



Features

- RoHS compliant*
- Low capacitance - 15 pF
- ESD protection
- Surge protection

Applications

- Personal Digital Assistants (PDAs)
- Mobile phones & accessories
- Memory card protection
- SIM card port protection
- Portable electronics

CD0603/CD1005-T Surface Mount TVS Diode Series

General Information

The markets for portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components. Bourns offers TVS Diodes for voltage reference applications, in compact chip package 0603 or 1005 size formats, which offer PCB real estate savings and are considerably smaller than most competitive parts. The TVS Diodes have a working peak voltage range between 5.0 V and 24 V.

Bourns® Chip Diodes conform to JEDEC standards, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.



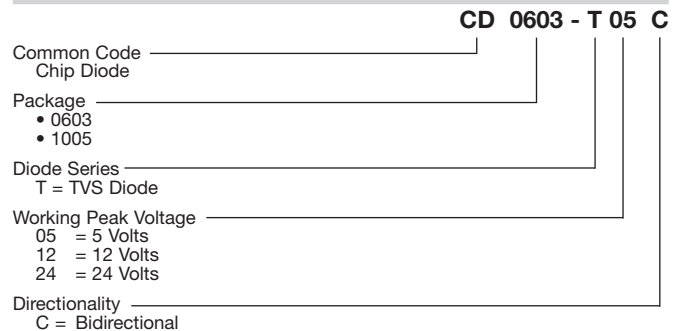
Thermal Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CD0603-T / CD1005-T Series	Unit
Package Power	P _{PK}	100	mW
Storage Temperature	T _{STG}	-40 to +125	°C
Operating Temperature	T _{OPR}	-40 to +125	°C

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

Parameter	Symbol	CD0603-T / CD1005-T Series			Unit
		05C	12C	24C	
Minimum Breakdown Voltage @ 1 mA	V _{BR}	5.1	13	25	V
Typical Breakdown Voltage @ 1 mA	V _{BR}	7	17	28	V
Peak Pulse Power (t _p = 8/20 μs)	I _{PPM}	5.1	1	1	A
Maximum Working Peak Voltage	V _{WM}	5	12	24	V
Maximum Leakage Current @ V _{WM}	I _D	2.0			μA
Maximum Clamping Voltage @ Max. I _{pp}	V _C	15	25	47	V
Maximum Junction Capacitance @ 0 V 1 MHz	C _D	20			pF
Typical Junction Capacitance @ 0 V 1 MHz	C _D	15	12	10	pF

How To Order



BOURNS®

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

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

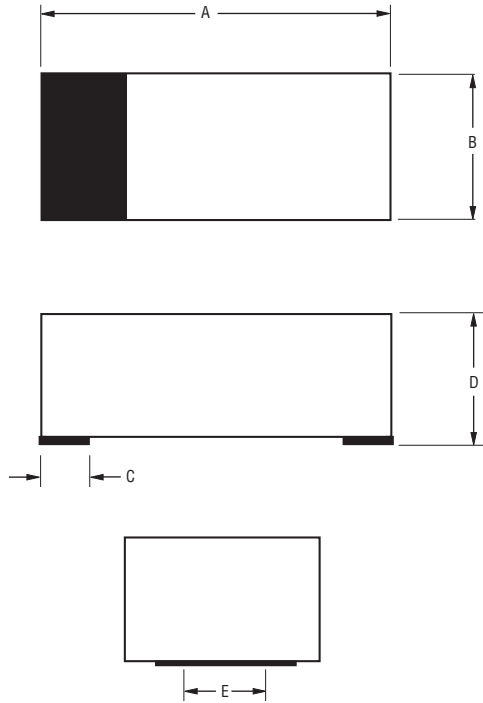
The Americas:
 Tel: +1-951 781-5500 • Fax: +1-951 781-5700

www.bourns.com

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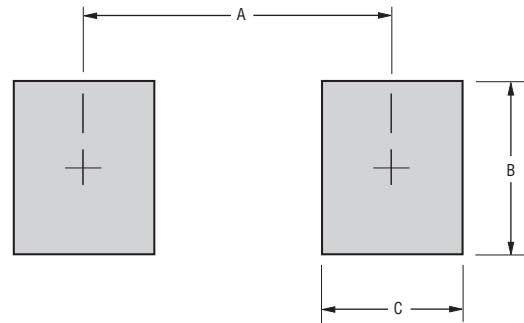
Product Dimensions



