

Features

- RoHS compliant*
- Low capacitance - 0.55 pF
- ESD protection >15 kV
- Protects 4 I/O and 1 V_{DD} line

Applications

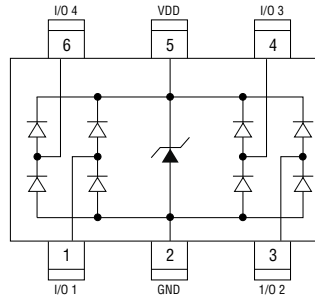
- HDMI 1.4
- Digital Visual Interface (DVI)
- USB 3.0 / USB OTG
- Memory protection
- SIM card ports

CDSOT236-0504LC - TVS/Steering Diode Array

General Information

The CDSOT236-0504LC device provides ESD, EFT and Surge protection for high speed data ports meeting IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements. The Transient Voltage Suppressor array offers a Working Peak Reverse Voltage of 5 V and Minimum Breakdown Voltage of 6 V.

The SOT23-6L packaged device will mount directly onto the industry standard SOT23-6L footprint. Bourns® Chip Diodes are easy to handle with standard pick and place equipment and their flat configuration minimizes roll away.



Additional Information

Click these links for more information:



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

Parameter	Symbol	CDSOT236-0504LC	Unit
Peak Pulse Current (t _p = 8/20 μs)	I _{PP}	4.7	A
Storage Temperature	T _{STG}	-55 to +150	°C
Operating Temperature	T _{OPR}	-55 to +85	°C
Operating Supply Voltage	V _{DC}	6	V
ESD per IEC 61000-4-2 (Air) (I/O Pins)	V _{ESD_IO}	19	kV
ESD per IEC 61000-4-2 (Contact) (I/O Pins)		12	
ESD per IEC 61000-4-2 (Air) (V _{CC} to GND)	V _{ESD_VCC}	30	kV
ESD per IEC 61000-4-2 (Contact) (V _{CC} to GND)		30	
DC Voltage at any I/O Pin	V _{IO}	(GND-0.5) to (V _{CC} +0.5)	V

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

Parameter	Symbol	CDSOT236-0504LC	Unit
Maximum Reverse Standoff Voltage ¹	V _{RWM}	5.0	V
Maximum Leakage Current ¹ @ V _{RWM}	I _L	5.0	μA
Maximum Channel Leakage Current @ V _{RWM}	I _{CD}	1.0	μA
Minimum Reverse Breakdown Voltage ¹ @ I _{BV} = 1 mA	V _{BR}	6.0	V
Maximum Forward Voltage ⁴ @ I _F = 15 mA	V _F	1.0	V
Typical Clamping Voltage ²	V _C	8.1	V
Typical ESD Clamping Voltage - I/O ²	V _{clamp_io}	12	V
Typical ESD Clamping Voltage - V _{CC} ¹	V _{clamp_VCC}	9.0	V
Maximum Channel Input Capacitance ² @ V _{PIN5} = 5 V, V _{PIN2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz	C _{IN}	0.65	pF
Maximum Channel to Channel Input Capacitance ³ @ V _{PIN5} = 5 V, V _{PIN2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz	C _{CROSS}	0.06	pF
Maximum Variation of Channel Input Capacitance @ V _{PIN5} = 5 V, V _{PIN2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz (I/O Pin to GND)	ΔC _{IN}	0.06	pF

NOTES:

1. Pin 5 to Pin 2 (GND)
2. Pin 1,3,4 or 6 to Pin 2 (GND)
3. Between any two of Pins 1,3,4,6
4. Pin 2 (GND) to Pin 5



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

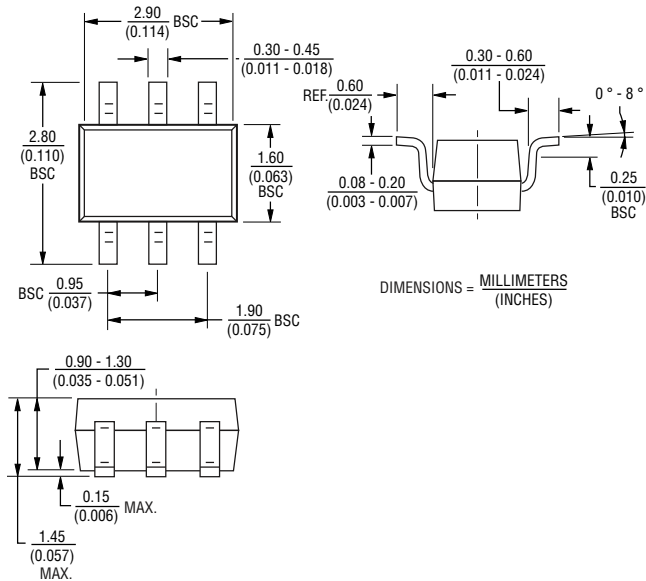
*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document. and at www.bourns.com/docs/legal/disclaimer.pdf.

