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Features

- Bidirectional 2 volt TVS diode
- Low capacitance - <0.2 pF
- High ESD protection
- Fits 0201 footprint
- RoHS compliant*
- Halogen free**

Applications

- 2.5G/5G/10GbE
- Thunderbolt™
- USB4® / USB 3.1 / USB 3.0
- DisplayPort™

CD0201-T2.0LC – Surface Mount TVS Diode

General Information

The Bourns® Model CD0201-T2.0LC is an ultra-low capacitance bidirectional device tailored to protect ultra-high speed data lines. This model features high ESD protection: ±15 kV (air) and ±12 kV (contact) per IEC 61000-4-2, as well as superior surge clamping capability: 4 V @ 7 A (8/20 µs per IEC 61000-4-5).

The Model CD0201-T2.0LC is housed in a compact 0201 package (0.6 mm x 0.3 mm x 0.3 mm), minimizing PCB layout space and easing impedance matching.

This device is designed to protect one data line where the signal polarities are both positive and negative with respect to ground. Model CD0201-T2.0LC is not recommended to be used on lines connected to the DC supply.



Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

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

Parameter	Symbol	Value	Unit
Peak Pulse Current (t_p = 8/20 µs)	I_{PP}	7	A
Operating Temperature	T_{OPR}	-55 to +125	°C
Storage Temperature	T_{STG}	-55 to +150	°C
ESD Protection per IEC 61000-4-2 Contact Air	ESD	 ±12 ±15	kV

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Reverse Standoff Voltage	V_{RWM}	-2		2	V
Breakdown Voltage @ 1 mA	V_{BR}	5.5		10	V
Leakage Current @ 2 V	I_R			500	nA
Clamping Voltage @ 8/20 µs @ I_{PP}	V_C		4 V @ 7 A		V
ESD Clamping Voltage IEC 61000-4-2, +8 kV (I_{TLP} = 16 A) [1]	V_C		5.5		V
Capacitance @ 2 V, 1 MHz	C_J		0.18		pF

[1] Transmission Line Pulsing (TLP) conditions: Z_0 = 50 Ω, t_p = 100 ns, t_r = 1 ns

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

"Thunderbolt" is a trademark of Intel Corporation in the U.S. and/or other countries.
"USB4" is a registered trademark of USB Implementers Forum.
"DisplayPort" is a trademark of VESA.
* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.
Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

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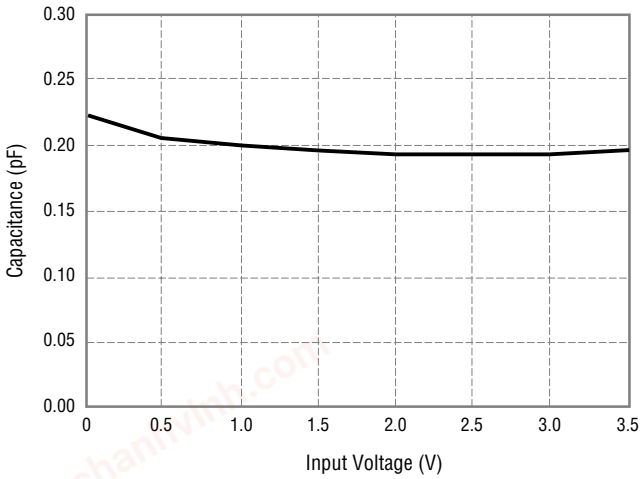
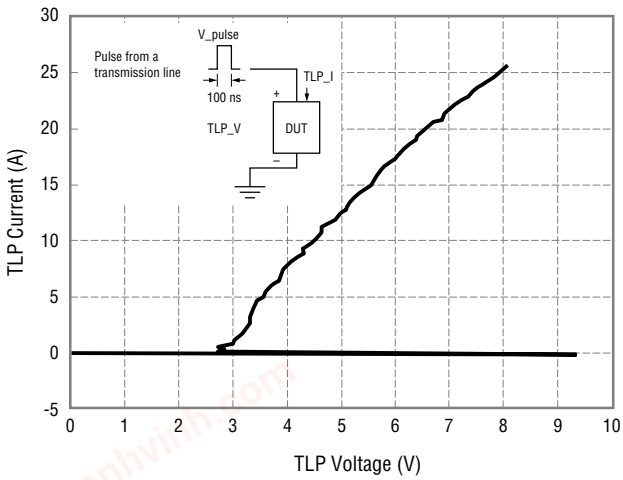
Performance Graphs

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



Typical TLP Measurement (Positive Pulse)



How to Order

CD 0201 - T 2.0 LC

- Common Code
  Chip Diode
- Package
  0201 = 0201 Package
- Model
  T = Transient Voltage Suppressor
- Working Peak Reverse Voltage
  2.0 = 2.0 V_{RWM} (Volts)
- Suffix
  LC = Low Capacitance Bidirectional Diode

