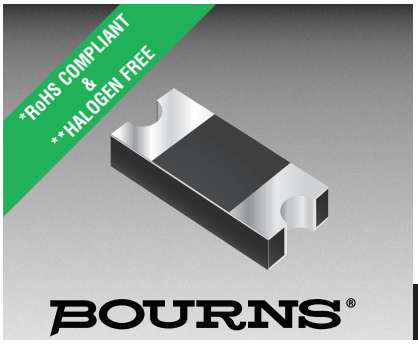


## Features

- 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 | | V |
| | | $I_F$ = 100 mA | | | 0.38 | | |
| | | $I_F$ = 200 mA | | | 0.43 | 0.5 | |
| | | $I_F$ = 100 mA | CD0603-B0340R | | 0.38 | | |
| | | $I_F$ = 200 mA | | | 0.43 | | |
| | | $I_F$ = 300 mA | | | 0.47 | 0.5 | |
| 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 | $R_{\theta JA}$ | Junction to Ambient | | | 160 | | °C/W |
| | $R_{\theta JL}$ | Junction to Lead | | | 110 | | |

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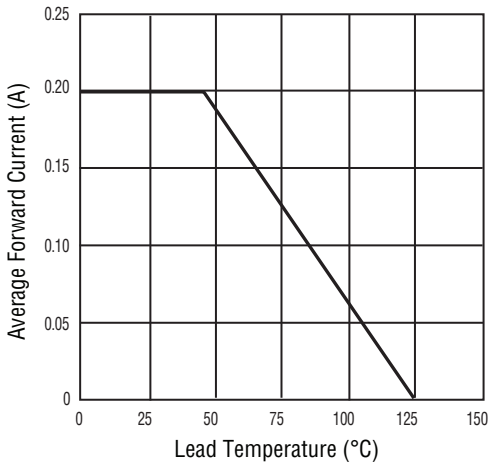
**www.bourns.com**

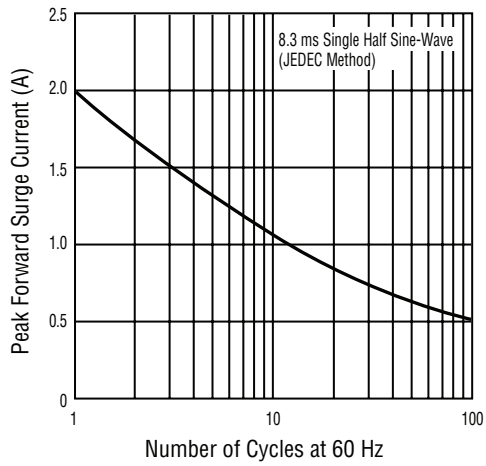
* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
**Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

