

Features

- RoHS compliant*
- Leadless chip form
- High current capability
- Low forward voltage
- Halogen free**

Applications

- Switch Mode Power Supplies (SMPS)
- Portable equipment batteries
- High frequency rectification
- DC/DC converters
- Telecommunications

CD0603-B0xR Schottky Barrier Chip Diode Series

General Information

Portable communications, computing and video equipment manufacturers are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers small-signal Schottky Barrier Diodes for switching and rectification applications, in a compact chip package compatible with 0603 (1608 metric) size format. The Schottky Barrier Diodes offer a repetitive peak reverse voltage of 40 V with a choice of forward current of 200 mA and 300 mA.



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

Parameter	Symbol	CD0603-		Unit
		B0240R	B0340R	
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	40		V
Maximum Average Forward Rectified Current (T _A = 55 °C)	I _{F(AV)}	200	300	mA
Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I _{FSM}	2		A
Operating Temperature Range	T _J	-40 to +125		°C
Storage Temperature Range	T _{STG}	-40 to +125		°C

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Instantaneous Forward Voltage	V _F	I _F = 50 mA	CD0603-B0240R	0.35	0.5	V	
		I _F = 100 mA		0.38			
		I _F = 200 mA		0.43			
		I _F = 100 mA		CD0603-B0340R			0.38
		I _F = 200 mA					0.43
		I _F = 300 mA					0.47
Repetitive Peak Reverse Current	I _{RRM}	V _R = 10 V	CD0603-B0240R	0.5	1	μA	
			CD0603-B0340R	3	50		
Junction Capacitance	C _J	V _R = 4 V, f = 1.0 MHz		35		pF	
Thermal Resistance	R _{θJA}	Junction to Ambient		160		°C/W	
	R _{θJL}	Junction to Lead		110			

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

**Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

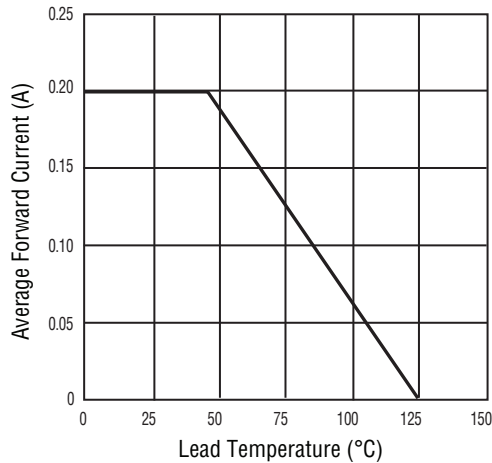
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CD0603-B0xR Schottky Barrier Chip Diode Series

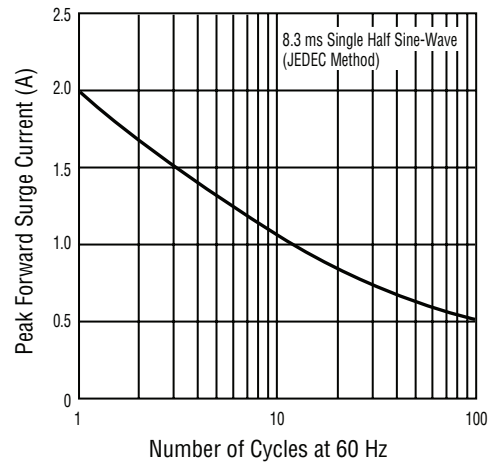
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Performance Graphs - Model CD0603-B0240R

