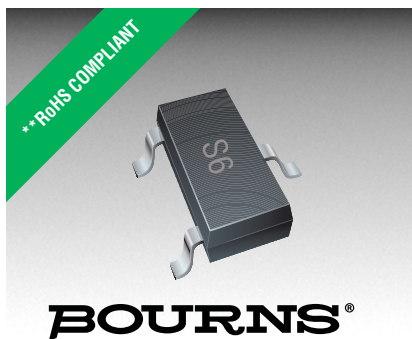




Features

- Lead free*
- High-speed switching
- Surge withstand
- RoHS compliant**

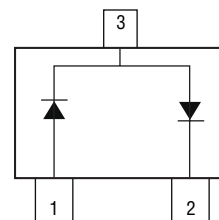
Applications

- Personal Digital Assistants (PDAs)
- Mobile phones and accessories
- Memory card protection
- SIM card port protection
- Portable electronics

CDSOT23-S2004 - Switching Diode Array

General Information

The Bourns® Model CDSOT23-S2004 device is a high-speed switching diode array offering a Working Peak Reverse Voltage of 240 V and a Minimum Breakdown Voltage of 300 V. The SOT23 packaged device will mount directly onto the industry standard SOT23 footprint. Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and their flat configuration minimizes roll away.



Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDSOT23-S2004	Unit
Peak Repetitive Peak Reverse Voltage	V _{RRM}	300	V
Working Peak Reverse Voltage	V _{RWM}	240	V
DC Blocking Voltage	V _R	240	V
RMS Reverse Voltage	V _R (RMS)	170	V
Forward Continuous Current (Note 2)	I _{FM}	225	mA
Peak Repetitive Forward Current (Note 2)	I _{FRM}	625	mA
Peak Forward Surge Current @ t = 1.0 μs @ t = 1.0 s	I _{FSM}	4.0 1.0	A
Power Dissipation (Note 2)	P _D	350	mW
Storage Temperature	T _{STG}	-55 to +150	°C
Operating Temperature	T _{OPR}	-55 to +150	°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage (Note 1) @ I _R = 100 μA	V _{BR}	300			V
Reverse Leakage Current (Note 1) @ V _R = 240 V	I _R			100	nA
Forward Voltage @ I _F = 20 mA @ I _F = 100 mA	V _F		0.50 0.75	0.87 1.00	V
Diode Capacitance @ V _R = 0 V, f = 1 MHz	C _T		3	5	pF
Thermal Resistance, Junction to Ambient (Note 2)	R _{θJA}			357	°C/W
Reverse Recovery Time @ I _F = I _R = 30 mA, I _{RR} = 3.0 mA, R _L = 100 Ω	t _{rr}			50	ns

Notes:

1. Short duration pulse test used to minimize self-heating effect.
2. Part mounted on FR-4 board with recommended pad layout.

*No lead detected in standard tests of homogeneous materials.

**RoHS Directive 2002/95/EC Jan 27, 2003 including Annex.

Specifications are subject to change without notice.

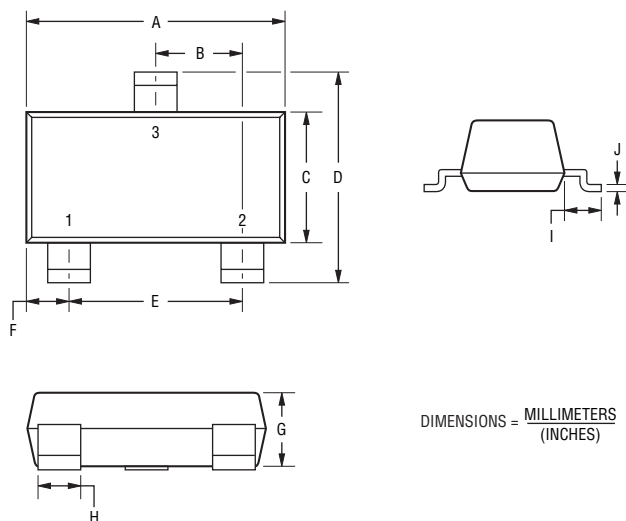
Customers should verify actual device performance in their specific applications.