CDSOT236-0504LC - TVS/Steering Diode Array

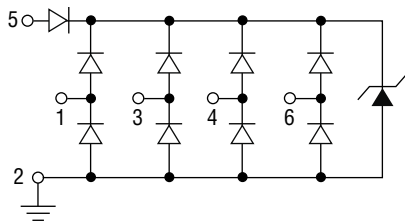


Product Dimensions

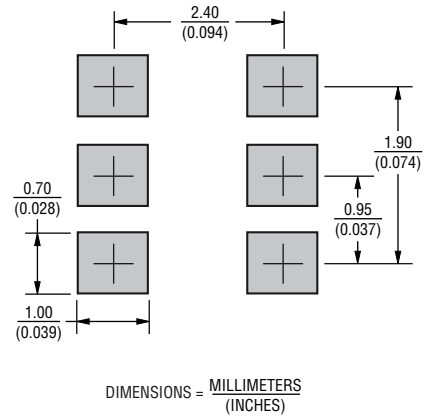
This is a molded SOT23-6L package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 3 mg and has a flammability rating of UL 94V-0.



Circuit Diagram



Recommended Footprint



Typical Part Marking

CDSOT236-0504LC 54L

How to Order

CD SOT236 - 05 04 LC

Common Code _____
 Chip Diode _____
 Package _____
 SOT236 = SOT23-6L Package _____
 Working Peak Reverse Voltage _____
 05 = 5 V_{RWM} (Volts) _____
 Number of Lines _____
 04 = 4 Data Lines _____
 Suffix _____
 LC = Low Capacitance _____

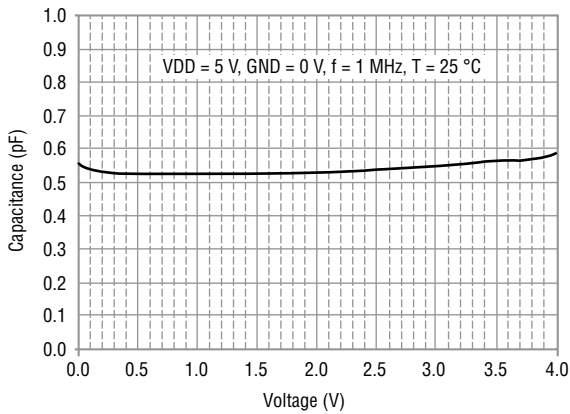
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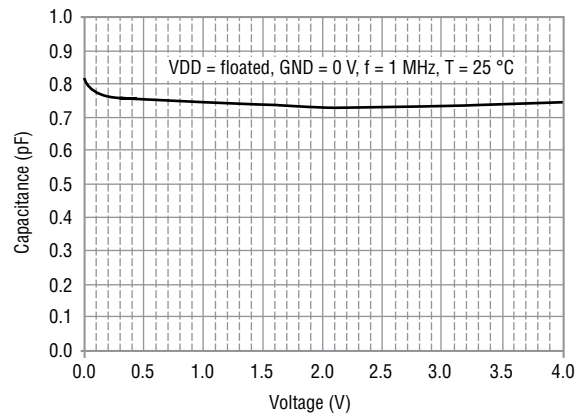
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Typical Characteristics