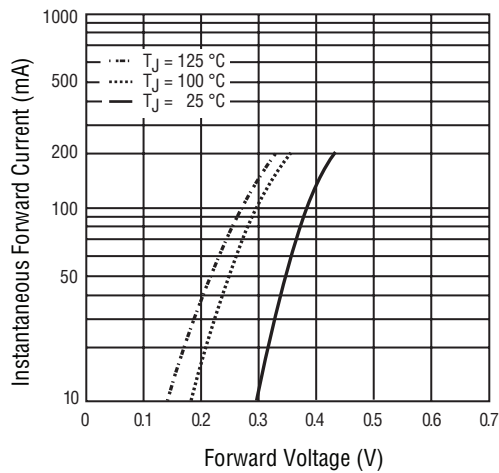
Forward Current Derating Curve



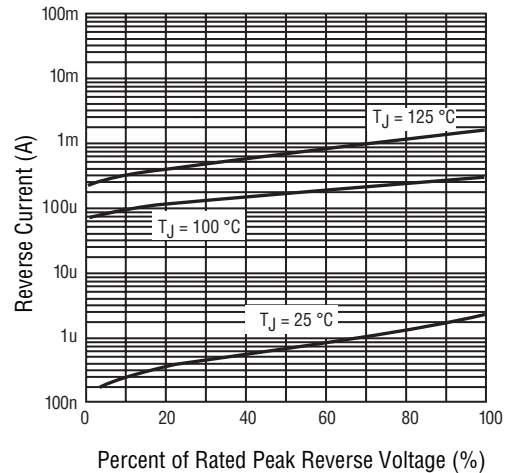
Maximum Non-Repetitive Peak Forward Surge Current



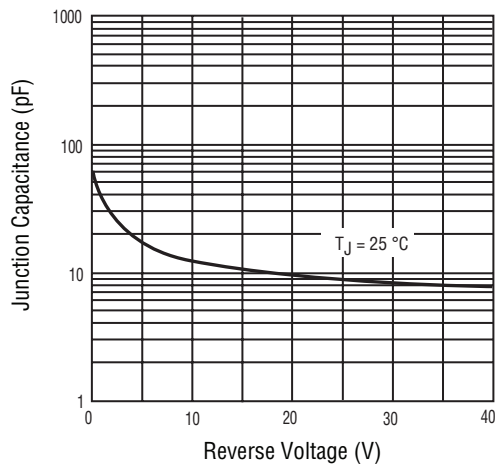
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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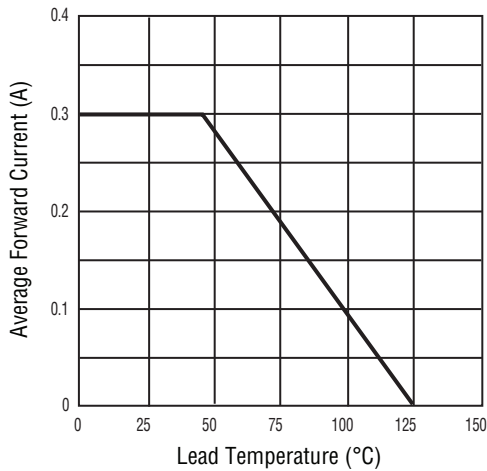
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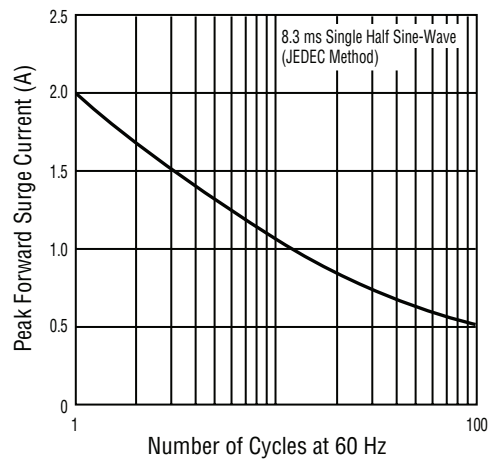
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Performance Graphs - Model CD0603-B0340R

