

Features

- Lead free as standard
- RoHS compliant*
- Low capacitance - 2 pF
- ESD protection >15 kV



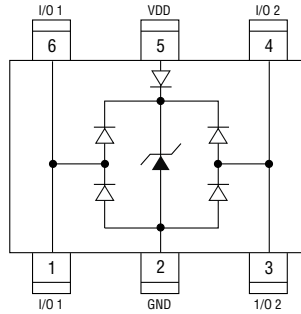
This model is currently available but not recommended for new designs.

CDSOT563-0502 - Surface Mount TVS Diode Array

General Information

The CDSOT563-0502 device provides ESD and EFT protection for high speed data ports meeting IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements. The Transient Voltage Suppressor array offers a Working Peak Reverse Voltage of 5 V and Minimum Breakdown Voltage of 6 V.

The SOT563 packaged device will mount directly onto the industry standard SOT563 footprint. Bourns® Chip Diodes are easy to handle with standard pick and place equipment and the flat configuration minimizes roll away.



Additional Information

Click these links for more information:



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

| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|------------------------|--|------|------|------|------|
| Peak Pulse Current | I _{PPM} | (t _p = 8/20 μs) | | | 6 | A |
| Storage Temperature | T _{STG} | | -55 | +25 | +150 | °C |
| Operating Temperature | T _{OPR} | | -40 | +25 | +125 | °C |
| Working Peak Voltage | V _{WM} | | | | 5 | V |
| Breakdown Voltage | V _{BR} | @ 1 mA, Pin 5 to Pin 2 | 6 | | 9 | V |
| Leakage Current @ V _{WM} | I _L | V _{pin5} = 5 V, V _{pin2} = 0 V, Pin 5 to Pin 2 | | | 5 | μA |
| Channel Leakage Current @ V _{WM} | I _{CH} | V _{pin5} = 5 V, V _{pin2} = 0 V, Any I/O to Pin 2 | | | 1 | μA |
| Forward Voltage | V _F | @ I _f = 15 mA | | 0.8 | 1 | V |
| Clamping Voltage | V _{clamp_VDD} | I _{PP} = 5 A, t _p = 8/20 μs | | 9 | | V |
| Channel Input Capacitance | C _{IN-1} | V _{pin5} = 5 V, V _{pin2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz | | 2 | 2.5 | pF |
| Channel Input Capacitance | C _{IN-2} | V _{pin5} = floated, V _{pin2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz | | 2.8 | 3.6 | pF |
| Channel to Channel Input Capacitance | C _{CROSS-1} | V _{pin5} = 5 V, V _{pin2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz | | 0.4 | 0.5 | pF |
| Channel to Channel Input Capacitance | C _{CROSS-2} | V _{pin5} = floated, V _{pin2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz | | 0.55 | 0.65 | pF |



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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Applications

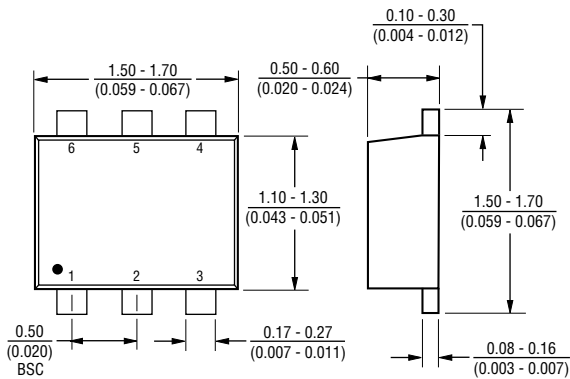
- Personal Digital Assistant (PDAs)
- Mobile phones and accessories
- Portable electronics
- ADSL / VDSL cards

CDSOT563-0502 - Surface Mount TVS Diode Array

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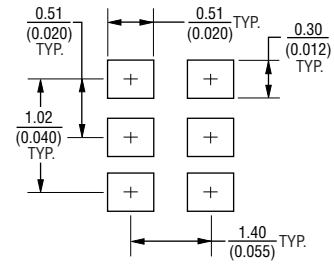
Product Dimensions

This is a molded SOT563 package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 3 mg and has a flammability rating of UL 94V-0.



DIMENSIONS = $\frac{\text{MILLIMETERS}}{\text{(INCHES)}}$

Recommended Footprint



Typical Part Marking

CDSOT563-0502..... 52XY
 ("X" = Date Code; "Y" = Package House)

How to Order

CD SOT563 - 05 02

Common Diode _____

Chip Diode _____

Package _____
 SOT563 = SOT-563 Package

Working Peak Reverse Voltage _____
 05 = 5 V (Volts)

