



Features

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

Applications

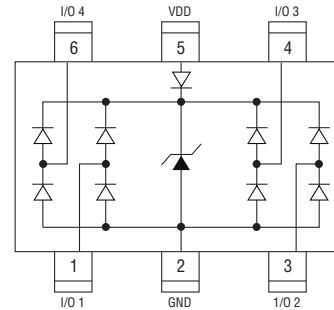
- HDMI 1.4
- Digital Visual Interface (DVI)
- USB 3.0 / USB OTG
- Memory protection
- SIM card ports

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.



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

Parameter	Symbol	CDSOT236-0504LC	Unit
Peak Pulse Current (tp = 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.

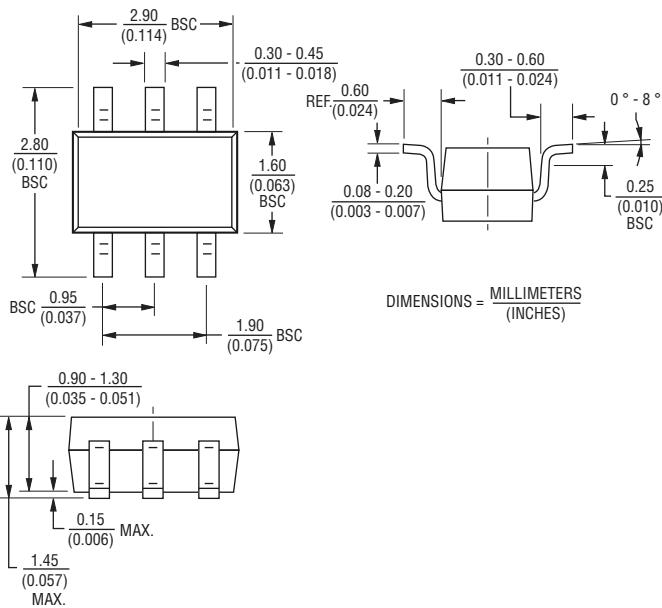
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CDSOT236-0504LC - TVS/Steering Diode Array

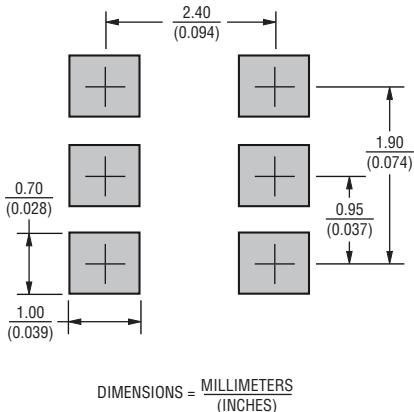
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Product Dimensions

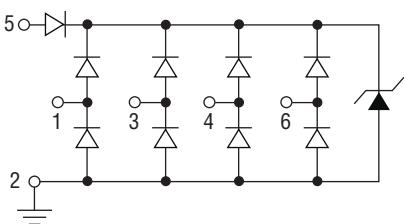
This is a molded SOT23-6L package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 3 mg and has a flammability rating of UL 94V-0.



Recommended Footprint



Circuit Diagram



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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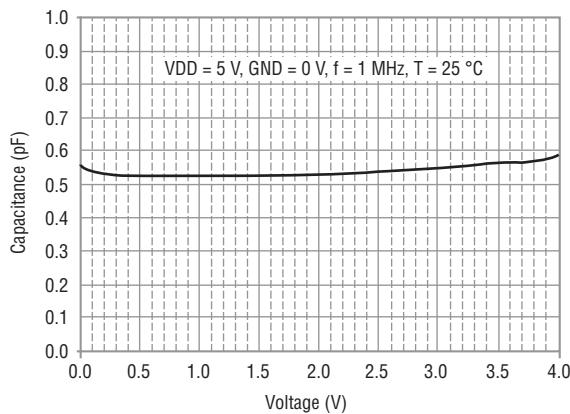
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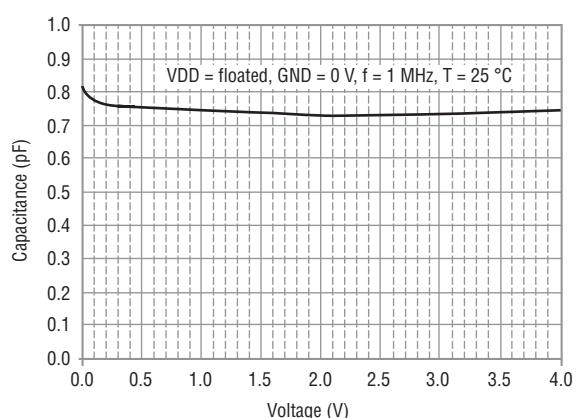
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Typical Characteristics