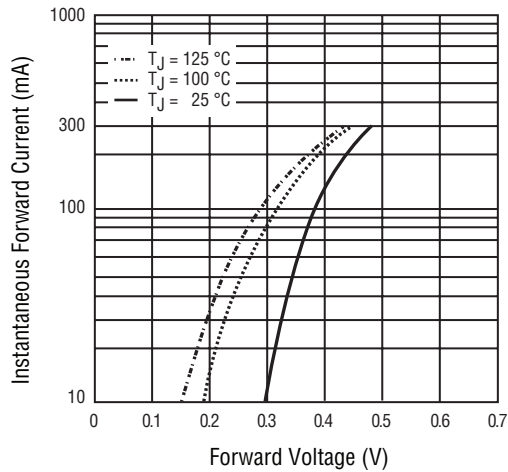
Forward Current Derating Curve



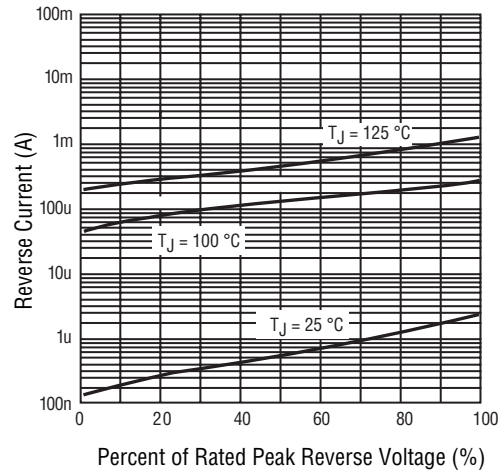
Maximum Non-Repetitive Peak Forward Surge Current



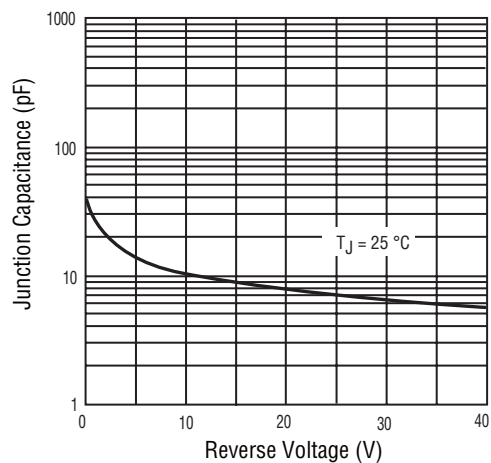
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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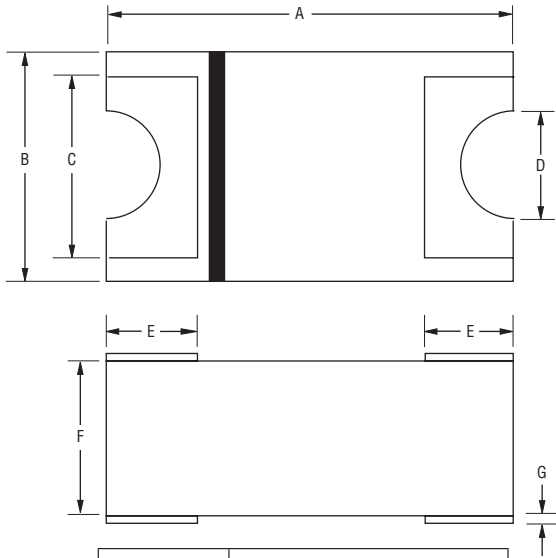
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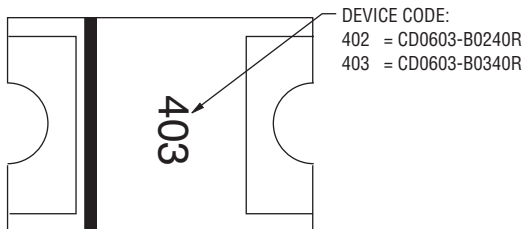
Product Dimensions



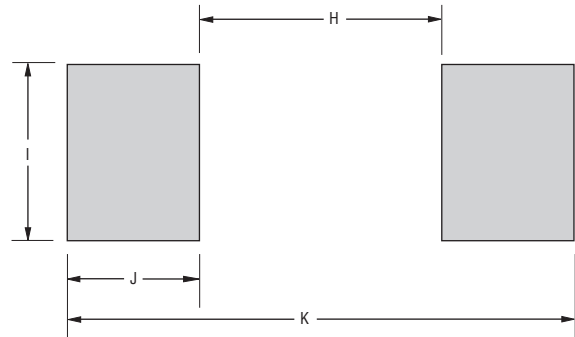
Dimension	CD0603-B0xR
A	$\frac{1.6 \pm 0.10}{(0.063 \pm 0.004)}$
B	$\frac{0.9 \pm 0.10}{(0.035 \pm 0.004)}$
C	$\frac{0.7 \pm 0.10}{(0.028 \pm 0.004)}$
D	$\frac{0.20}{(0.008)} R$
E	$\frac{0.35 \pm 0.05}{(0.014 \pm 0.002)}$
F	$\frac{0.6 +0.2/-0.1}{(0.024 +0.008/-0.004)}$
G	$\frac{0.03}{(0.001)}$

