

## 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

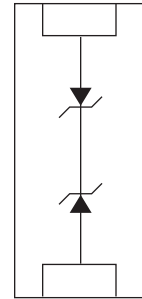
# CDDFN2-T3.3C - Surface Mount TVS Diode

## 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<sub>A</sub> = 25 °C Unless Otherwise Noted)

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

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Working Peak Voltage	V <sub>WM</sub>		3.0	3.3	V
Breakdown Voltage @ 1 mA	V <sub>BR</sub>	4		6.5	V
Leakage Current @ 5 V	I <sub>L</sub>		0.05	0.5	μA
Capacitance @ 0 V, 1 MHz	C <sub>J</sub>		23	28	pF
Clamping Voltage @ I <sub>p</sub> = 1 A, 8/20 μs	V <sub>C</sub>		4.5	5.5	V
Clamping Voltage @ I <sub>pp</sub> = 5 A, 8/20 μs	V <sub>C</sub>		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



Asia-Pacific: Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116

Europe: Tel: +41-41 768 5555 • Fax: +41-41 768 5510

The Americas: Tel: +1-951 781-5500 • Fax: +1-951 781-5700

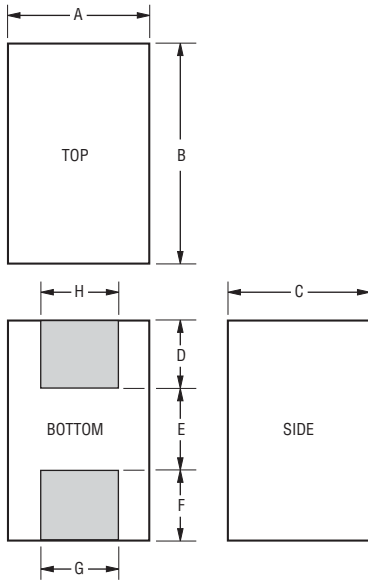
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# CDDFN2-T3.3C - Surface Mount TVS Diode



## Product Dimensions

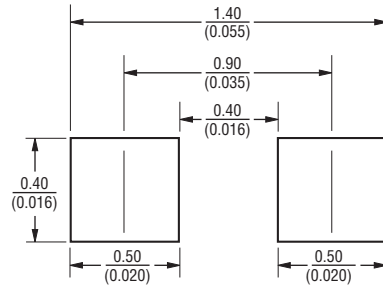
This is a Molded DFN-2 package with lead free 100 % Sn plating on the terminations. It weighs approximately 30 mg.



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

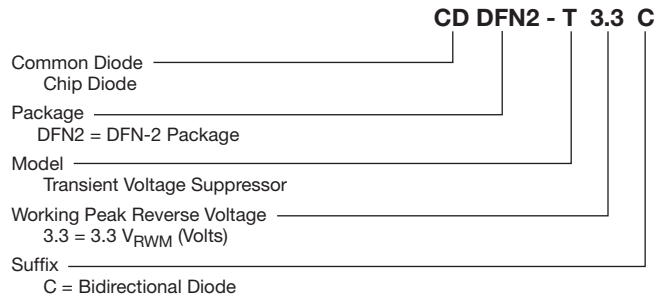
## Recommended PCB Footprint



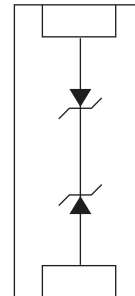
## Typical Part Marking

CDDFN2-T3.3C ..... FX

## How to Order



## Block Diagram

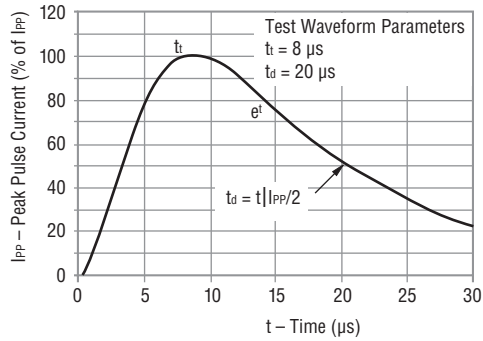


# CDDFN2-T3.3C - Surface Mount TVS Diode

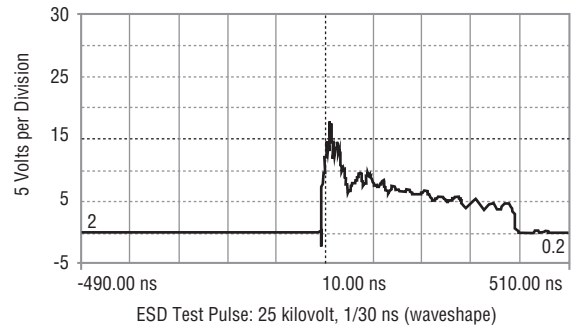
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## Performance Graphs