## Performance Graphs - Model CD0603-B0240R

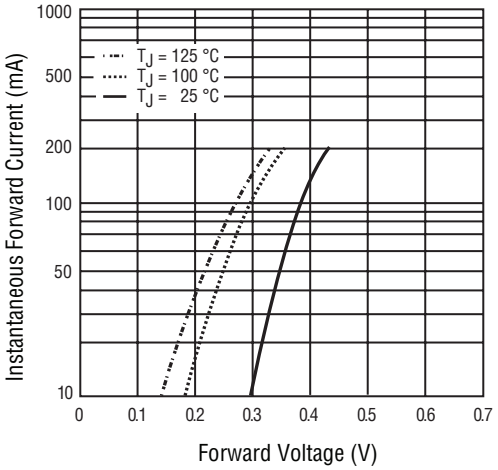
### Forward Current Derating Curve



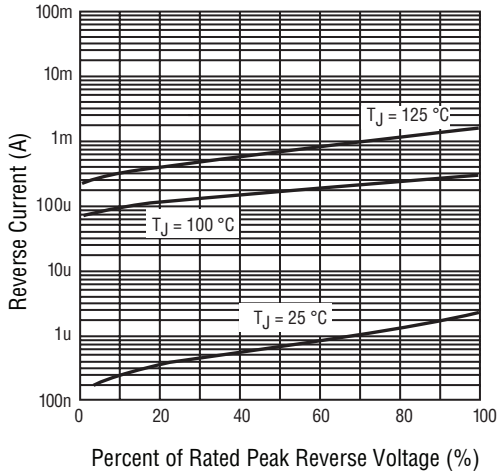

### Maximum Non-Repetitive Peak Forward Surge Current



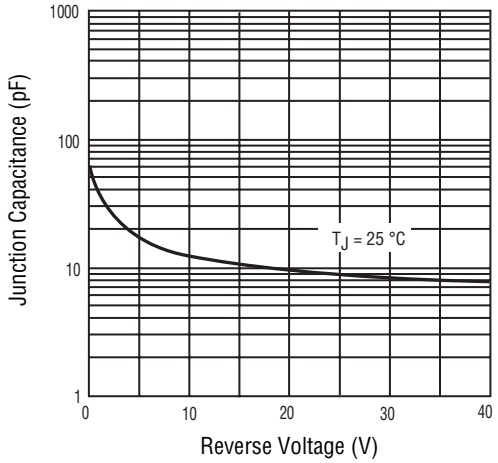

### Typical Forward Characteristics




### Typical Reverse Characteristics

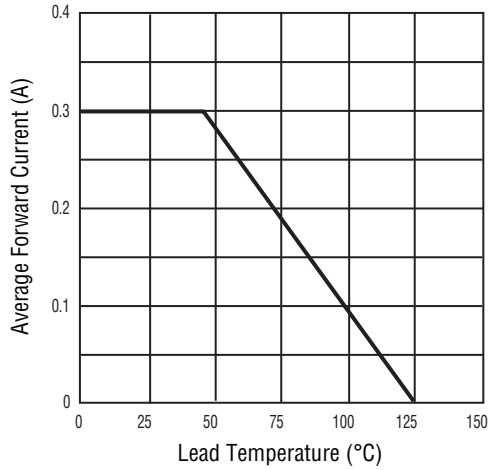



### Typical Junction Capacitance

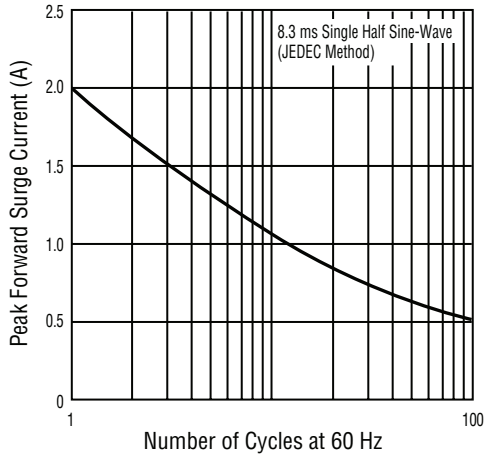


## Performance Graphs - Model CD0603-B0340R

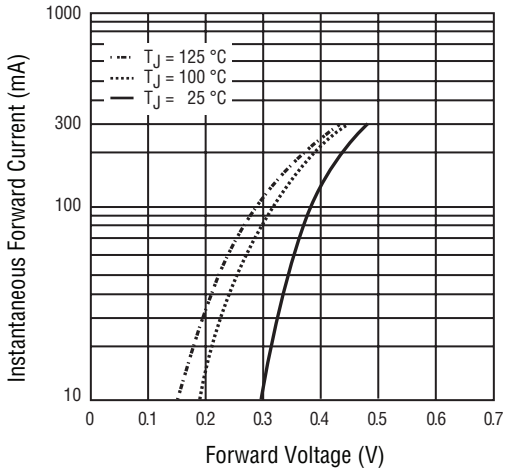
### Forward Current Derating Curve



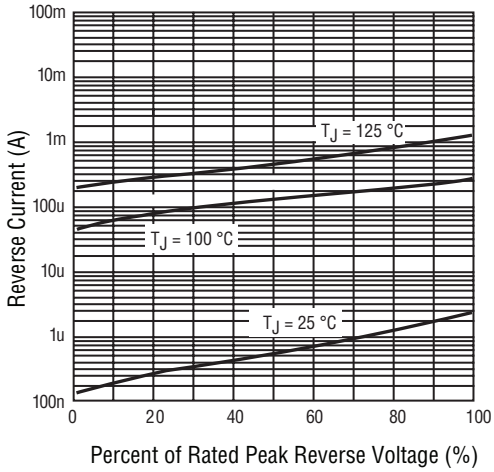

### Maximum Non-Repetitive Peak Forward Surge Current



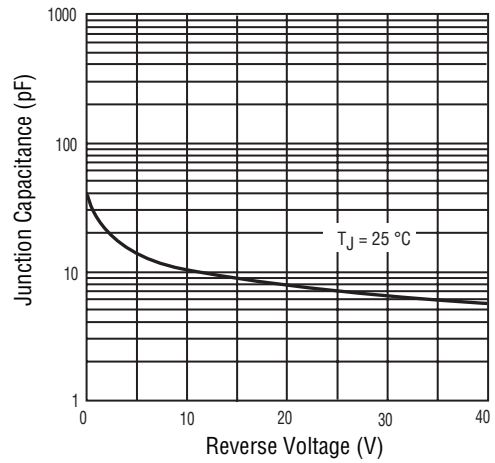

### Typical Forward Characteristics



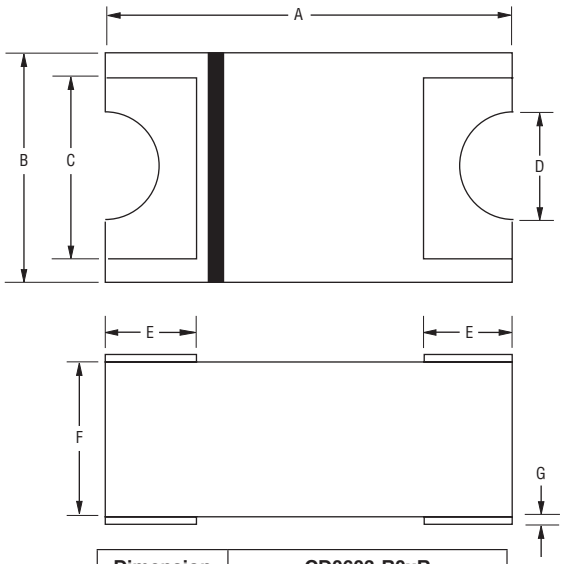

### Typical Reverse Characteristics




### Typical Junction Capacitance



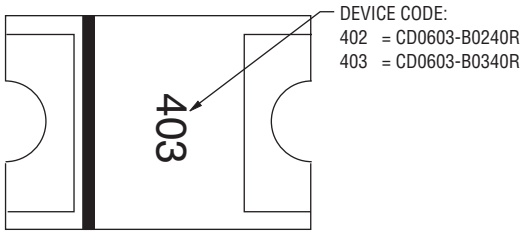
## Product Dimensions



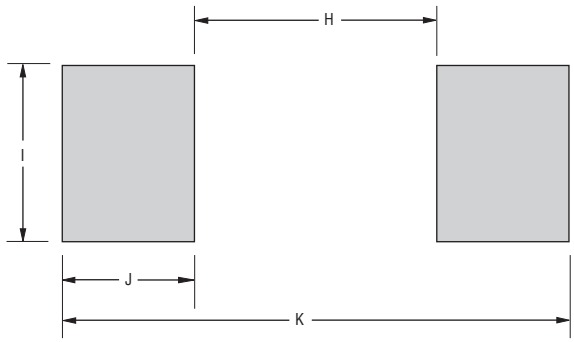

| Dimension | CD0603-B0xR |
|---|---|
| A | 1.6 ± 0.10 (0.063 - 0.004) |