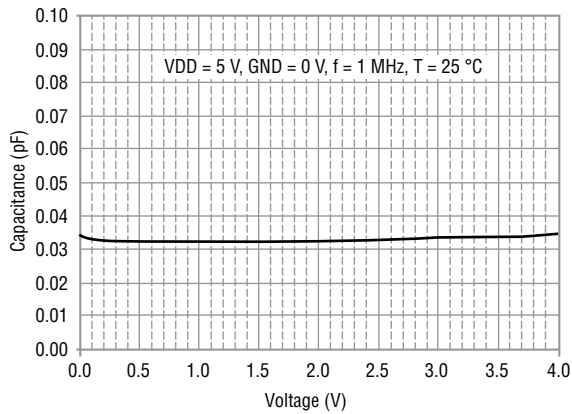
Typical Variation of C_{IN} vs. V_{IN}



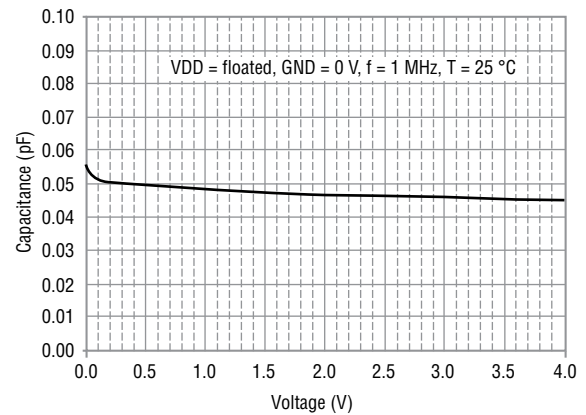
Typical Variation of C_{IN} vs. V_{IN}



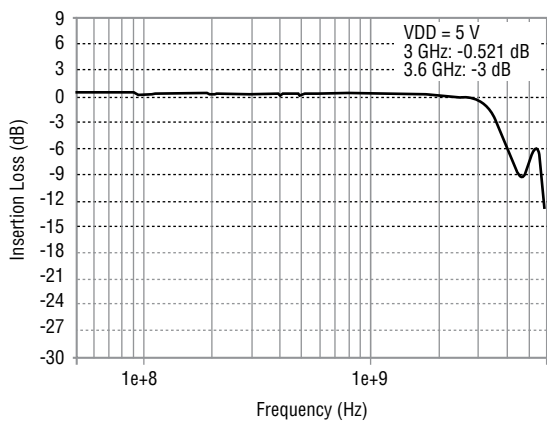
Typical Variation of C_{IO} to IO vs. V_{IN}



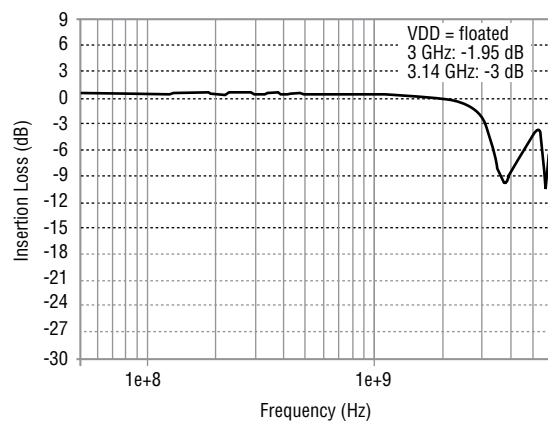
Typical Variation of C_{IO} to IO vs. V_{IN}



Insertion Loss S21 (I/O to GND)



Insertion Loss S21 (I/O to GND)



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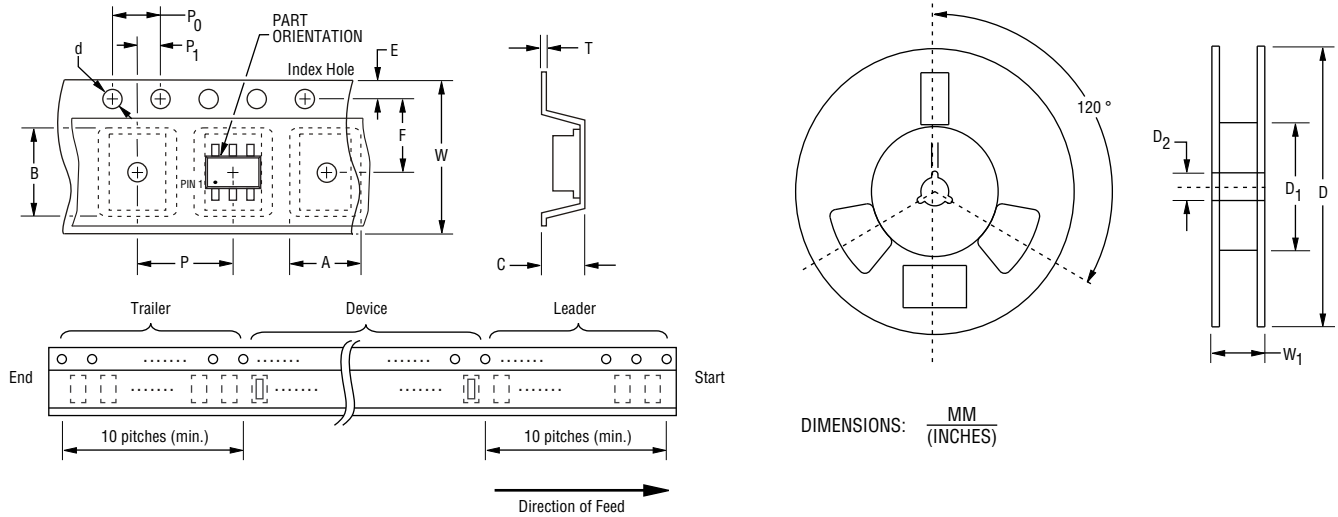
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CDSOT236-0504LC - TVS/Steering Diode Array

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Packaging Information

The product is packaged in tape and reel format per EIA-481 standard.



Item	Symbol	SOT23-6
Carrier Width	A	$\frac{3.90 \pm 0.10}{(0.154 \pm 0.004)}$
Carrier Length	B	$\frac{3.90 \pm 0.10}{(0.154 \pm 0.004)}$
Carrier Depth	C	$\frac{0.90 \pm 0.10}{(0.035 \pm 0.004)}$
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 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. 08/19

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