

Features

- Bidirectional ESD protection
- Low clamping voltage
- Ultra-small SMD package
- RoHS compliant*

Applications

- Portable electronics
- Cellular handsets and accessories
- Audio & video equipment
- Communication systems
- Computers and peripherals

CD0201-T20C - Surface Mount TVS Diode

General Information

The Bourns® Model CD0201-T20C device provides signal and power line ESD protection for electronic devices such as cellular phones, handheld electronics and other portable electronic applications.



The device is available in a compact industry-standard 0201 sized chip package (0603 metric measuring 0.6 mm x 0.3 mm). It is intended to be mounted directly onto a printed circuit board.

The device is designed to meet IEC 61000-4-2 (ESD) protection requirements. The combination of its small size and high ESD surge capability makes the Model CD0201-T20C well-suited for use in protecting sensitive electronics from damage or latch-up due to ESD in portable applications.

The Model CD0201-T20C TVS diode has a working peak voltage of 20 V.

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
Maximum Working Peak Reverse Voltage	V_{RWM}	±20	V
ESD Protection per IEC 61000-4-2 Contact Discharge Air Discharge	V_{ESD}	 ±20 ±20	kV
Operating Temperature Range	T_{OPR}	-55 to +85	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Breakdown Voltage	V_{BR}	I_{BR} = 1 mA	22.8		27.3	V
Leakage Current	I_R	V_{RWM} = 20 V			0.1	µA
ESD Clamping Voltage (Note 1)	V_C	IEC 61000-4-2 +8 kV (I_{TLP} = 16 A)			34	V
Junction Capacitance	C_J	V_R = 0 V, f = 1 MHz		6.5	10	pF

Note 1: ESD Clamping Voltage was measured by a Transmission Line Pulsing (TLP) System. TLP conditions: Z_0= 50 Ω, t_p= 100 ns, t_r= 1 ns.

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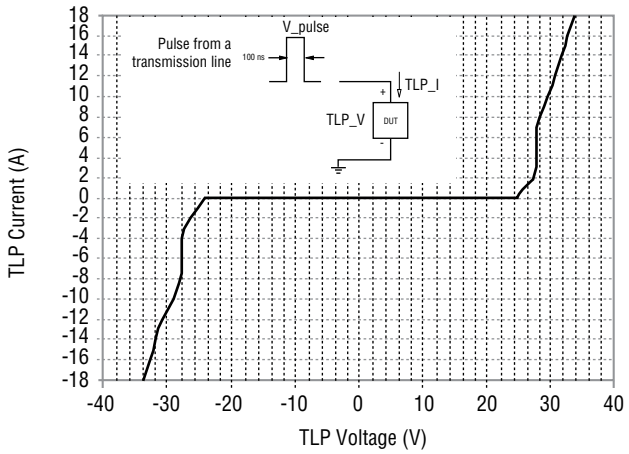
WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
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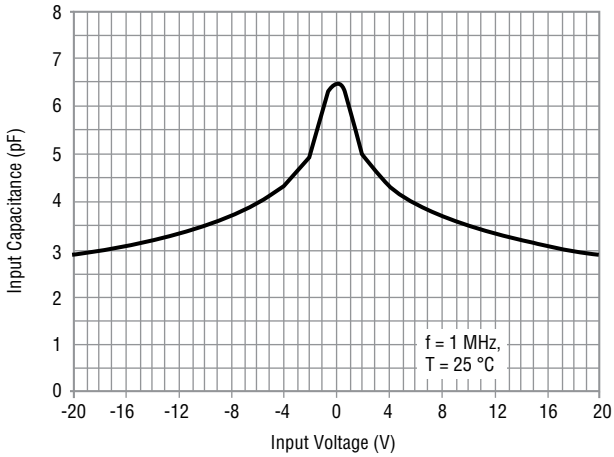
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Performance Graphs