Data Lines _____
 02 = 2 Data Lines

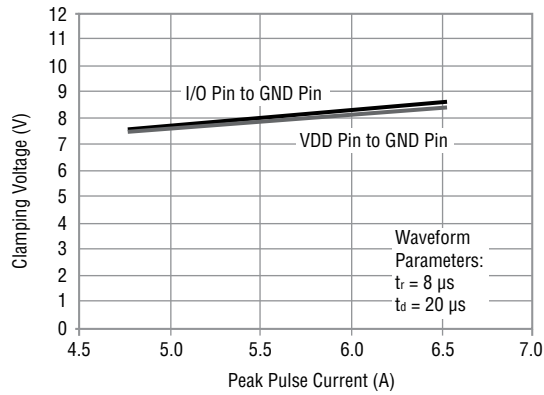
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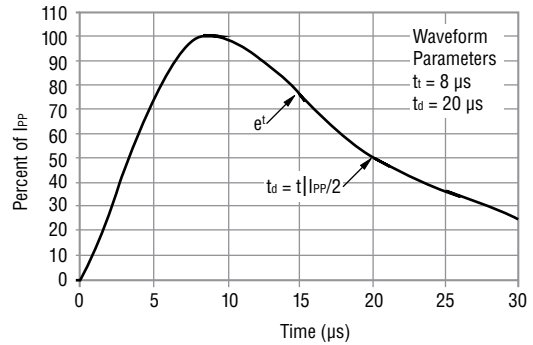
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Rating & Characteristic Curves

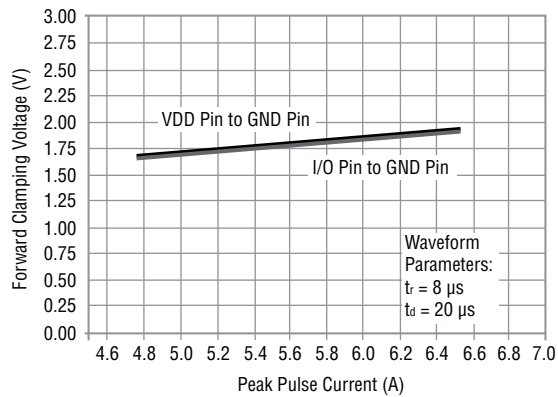
Clamping Voltage vs. Peak Pulse Current



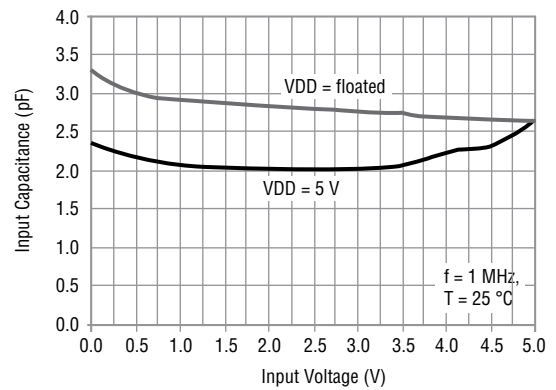
Pulse Waveform



Forward Clamping Voltage vs. Peak Pulse Current



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



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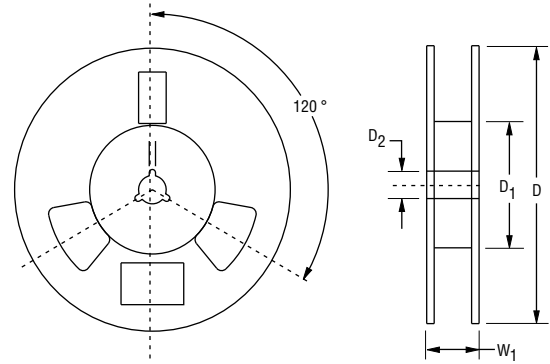
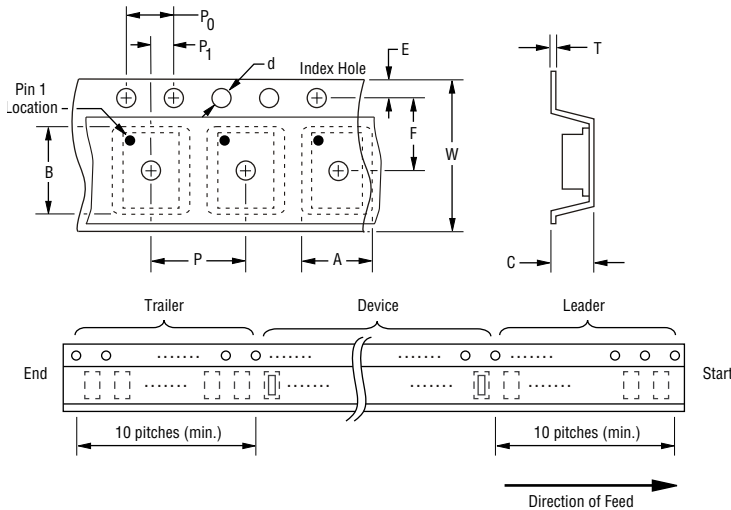
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CDSOT563-0502 - Surface Mount TVS Diode Array

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Packaging Information

The product will be dispensed in tape and reel format (see diagram below)



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

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

| Item | Symbol | SOT563 |
|------------------------|----------------|---|
| Carrier Width | A | $\frac{1.78 \pm 0.05}{(0.069 \pm 0.002)}$ |
| Carrier Length | B | $\frac{1.78 \pm 0.05}{(0.069 \pm 0.002)}$ |
| Carrier Depth | C | $\frac{0.69 \pm 0.05}{(0.027 \pm 0.002)}$ |
| 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 | -- | 3000 |

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REV. 04/22

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