CDSOT23-S2004 - Switching Diode Array

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Product Dimensions

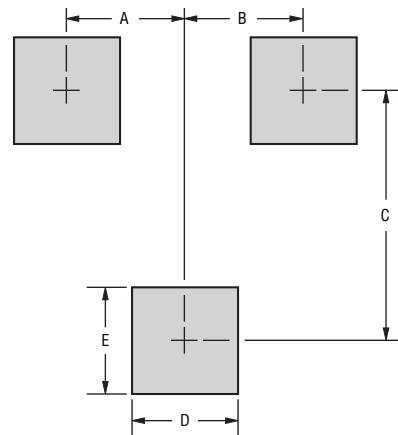
This is a molded JEDEC SOT23 package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 8 mg and has a flammability rating of UL 94V-0.



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

Dimensions	
A	$\frac{2.80 - 3.04}{(0.1102 - 0.1197)}$
B	$\frac{0.89 - 1.02}{(0.0350 - 0.0401)}$
C	$\frac{1.20 - 1.40}{(0.0472 - 0.0551)}$
D	$\frac{2.10 - 2.50}{(0.0830 - 0.0984)}$
E	$\frac{1.78 - 2.04}{(0.0701 - 0.0807)}$
F	$\frac{0.45 - 0.60}{(0.0177 - 0.0236)}$
G	$\frac{0.89 - 1.11}{(0.035 - 0.044)}$
H	$\frac{0.34 - 0.50}{(0.0150 - 0.0200)}$
I	$\frac{0.45 - 0.60}{(0.0180 - 0.0236)}$
J	$\frac{0.085 - 0.177}{(0.0034 - 0.0070)}$

Recommended Footprint



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

Dimensions	
A	$\frac{0.95}{(0.037)}$
B	$\frac{0.95}{(0.037)}$
C	$\frac{2.00}{(0.079)}$
D	$\frac{0.85}{(0.033)}$
E	$\frac{0.85}{(0.033)}$

How to Order

CD SOT23 - S 2004

Common Diode _____
 Chip Diode _____
 Package _____
 SOT23 = SOT23 Package _____
 Model _____
 S = Switching Diode _____
 Working Peak Reverse Voltage _____
 2004 = 240 V_{RWM} (Volts) _____

Typical Part Marking

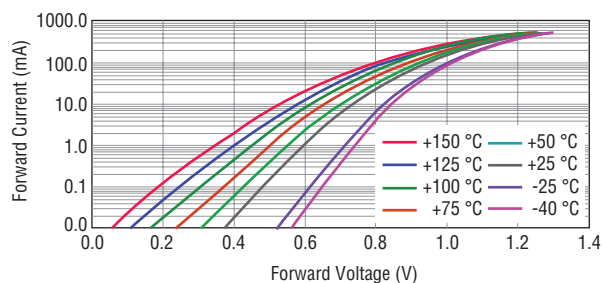
CDSOT23-S2004..... S6

CDSOT23-S2004 - Switching Diode Array

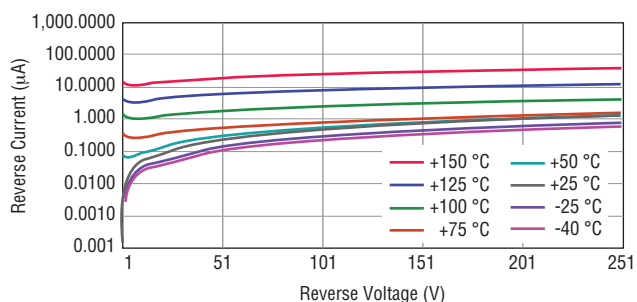
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Performance Graphs