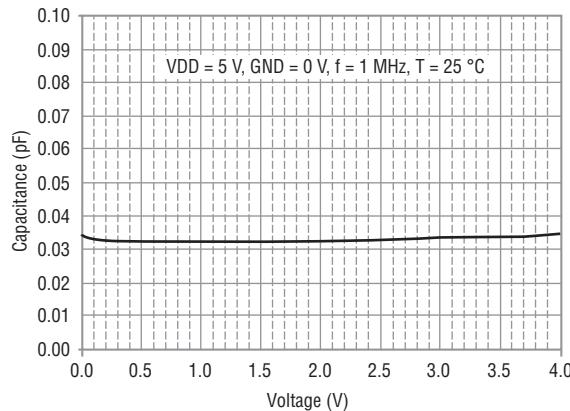
Typical Variation of C_{IN} vs. V_{IN}



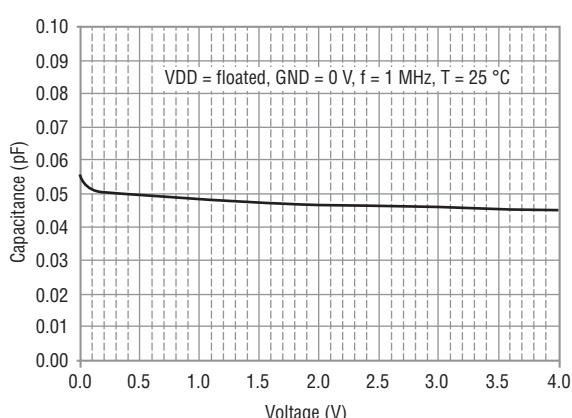
Typical Variation of C_{IN} vs. V_{IN}



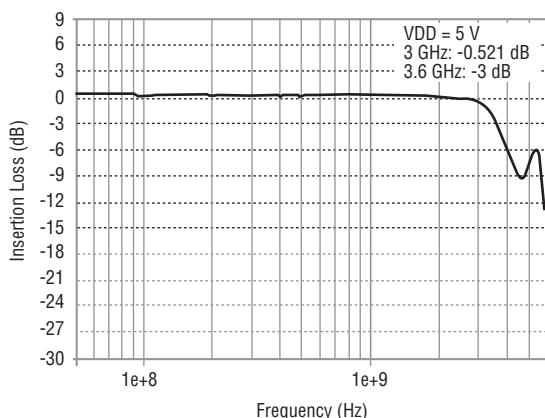
Typical Variation of C_{IO} to IO vs. V_{IN}



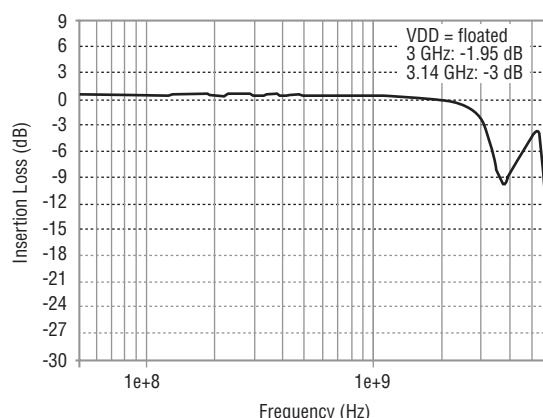
Typical Variation of C_{IO} to IO vs. V_{IN}