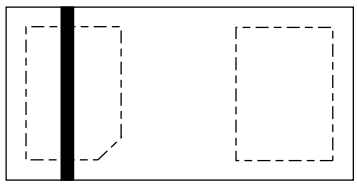
Transmission Line Pulsing



Capacitance



Typical Part Marking

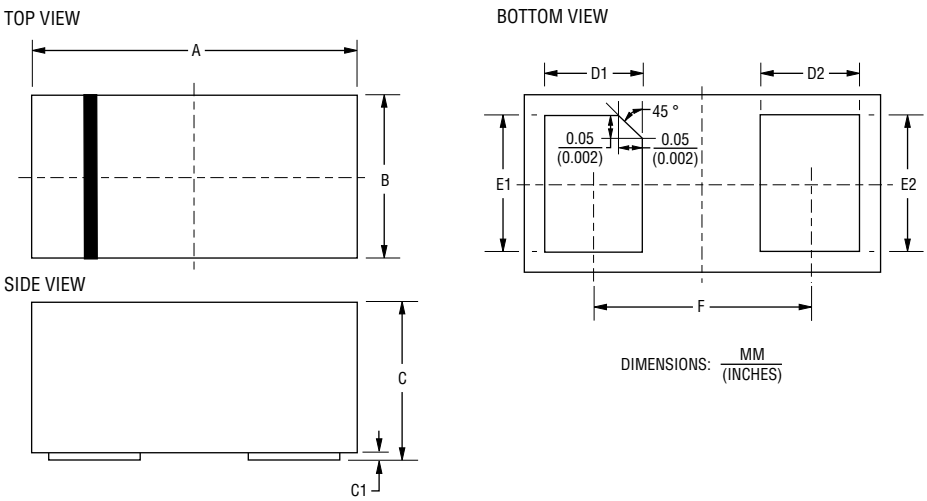


How to Order

CD 0201 - T 20 C

- Common Code: Chip Diode
- Package: 0201 = 0201 Package
- Series: T = TVS Diode
- Maximum Reverse Working Peak Voltage: 20 = 20 V
- Suffix: C = Bidirectional Diode

Product Dimensions

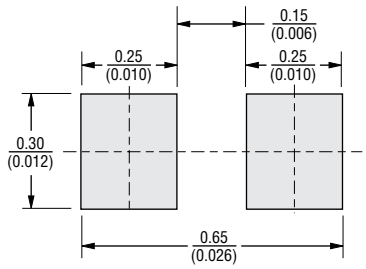


Dim.	0201 Package
A	0.6 ± 0.05 (0.024 ± 0.002)
B	0.3 ± 0.05 (0.012 ± 0.002)
C	0.3 ± 0.02 (0.012 ± 0.001)
C1	0.025 ± 0.025 (0.001 ± 0.001)
D1	0.18 ± 0.05 (0.007 ± 0.002)
D2	0.19 ± 0.05 (0.007 ± 0.002)
E1 / E2	0.25 ± 0.05 (0.01 ± 0.002)
F	0.35 (0.014)

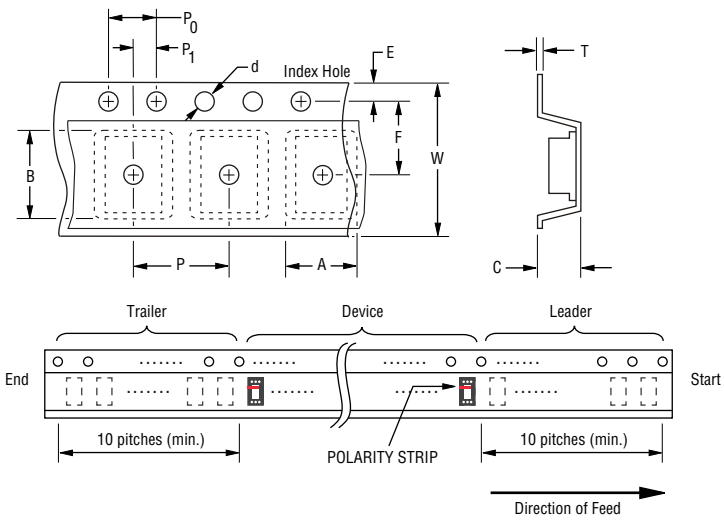
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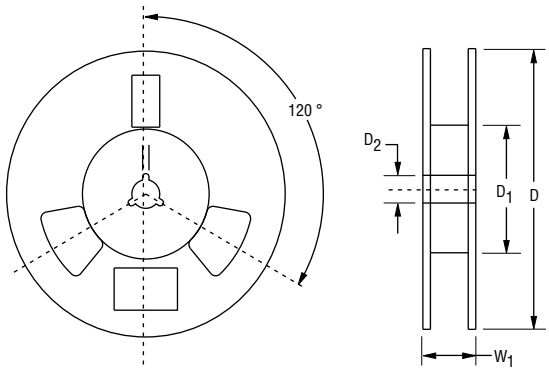
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Recommended PCB Footprint



Packaging Information





DIMENSIONS: MM / (INCHES)

Item	Symbol	CD0201-T20C
Carrier Width	A	0.36 ± 0.03 (0.014 ± 0.001)
Carrier Length	B	0.66 ± 0.03 (0.026 ± 0.001)
Carrier Depth	C	0.33 ± 0.03 (0.013 ± 0.001)
Sprocket Hole	d	1.5 +0.1/-0 (0.059 +0.004/-0)
Reel Outside Diameter	D	180 ± 2 (7.087 ± 0.079)
Reel Inner Diameter	D_1	50 (1.969) MIN.
Feed Hole Diameter	D_2	13 +0.5/-0.2 (0.512 +0.02/-0.008)
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 ± 0.004)

Item	Symbol	CD0201-T20C
Punch Hole Position	F	3.5 ± 0.05 (0.138 ± 0.002)
Punch Hole Pitch	P	2.0 ± 0.10 (0.079 ± 0.004)
Sprocket Hole Pitch	P_0	4.0 ± 0.10 (0.157 ± 0.004)
Embossment Center	P_1	2.0 ± 0.05 (0.079 ± 0.002)
Overall Tape Thickness	T	0.23 ± 0.02 (0.009 ± 0.001)
Tape Width	W	8.0 ± 0.10 (0.315 ± 0.004)
Reel Width	W_1	14.4 (0.567) MAX.
Quantity per Reel	--	12,000

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