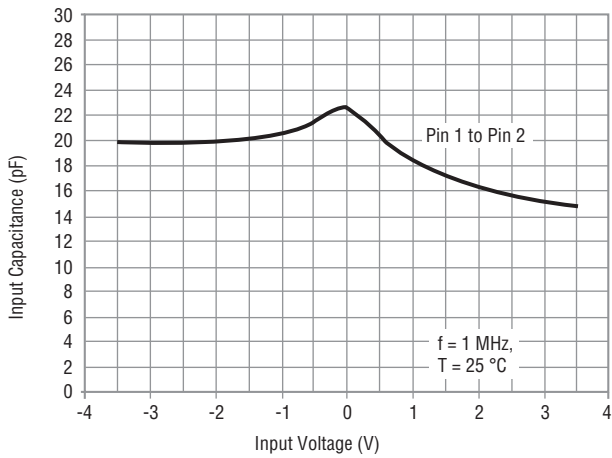
### Pulse Waveform



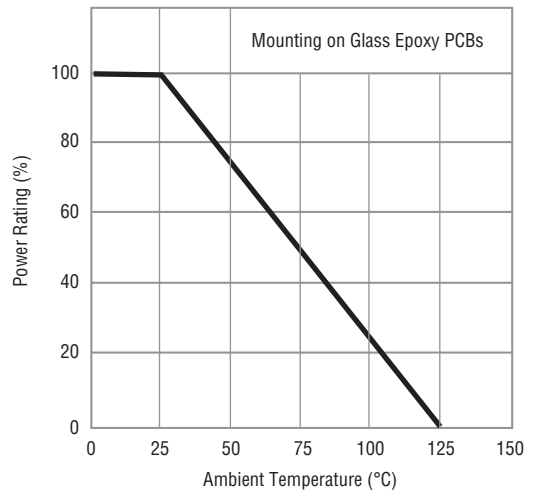
### Overshoot & Clamping Voltage



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



### Power Derating Curve

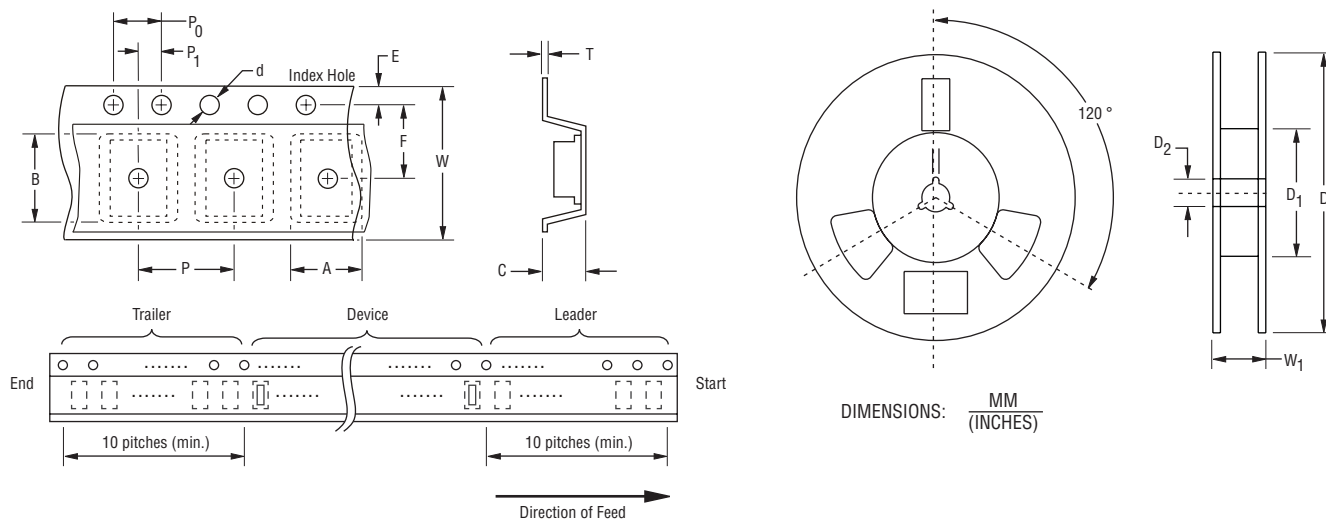


# CDDFN2-T3.3C - Surface Mount TVS Diode

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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 <sub>1</sub>	$\frac{50.0}{(1.969)}$ MIN.
Feed Hole Diameter	D <sub>2</sub>	$\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$
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 <sub>0</sub>	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P <sub>1</sub>	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
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 <sub>1</sub>	$\frac{14.4}{(0.567)}$ MAX.
Quantity per Reel	--	5000

07/09

Specifications are subject to change without notice.  
Customers should verify actual device performance in their specific applications