



Features

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



This series is obsolete and not recommended for new designs.

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 |



WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*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.

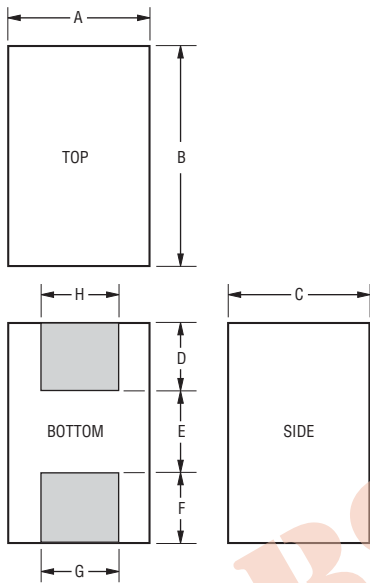
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CDDFN2-TxxC Series - Surface Mount TVS Diode



Product Dimensions

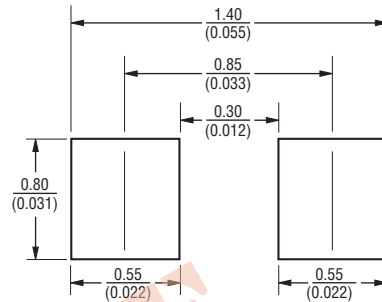
This is a Molded DFN-2 package with lead free 100 % Au plating on the terminations. It weighs approximately 10 mg.



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

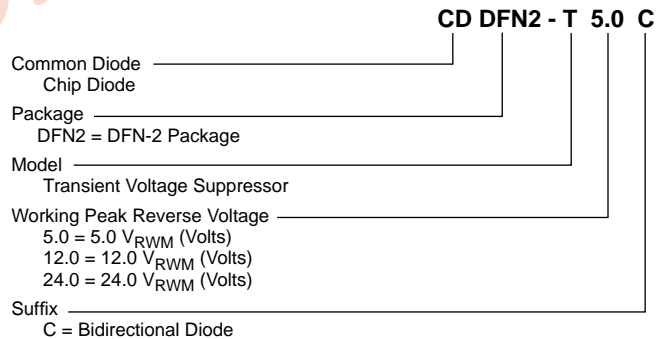
Recommended PCB Footprint



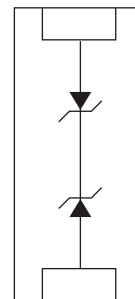
Typical Part Marking

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

How to Order



Block Diagram

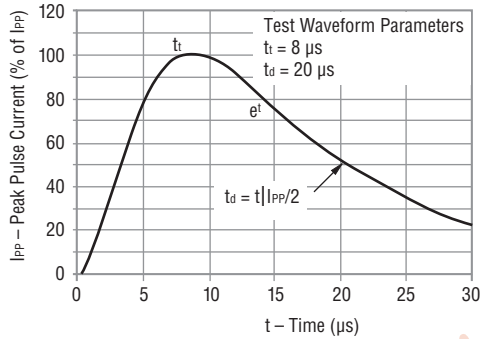


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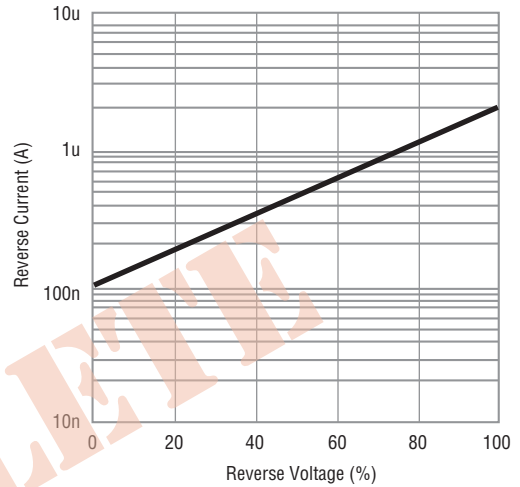
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Rating & Characteristic Curves

