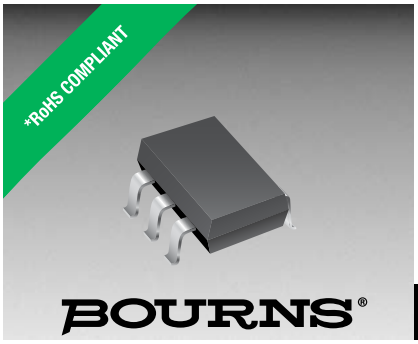


BOURNS®

Features

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

Applications

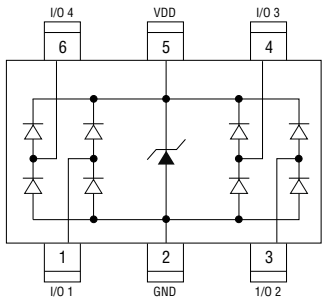
- HDMI 1.4
- Digital Visual Interface (DVI)
- USB 3.0 / USB OTG
- Memory protection
- SIM card ports

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:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

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) ESD per IEC 61000-4-2 (Contact) (I/O Pins)	V_{ESD_IO}	19 12	kV
ESD per IEC 61000-4-2 (Air) (V_{CC} to GND) ESD per IEC 61000-4-2 (Contact) (VCC to GND)	V_{ESD_VCC}	30 30	kV
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

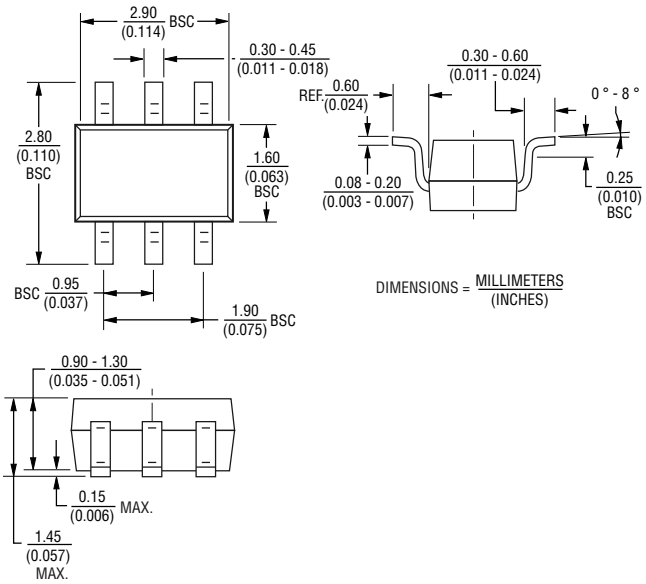
NOTES:
1. Pin 5 to Pin 2 (GND)
2. Pin 1,3,4 or 6 to Pin 2 (GND)
3. Between any two of Pins 1,3,4,6
4. Pin 2 (GND) to Pin 5

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

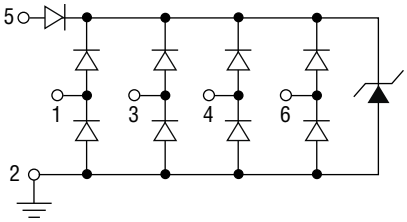
*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
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Product Dimensions

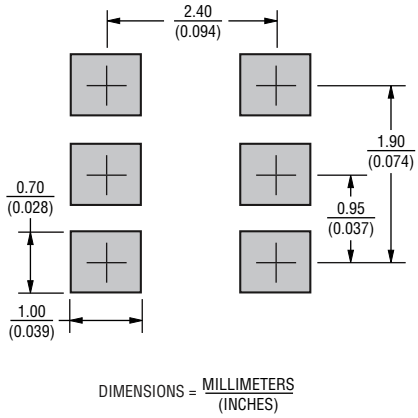
This is a molded SOT23-6L package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 3 mg and has a flammability rating of UL 94V-0.



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)

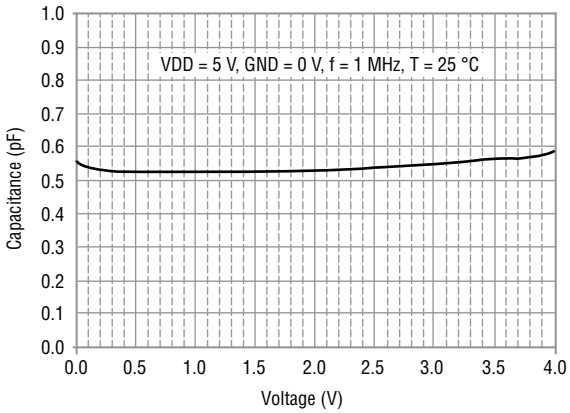
Number of Lines
04 = 4 Data Lines

Suffix
LC = Low Capacitance

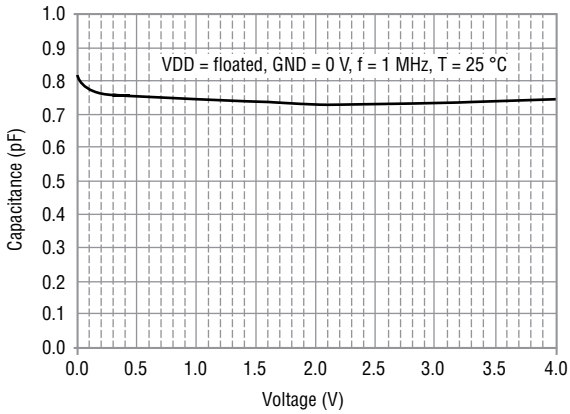
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Typical Characteristics

