

# CDSOD323-TxxSC - TVS Diode Series

**BOURNS®**

## Electrical & Thermal Characteristics (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

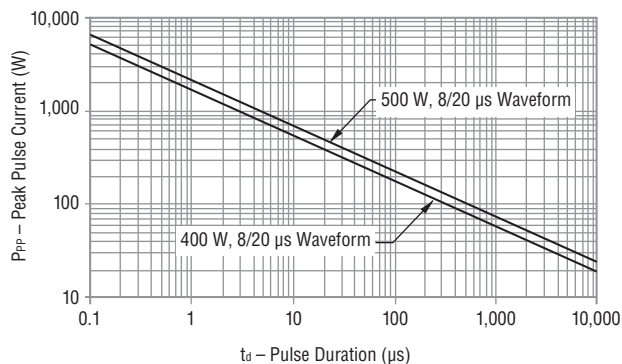
| Parameter                                                       | Symbol   | CDSOD323-     |               |              |              |               |              |              |              | Unit          |
|-----------------------------------------------------------------|----------|---------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|
|                                                                 |          | Uni-T15S      | Bi-T15SC      | Uni-T18S     | Bi-T18SC     | Uni-T24S      | Bi-T24SC     | Uni-T36S     | Bi-T36SC     |               |
| Min. Breakdown Voltage @ 1 mA                                   | $V_{BR}$ | 16.7          | 16.7          | 20.0         | 20.0         | 26.7          | 26.7         | 40.0         | 40.0         | V             |
| Working Peak Voltage                                            | $V_M$    | 15.0          | 15.0          | 18.0         | 18.0         | 24.0          | 24.0         | 36.0         | 36.0         | V             |
| Maximum Clamping Voltage @ $I_P = 1\text{ A}$                   | $V_F$    | 24.0          | 24.0          | 29.0         | 29.0         | 43.0          | 43.0         | 60.0         | 60.0         | V             |
| Typical Clamping Voltage @ $8/20\text{ }\mu\text{s}$ @ $I_{PP}$ | $V_C$    | 30.0 V @ 17 A | 33.0 V @ 12 A | 40.0 V @ 9 A | 40.0 V @ 9 A | 49.0 V @ 12 A | 46.2 V @ 9 A | 75.0 V @ 5 A | 75.0 V @ 5 A | V             |
| Maximum Leakage Current @ $V_{WM}$                              | $I_D$    | 1             |               |              |              |               |              |              |              | $\mu\text{A}$ |
| Typical Capacitance @ 0 V, 1 MHz                                | $C_P$    | 100           | 40            | 90           | 40           | 88            | 40           | 75           | 35           | pF            |

Notes:

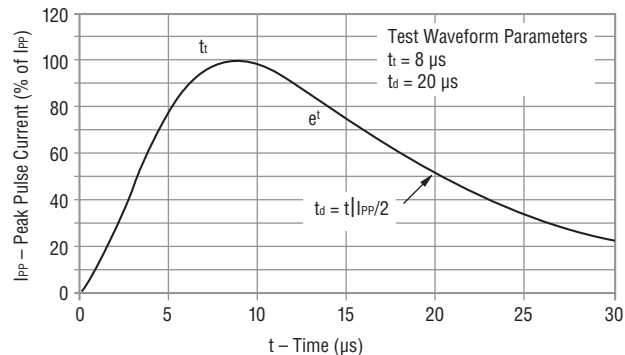
1. Part numbers with suffix "C" indicate bidirectional device, i.e. CDSOD323-T05SC.
2. For bidirectional devices only, the electrical specifications apply in both directions.

## Performance Graphs

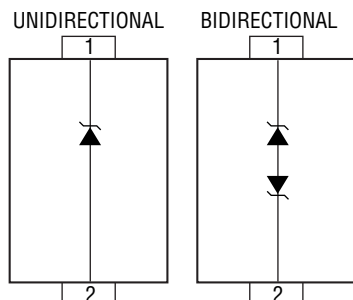
### Peak Pulse Power vs. Pulse Time



### Pulse Waveform



## Block Diagram



## How to Order

**CD SOD323 - T 05 SC**

Common Code \_\_\_\_\_  
 Chip Diode \_\_\_\_\_  
 Package \_\_\_\_\_  
 • SOD323 = SOD-323 Package  
 Model \_\_\_\_\_  
 T = Transient Voltage Suppressor  
 Working Peak Reverse Voltage \_\_\_\_\_  
 05 = 5  $V_{RWM}$  (Volts)  
 Suffix \_\_\_\_\_  
 S = Standard Capacitance Unidirectional Diode  
 SC = Standard Capacitance Bidirectional Diode

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

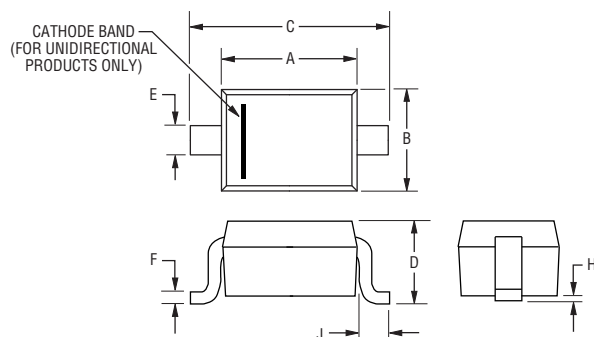
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## Product Dimensions