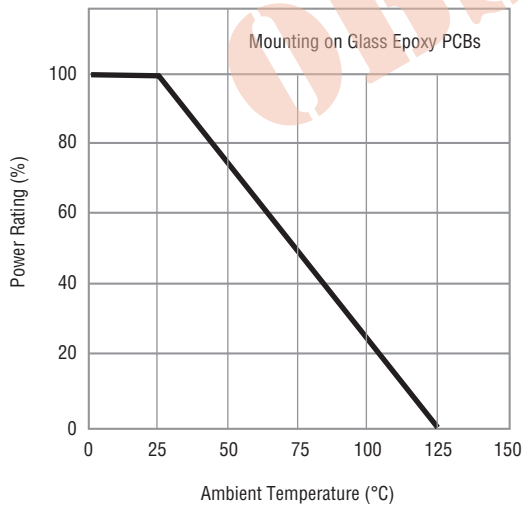
Pulse Waveform



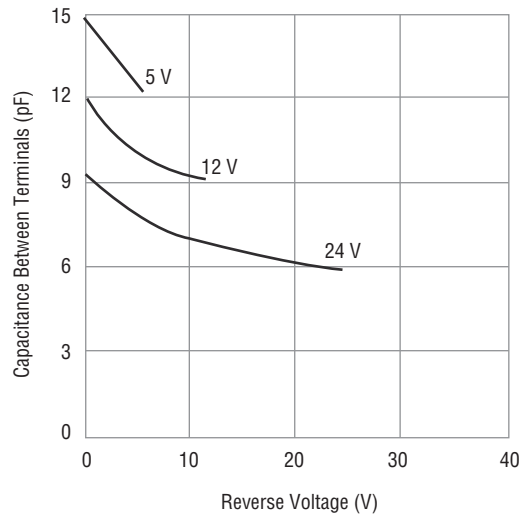
Reverse Characteristics



Power Derating Curve



Capacitance Between Terminals

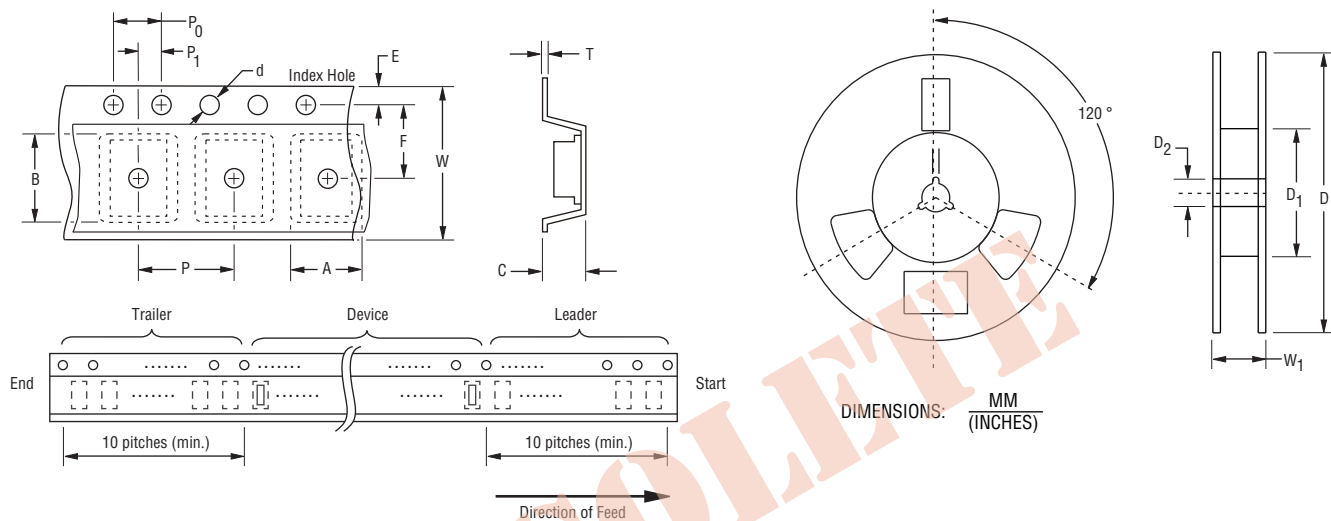


CDDFN2-TxxC Series - Surface Mount TVS Diode

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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 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. 09/19

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