| B | 0.9 ± 0.10 (0.035 - 0.004) |
| C | 0.7 ± 0.10 (0.028 - 0.004) |
| D | 0.20 (0.008) R |
| E | 0.35 ± 0.05 (0.014 ± 0.002) |
| F | 0.6 +0.2/-0.1 (0.024 +0.008/-0.004) |
| G | 0.03 (0.001) |

DIMENSIONS: MM (INCHES)

## Typical Part Marking




## Recommended Pad Layout




| Dimension | CD0603-B0xR |
|---|---|
| H | 1.10 (0.043) MAX. |
| I | 0.80 (0.031) MIN. |
| J | 0.60 (0.024) MIN. |
| K | 2.30 (0.091) REF. |

DIMENSIONS: MM (INCHES)

## Physical Specifications

Encapsulation.....Molded 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

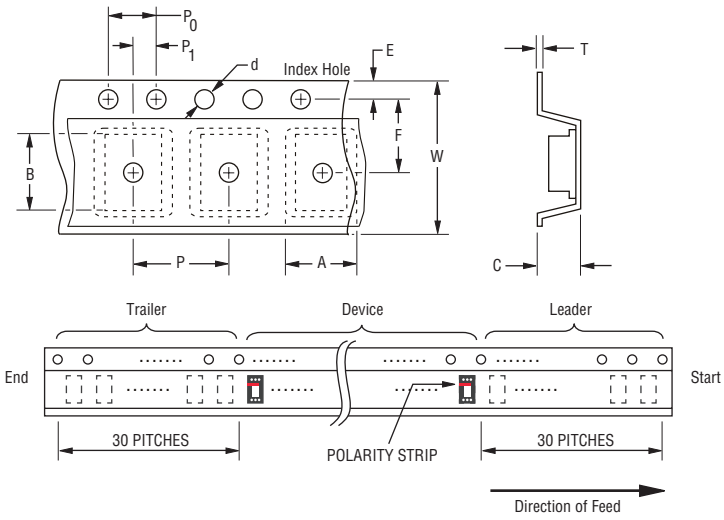
Model
B = Schottky Barrier Diode

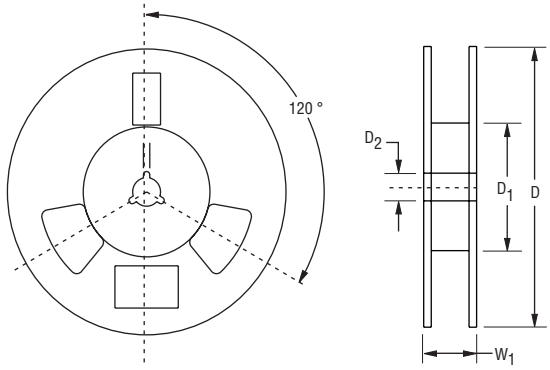
Average Forward Current
02 = 200 mA
03 = 300 mA

Reverse Voltage
40 = 40 V

## Packaging Information

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




DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA standard EIA-481-D and specifications shown here.

| 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 |

PRELIMINARY

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