Dimension	0603	1005
A	$\frac{1.60 - 1.80}{(0.063 - 0.071)}$	$\frac{2.40 - 2.60}{(0.095 - 0.102)}$
B	$\frac{0.80 - 1.00}{(0.031 - 0.039)}$	$\frac{1.10 - 1.30}{(0.043 - 0.051)}$
C	$\frac{0.45}{(0.018)}$ Typ.	$\frac{0.50}{(0.020)}$ Typ.
D	$\frac{0.70 - 0.85}{(0.027 - 0.033)}$	$\frac{0.70 - 0.90}{(0.027 - 0.035)}$
E	$\frac{0.70}{(0.028)}$ Typ.	$\frac{1.00}{(0.039)}$ Typ.

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

Recommended Pad Layout



Dimension	0603	1005
A (Max.)	$\frac{1.25}{(0.049)}$	$\frac{2.00}{(0.079)}$
B (Min.)	$\frac{1.00}{(0.039)}$	$\frac{1.3}{(0.051)}$
C (Min.)	$\frac{0.6}{(0.024)}$	$\frac{0.7}{(0.028)}$

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

Physical Specifications

Case0603(1608) / 1005(2512) Molded plastic
 TerminalsSolder plated, solderable per MIL-STD-750,
 Method 2026
 PolarityIndicated by cathode band
 Mounting PositionAny

Typical Part Marking

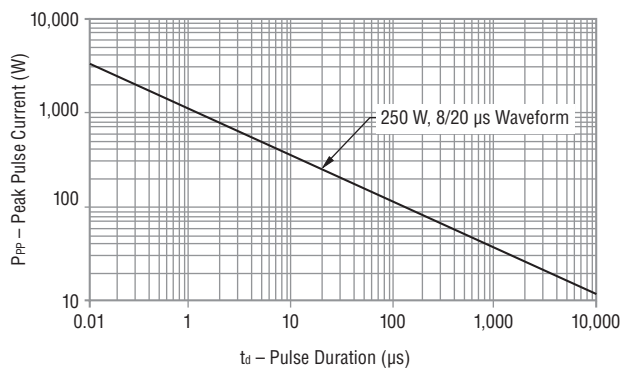
CD0603-T05CE05
 CD0603-T12CE12
 CD0603-T24CE24
 CD1005-T05CE05
 CD1005-T12CE12
 CD1005-T24CE24