Environmental Specifications

Moisture Sensitivity Level.....1
ESD Classification (HBM)..... 3B

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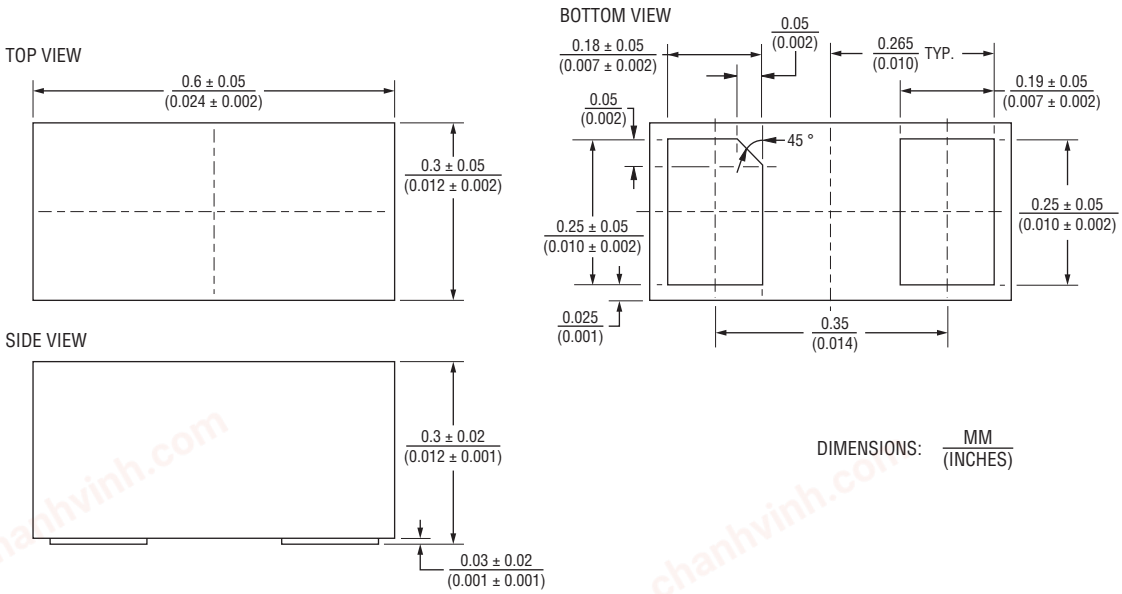
CD0201-T2.0LC – Surface Mount TVS Diode

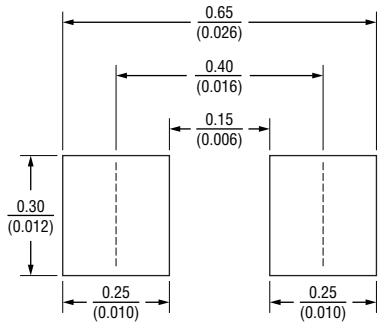
BOURNS®

Product Dimensions



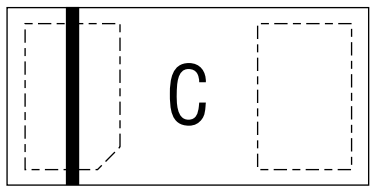
DIMENSIONS: MM / (INCHES)

Recommended PCB Footprint



DIMENSIONS: MM / (INCHES)

Typical Part Marking



TOP VIEW

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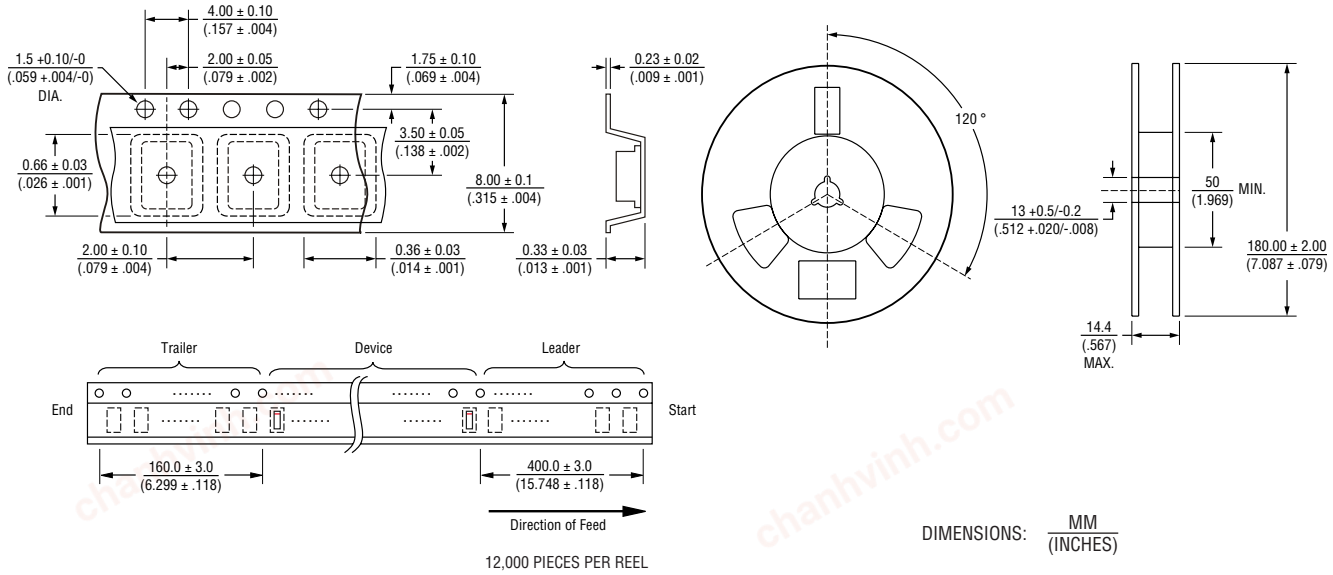
Packaging Specifications

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



12,000 PIECES PER REEL

DIMENSIONS: MM / (INCHES)

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