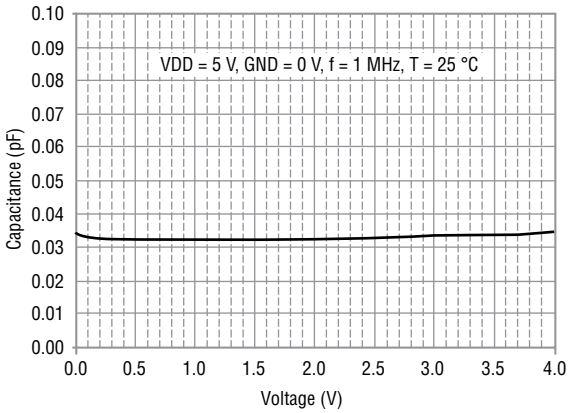
Typical Variation of C_{IN} vs. V_{IN}



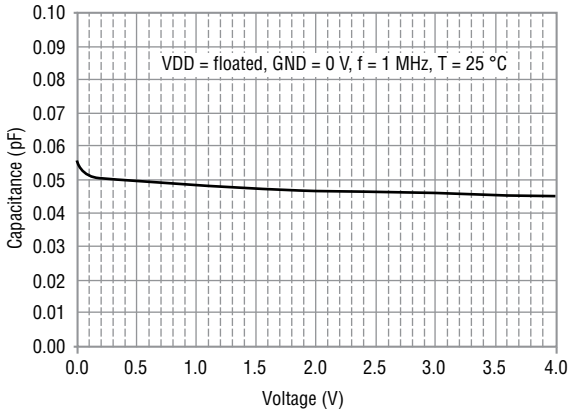
Typical Variation of C_{IN} vs. V_{IN}



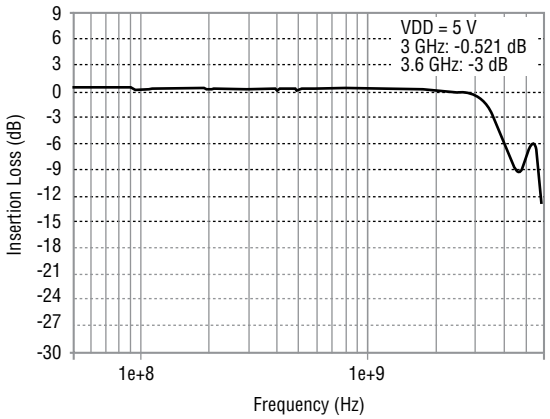
Typical Variation of $C_{IO\ to\ IO}$ vs. V_{IN}



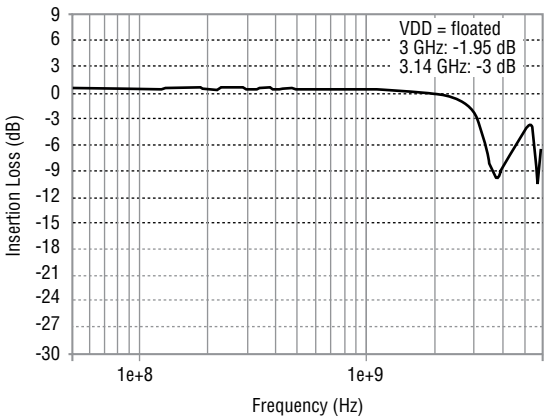
Typical Variation of $C_{IO\ to\ IO}$ vs. V_{IN}



Insertion Loss S21 (I/O to GND)



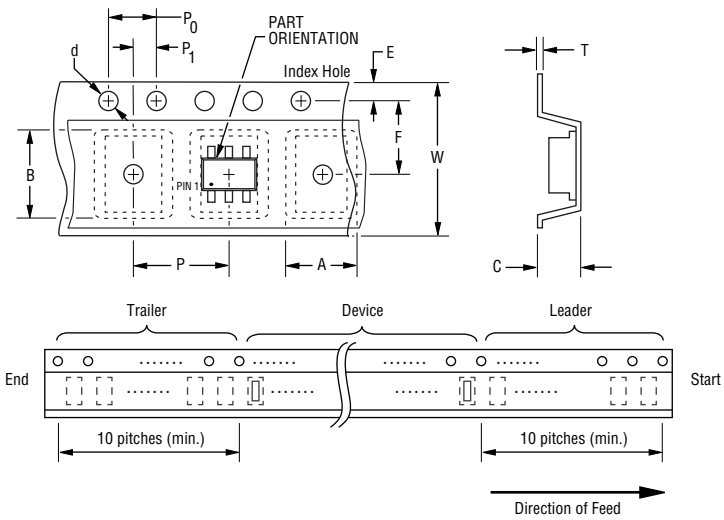
Insertion Loss S21 (I/O to GND)

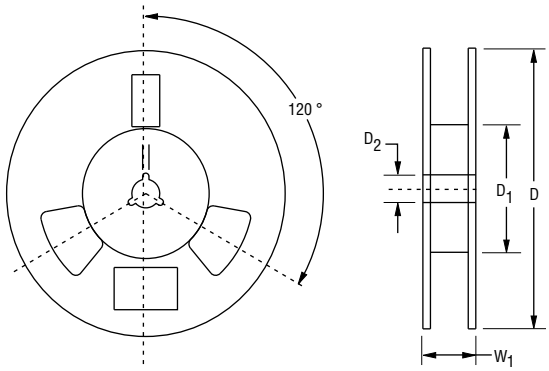


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Packaging Information

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





DIMENSIONS: MM / (INCHES)

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 (1.969) MIN.
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 (0.567) MAX.
Quantity per Reel	--	3000

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