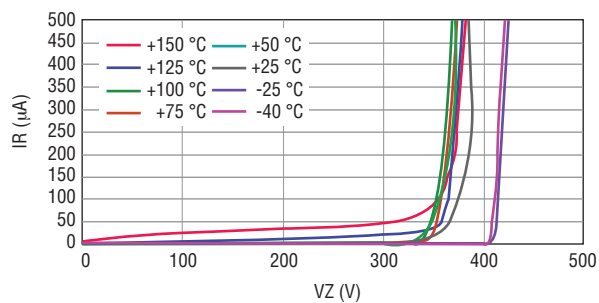
Forward Current Characteristics



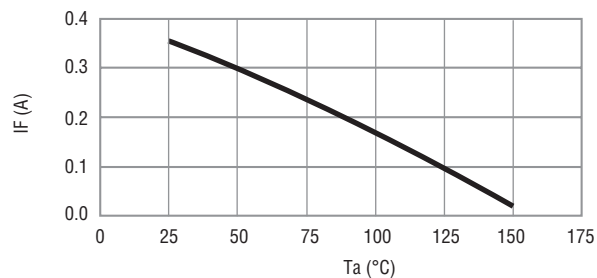
Reverse Current Characteristics



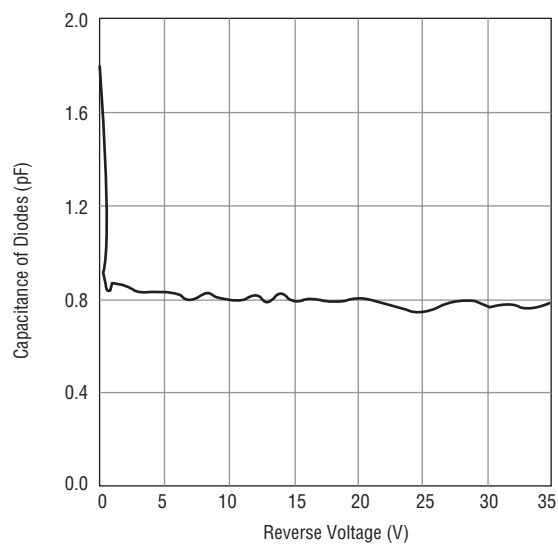
Reverse Voltage Characteristics



Power Derating Curve



Typical Capacitance



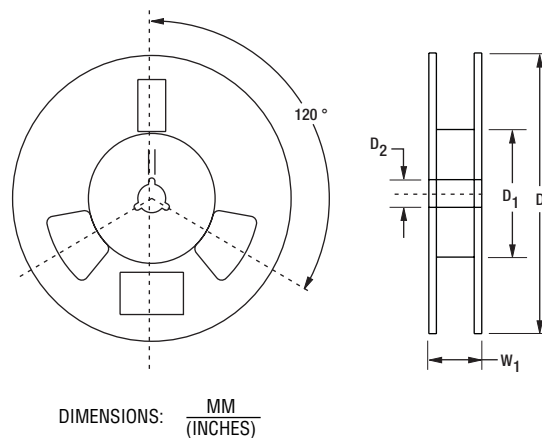
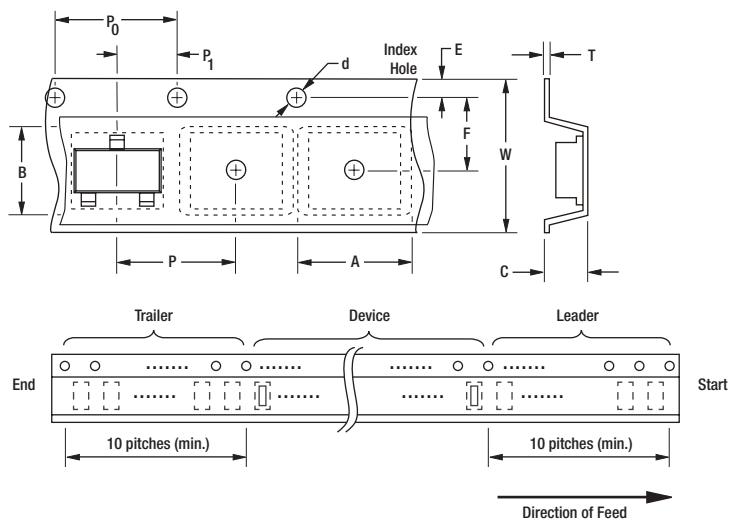
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

CDSOT23-S2004 - Switching Diode Array

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Packaging Information

The product is packaged in a 12 mm x 8 mm tape and reel format per EIA-481-A standard.



Item	Symbol	SOT23
Carrier Width	A	$\frac{2.25 \pm 0.10}{(0.088 \pm 0.004)}$
Carrier Length	B	$\frac{2.34 \pm 0.10}{(0.092 \pm 0.004)}$
Carrier Depth	C	$\frac{1.22 \pm 0.10}{(0.048 \pm 0.004)}$
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	$\frac{50.0}{(1.969)} \text{ MIN.}$
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	$\frac{14.4}{(0.567)} \text{ MAX.}$
Quantity per Reel	--	3,000

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