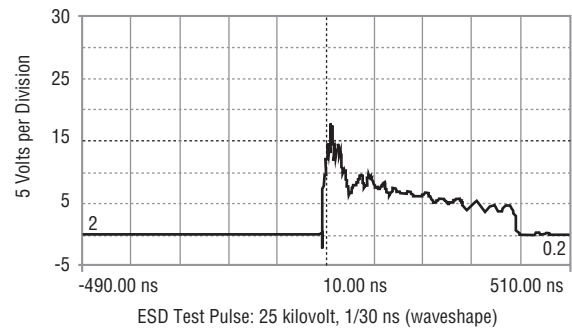
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Performance Graphs

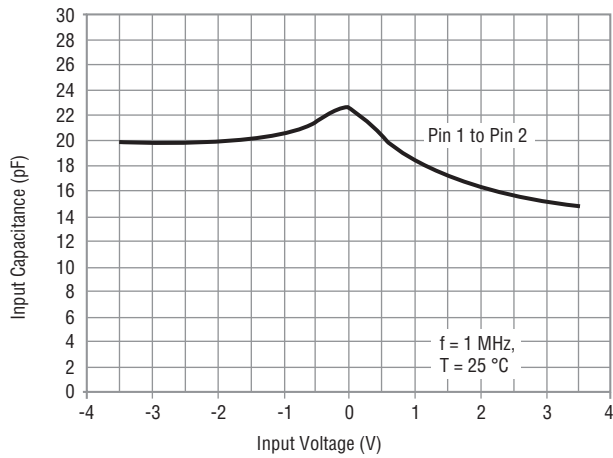
Pulse Waveform



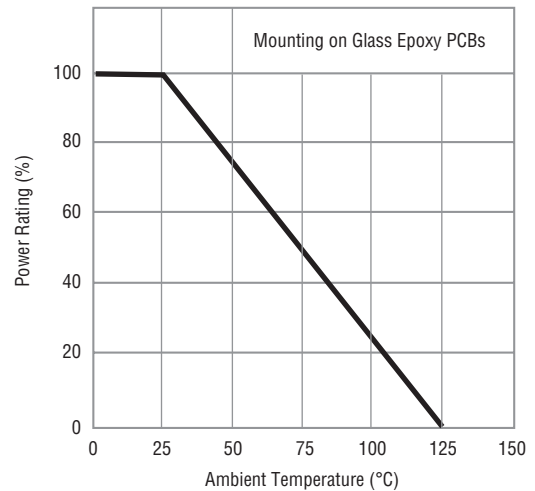
Overshoot & Clamping Voltage



Typical Capacitance Variation of C_{IN} vs V_{IN}



Power Derating Curve



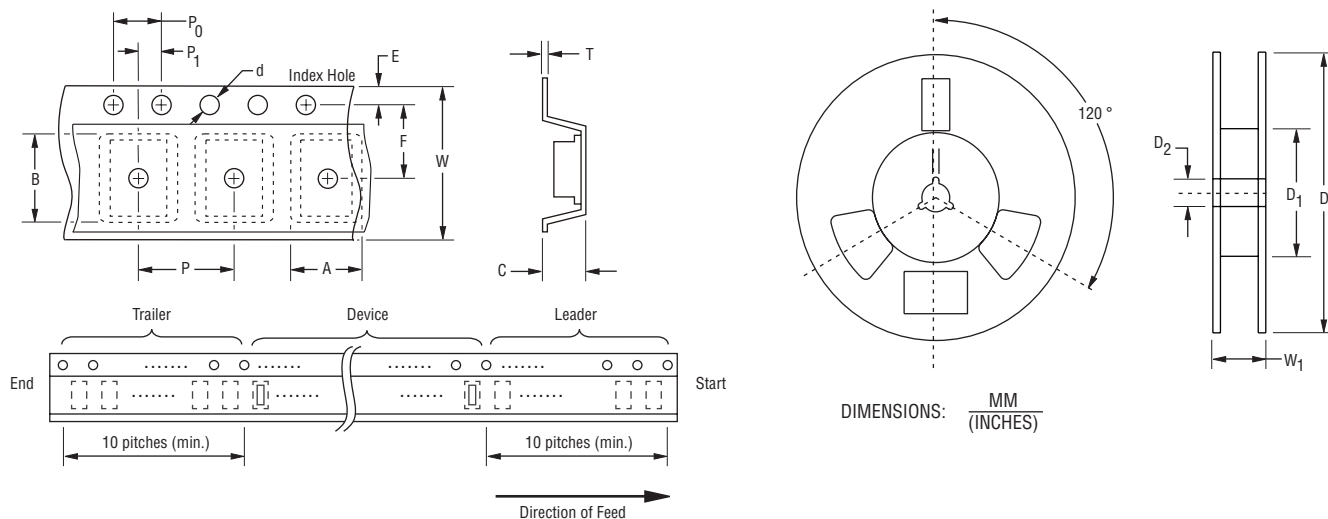
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Packaging Information

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

07/09

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