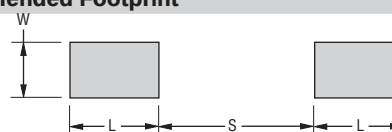
This is a molded JEDEC SOD-323 package with lead free 100 % Sn plating on the terminations. It weighs approximately 30 mg and has a flammability rating of UL 94V-0.



| Dimensions |                                       |
|------------|---------------------------------------|
| A          | $\frac{1.60 - 1.90}{(0.063 - 0.075)}$ |
| B          | $\frac{1.15 - 1.45}{(0.045 - 0.057)}$ |
| C          | $\frac{2.39 - 2.70}{(0.094 - 0.106)}$ |
| D          | $\frac{0.92 - 1.14}{(0.036 - 0.045)}$ |
| E          | $\frac{0.25 - 0.40}{(0.010 - 0.016)}$ |
| F          | $\frac{0.08 - 0.20}{(0.003 - 0.008)}$ |
| H          | $\frac{0.13}{(0.005)}$ MAX.           |
| J          | $\frac{0.30 - 0.45}{(0.012 - 0.018)}$ |

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

## Recommended Footprint



| Dimensions (Nominal) |                        |
|----------------------|------------------------|
| L                    | $\frac{0.80}{(0.031)}$ |
| S                    | $\frac{1.40}{(0.055)}$ |
| W                    | $\frac{0.50}{(0.020)}$ |

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

## Typical Part Marking

Each device has device marking outlined below and the unidirectional devices have an additional Polarity Band indicating the cathode.

|                      |   |
|----------------------|---|
| CDSOD323-T03S .....  | A |
| CDSOD323-T03SC ..... | G |
| CDSOD323-T05S .....  | B |
| CDSOD323-T05SC ..... | H |
| CDSOD323-T08S .....  | C |
| CDSOD323-T08SC ..... | J |
| CDSOD323-T12S .....  | D |
| CDSOD323-T12SC ..... | K |
| CDSOD323-T15S .....  | E |
| CDSOD323-T15SC ..... | L |
| CDSOD323-T18S .....  | O |
| CDSOD323-T18SC ..... | N |
| CDSOD323-T24S .....  | F |
| CDSOD323-T24SC ..... | M |
| CDSOD323-T36S .....  | R |
| CDSOD323-T36SC ..... | T |

## Environmental Specifications

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

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

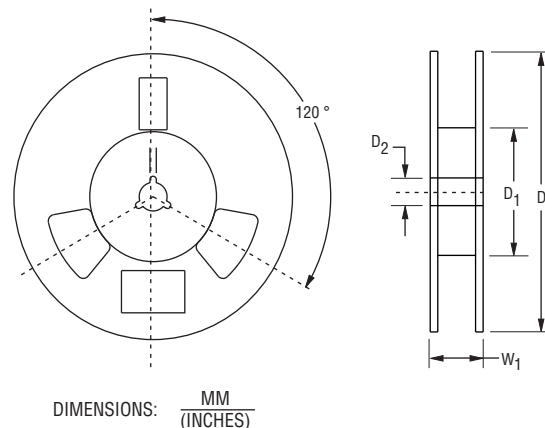
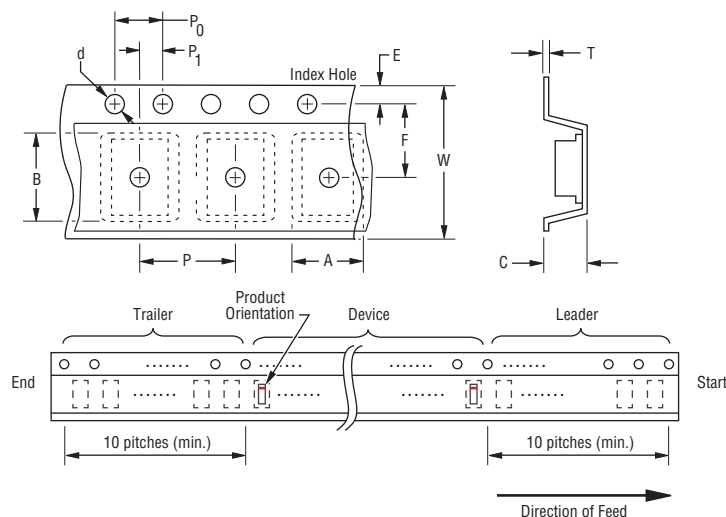
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## Packaging Information

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



Devices are packed in accordance with EIA standard RS-481-A.

| Item                   | Symbol         | SOD-323                                   |
|------------------------|----------------|-------------------------------------------|
| Carrier Width          | A              | $\frac{1.55 \pm 0.10}{(0.061 \pm 0.004)}$ |
| Carrier Length         | B              | $\frac{2.90 \pm 0.10}{(0.114 \pm 0.004)}$ |
| Carrier Depth          | C              | $\frac{1.35 \pm 0.10}{(0.053 \pm 0.004)}$ |
| 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> | $\frac{80.0}{(3.150)}$ 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> | $\frac{13.5}{(0.531)}$ Max.               |
| Quantity per Reel      | --             | 3,000                                     |

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REV. 09/19

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