



Features

- Lead free as standard
- RoHS compliant*
- Leadless
- Low stored charge



This series is currently available, but not recommended for new designs. The [Model CD0603-B0xR Series](#) is the recommended replacement.

CD0603/1005 Schottky Barrier Chip Diode Series

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers small-signal high-speed Schottky Barrier Diodes for switching and rectification applications, in compact chip package 0603 and 1005 size format, which offer PCB real estate savings and are considerably smaller than most competitive parts. The Schottky Barrier Diodes offer a forward current of 30 mA, 100 mA or 200 mA, a reverse voltage of 30 V and 40 V and also have a low forward voltage option. The diodes are lead free with Cu/Ni/Au plated terminations and are compatible with lead free manufacturing processes, conforming to many industry and government regulations on lead free components.

Bourns® Chip Diodes conform to JEDEC standards, easy to handle on standard pick and place equipment and their flat configuration makes roll away much more difficult.

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

Parameter	Symbol	CDxxx-B00340	CDxxx-B0130L	CDxxx-B0140L	CDxxx-B0140R	CDxxx-B0230	CDxxx-B0240	Unit
Forward Voltage (Max.)	V _F	0.37 (I _f = 1 mA)	0.44 (I _f = 0.1 A)	0.55 (I _f = 0.1 A)	0.45 (I _f = 0.01 A)	0.50 (I _f = 0.2 A)	0.55 (I _f = 0.2 A)	V
Capacitance Between Terminals (Max.) (f = 1 MHz)	C _T	1.5 (V _r = 1 V)	9 (V _r = 10 V)	9 (V _r = 10 V)	9 (V _r = 10 V)	12 (V _r = 10 V)	12 (V _r = 10 V)	pF
Reverse Current (Max.)	I _R	1 (V _r = 40 V)	30 (V _r = 30 V)	30 (V _r = 10 V)	1 (V _r = 10 V)	30 (V _r = 30 V)	10 (V _r = 30 V)	μA

How To Order

CD 0603 - B 01 30 L

Common Code _____
Chip Diode

Package _____
• 0603
• 1005

Model _____
B = Schottky Barrier Series

Average Forward Current (I_o) Code _____
003 = 30 mA
01 = 100 mA
02 = 200 mA
(Code x 1000 mA = Average Forward Current)

Reverse Voltage (V_R) Code _____
30 = 30 V
40 = 40 V

Forward Voltage Suffix _____
L = Low Forward Voltage V_f (CDxxx-B0130L)
R = Low Reverse Current V_R (CDxxx-B0140R)



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

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

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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CD0603/1005 Schottky Barrier Chip Diode Series

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

Parameter	Symbol	CD0603-B00340	CD0603-B0130L	CD0603-B0140L	CD0603-B0140R	CD0603-B0230	CD0603-B0240	Unit
Repetitive Peak Reverse Voltage	V _{RRM}	45	35	45	45	35	45	V
Reverse Voltage	V _R	40	30	40	40	30	40	V
Average Forward Current	I _O	30	100	100	100	200	200	mA
Forward Current, Surge Peak	I _{surge}	500*	1000*	1000*	1000*	2000*	2000*	mA
Power Dissipation	PD		150					mW
Storage Temperature	T _{STG}		-40 to +125					°C
Junction Temperature	T _J		-40 to +125					°C

Parameter	Symbol	CD1005-B00340	CD1005-B0130L	CD1005-B0140L	CD1005-B0140R	CD1005-B0230	CD1005-B0240	Unit
Repetitive Peak Reverse Voltage	V _{RRM}	45	35	45	45	35	45	V
Reverse Voltage	V _R	40	30	40	40	30	40	V
Average Forward Current	I _O	30	100	100	100	200	200	mA
Forward Current, Surge Peak	I _{surge}	500*	1000*	1000*	1000*	3000*	3000*	mA
Power Dissipation	PD	200	250	250	250	250	250	mW
Storage Temperature	T _{STG}		-40 to +125					°C
Junction Temperature	T _J		-40 to +125					°C

* Condition: 8.3 ms single half sine-wave superimposed on rate load (JEDEC method).