Insertion Loss S21 (I/O to GND)



Insertion Loss S21 (I/O to GND)



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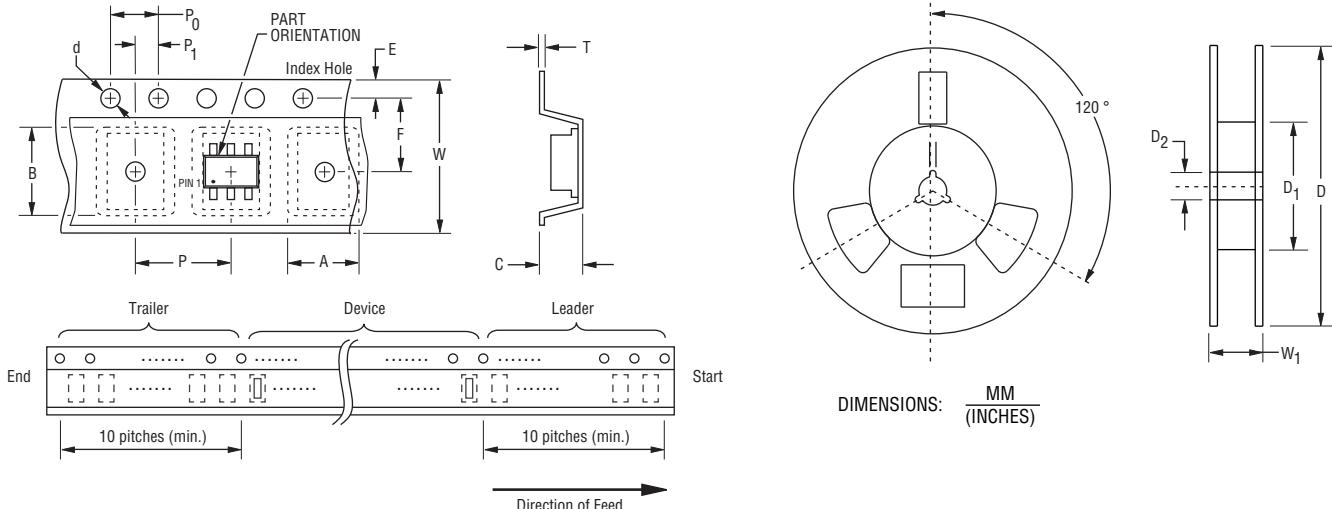
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CDSOT236-0504LC - TVS/Steering Diode Array

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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	3.90 ± 0.10 (0.154 ± 0.004)
Carrier Length	B	3.90 ± 0.10 (0.154 ± 0.004)
Carrier Depth	C	0.90 ± 0.10 (0.035 ± 0.004)
Sprocket Hole	d	1.55 ± 0.05 (0.061 ± 0.002)
Reel Outside Diameter	D	178 (7.008)
Reel Inner Diameter	D ₁	50.0 MIN. (1.969)
Feed Hole Diameter	D ₂	13.0 ± 0.20 (0.512 ± 0.008)
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 ± 0.004)
Punch Hole Position	F	3.50 ± 0.05 (0.138 ± 0.002)
Punch Hole Pitch	P	4.00 ± 0.10 (0.157 ± 0.004)
Sprocket Hole Pitch	P ₀	4.00 ± 0.10 (0.157 ± 0.004)
Embossment Center	P ₁	2.00 ± 0.05 (0.079 ± 0.002)
Overall Tape Thickness	T	0.20 ± 0.10 (0.008 ± 0.004)
Tape Width	W	8.00 ± 0.20 (0.315 ± 0.008)
Reel Width	W ₁	14.4 MAX. (0.567)
Quantity per Reel	--	3000

BOURNS®

Asia-Pacific:

Tel: +886-2 2562-4117

Email: asiacus@bourns.com

Europe:

Tel: +36 88 885 877

Email: europus@bourns.com

The Americas:

Tel: +1-951 781-5500

Email: americus@bourns.com

www.bourns.com

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