CD0603/CD1005-T Surface Mount TVS Diode Series

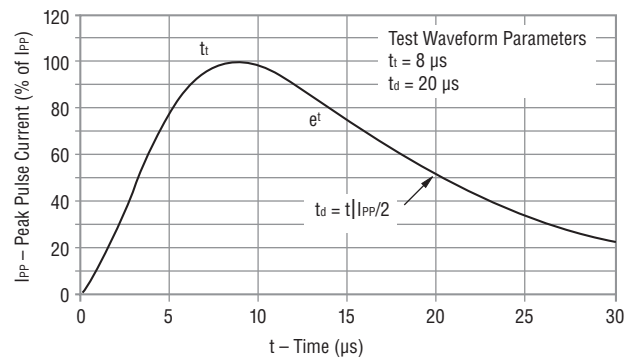


Rating and Characteristic Curves

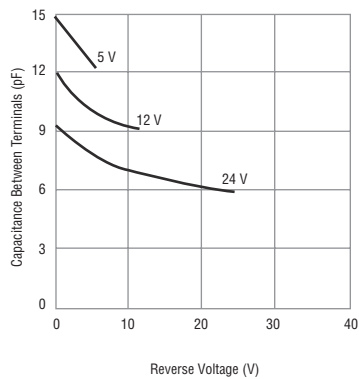
Peak Pulse Power vs. Pulse Time



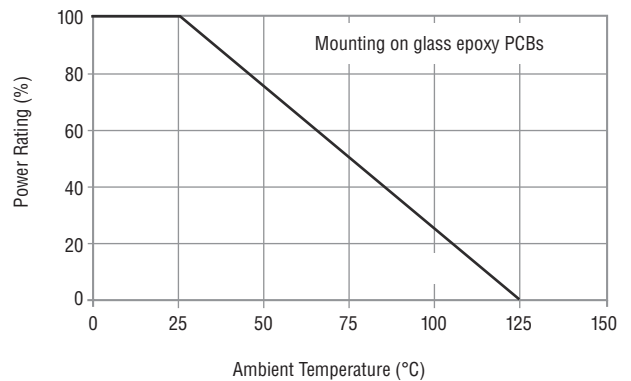
Pulse Waveform



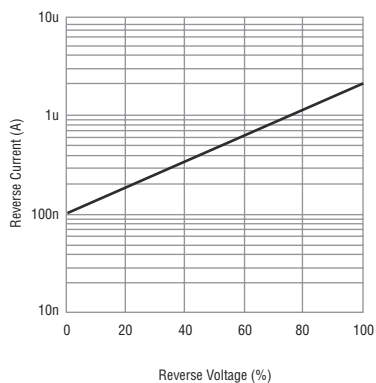
Capacitance Between Terminals



Power Derating Curve



Reverse Characteristics



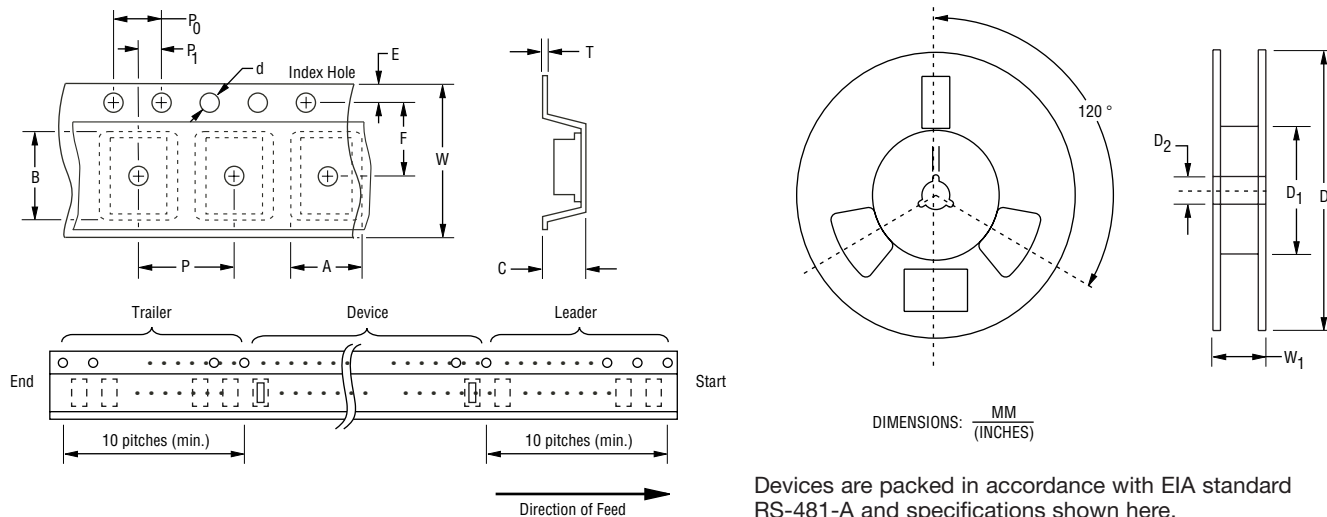
Specifications are subject to change without notice.
 Customers should verify actual device performance in their specific applications.

CD0603/CD1005-T Surface Mount TVS Diode Series

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Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).



Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	0603	1005
Carrier Width	A	$\frac{1.00 \pm 0.10}{(0.039 - 0.004)}$	$\frac{1.55 \pm 0.10}{(0.061 - 0.004)}$
Carrier Length	B	$\frac{1.85 \pm 0.10}{(0.073 - 0.004)}$	$\frac{2.65 \pm 0.10}{(0.104 - 0.004)}$
Carrier Depth	C	$\frac{1.00 \pm 0.10}{(0.039 - 0.004)}$	$\frac{1.05 \pm 0.10}{(0.041 - 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 - 0.002)}$	$\frac{1.55 \pm 0.10}{(0.061 - 0.004)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$	$\frac{178}{(7.008)}$
Reel Inner Diameter	D ₁	$\frac{60.0}{(2.362)}$ MIN.	$\frac{60.0}{(2.362)}$ MIN.
Feed Hole Diameter	D ₂	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.05}{(0.008 - 0.002)}$	$\frac{0.25 \pm 0.05}{(0.010 - 0.002)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$
Reel Width	W ₁	$\frac{13.5}{(0.531)}$ MAX.	$\frac{13.5}{(0.531)}$ MAX.
Quantity per Reel	--	4,000	4,000