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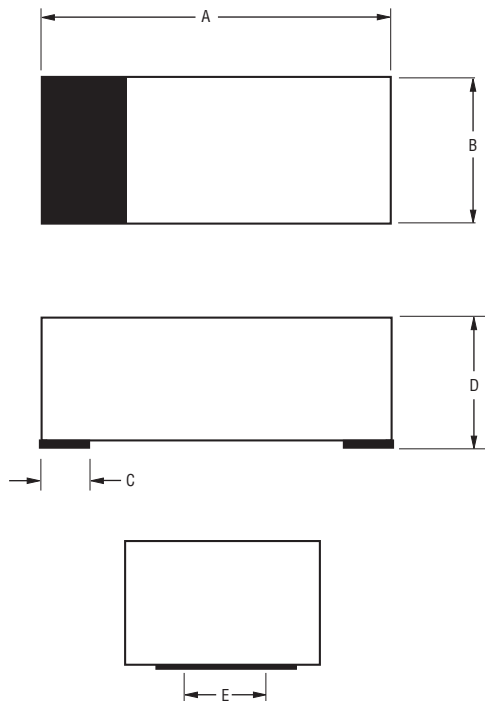
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CD0603/1005 Schottky Barrier Chip Diode Series

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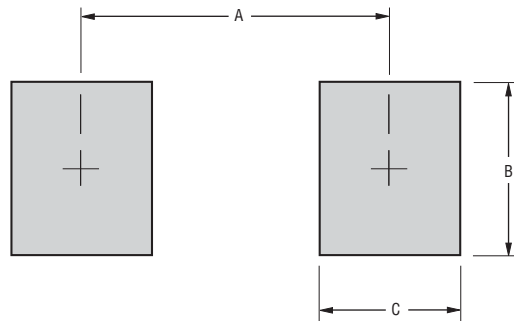
Product Dimensions



Dimension	0603	1005
A	$\frac{1.60 - 1.80}{(0.063 - 0.071)}$	$\frac{2.40 - 2.60}{(0.095 - 0.102)}$
B	$\frac{0.80 - 1.00}{(0.031 - 0.039)}$	$\frac{1.10 - 1.30}{(0.043 - 0.051)}$
C	$\frac{0.45}{(0.018)}$ Typ.	$\frac{0.50}{(0.020)}$ Typ.
D	$\frac{0.70 - 0.85}{(0.027 - 0.033)}$	$\frac{0.70 - 0.90}{(0.027 - 0.035)}$
E	$\frac{0.70}{(0.028)}$ Typ.	$\frac{1.00}{(0.039)}$ Typ.

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

Recommended Pad Layout



Dimension	0603	1005
A (Max.)	$\frac{1.25}{(0.049)}$	$\frac{2.00}{(0.079)}$
B (Min.)	$\frac{1.00}{(0.039)}$	$\frac{1.3}{(0.051)}$
C (Min.)	$\frac{0.6}{(0.024)}$	$\frac{0.7}{(0.028)}$

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

Physical Specifications

Case0603(1608) / 1005(2512) Molded plastic
 Terminals.....Gold plated, solderable per MIL-STD-750,
 Method 2026
 PolarityIndicated by cathode band
 Mounting PositionAny
 Weight0.000159 ounces / 0.0045 grams

Typical Part Marking

CDxxxx-B00340**B2**
 CDxxxx-B0130L**B3**
 CDxxxx-B0140L**B8**
 CDxxxx-B0140R.....**B9**
 CDxxxx-B0230**B5**
 CDxxxx-B0240**B7**

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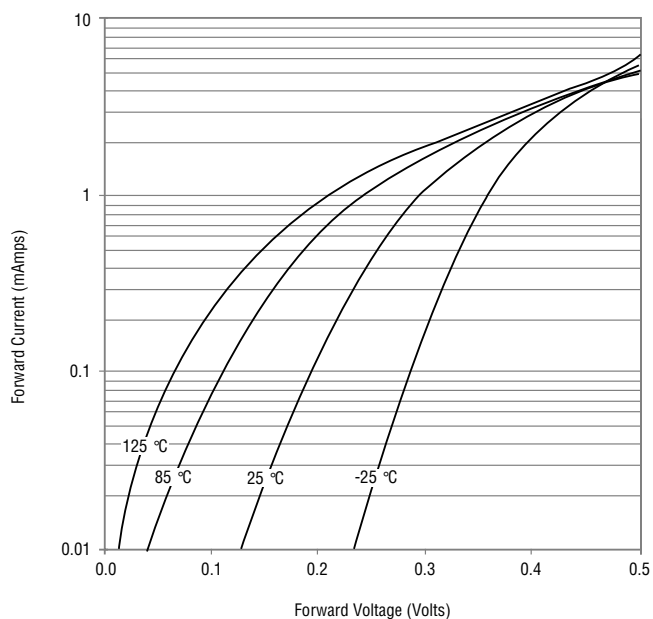
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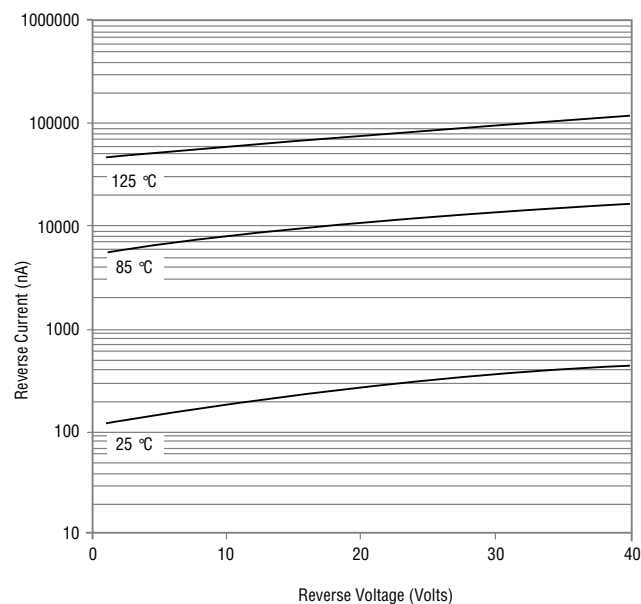
BOURNS®