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

Typical Part Marking



Recommended Pad Layout



Dimension	CD0603-B0xR
H	$\frac{1.10}{(0.043)} \text{ MAX.}$
I	$\frac{0.80}{(0.031)} \text{ MIN.}$
J	$\frac{0.60}{(0.024)} \text{ MIN.}$
K	$\frac{2.30}{(0.091)} \text{ REF.}$

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

Physical Specifications

EncapsulationMolded plastic per UL Class 94V-0
 Polarity.....Cathode band indicates unidirectional device
 No cathode band indicates bidirectional device

Environmental Specifications

Moisture Sensitivity Level.....1
 ESD Classification (HBM).....3B

How to Order

CD 0603 - B 02 40 R

Common Code _____
 CD = Chip Diode

Package _____
 0603 = 0603 Package

Model _____
 B = Schottky Barrier Diode

Average Forward Current _____
 02 = 200 mA
 03 = 300 mA

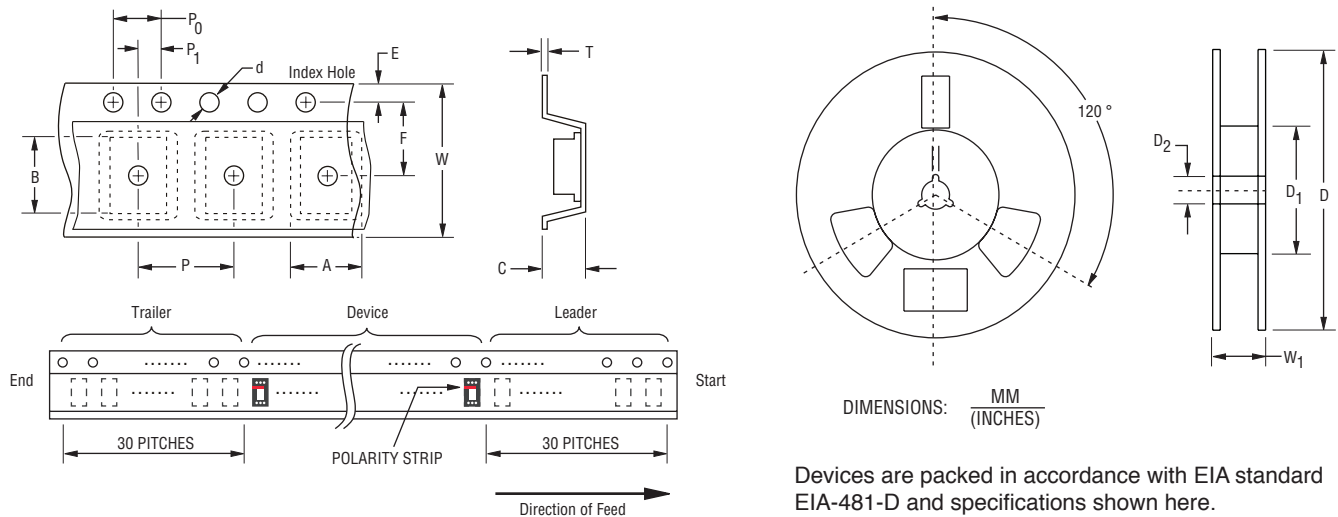
Reverse Voltage _____
 40 = 40 V

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Packaging Information

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



Item	Symbol	CD0603
Carrier Width	A	0.99 ± 0.08 (0.039 ± 0.003)
Carrier Length	B	1.82 ± 0.08 (0.072 ± 0.003)
Carrier Depth	C	1.00 ± 0.10 (0.039 ± 0.004)
Sprocket Hole	d	1.50 ± 0.10 (0.059 ± 0.004)
Reel Outside Diameter	D	178 ± 2.0 (7.008 ± 0.079)
Reel Inner Diameter	D ₁	60 ± 0.5 (2.362 ± 0.020)
Feed Hole Diameter	D ₂	13.50 ± 0.5 (0.532 ± 0.020)
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 ± 0.10 (0.079 ± 0.004)
Overall Tape Thickness	T	0.40 (0.016) MAX.
Tape Width	W	8.00 ± 0.30 (0.315 ± 0.012)
Reel Width	W ₁	12.00 ± 0.50 (0.472 ± 0.020)
Quantity per Reel	--	3000

REV. 11/17

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