Rating and Characteristic Curves: CDxxx-B00340

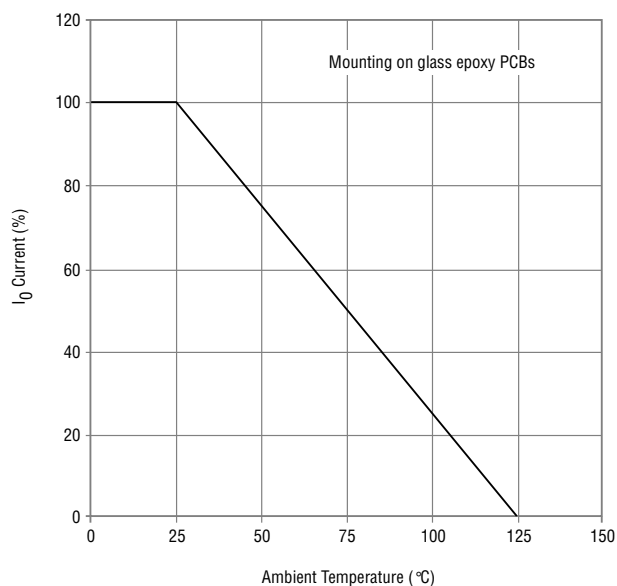
Forward Characteristics



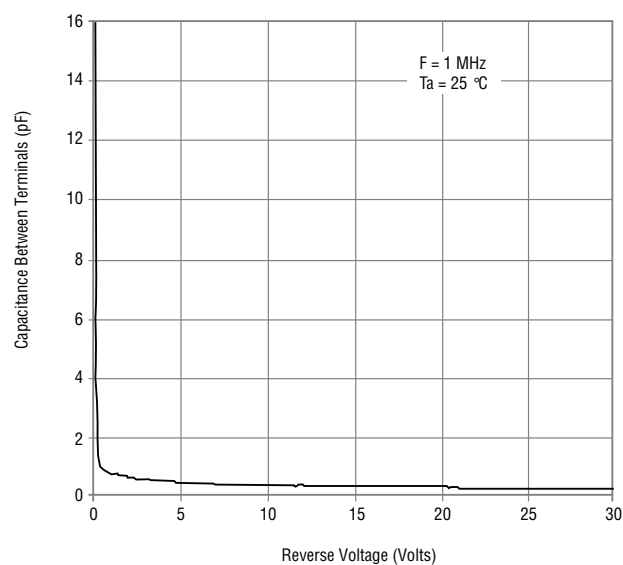
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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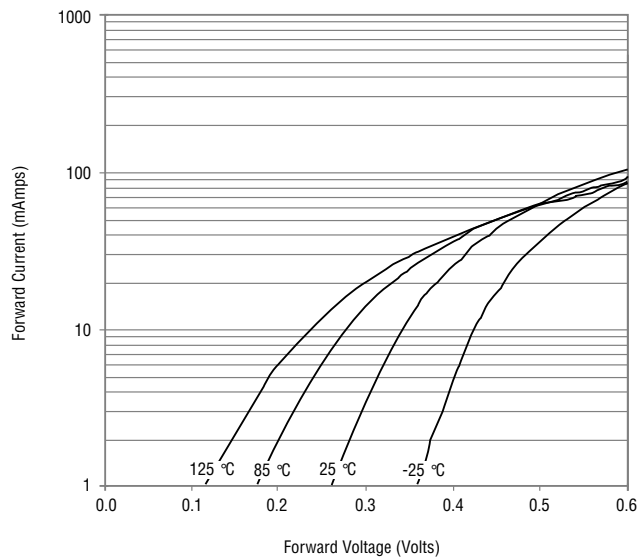
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CD0603/1005 Schottky Barrier Chip Diode Series

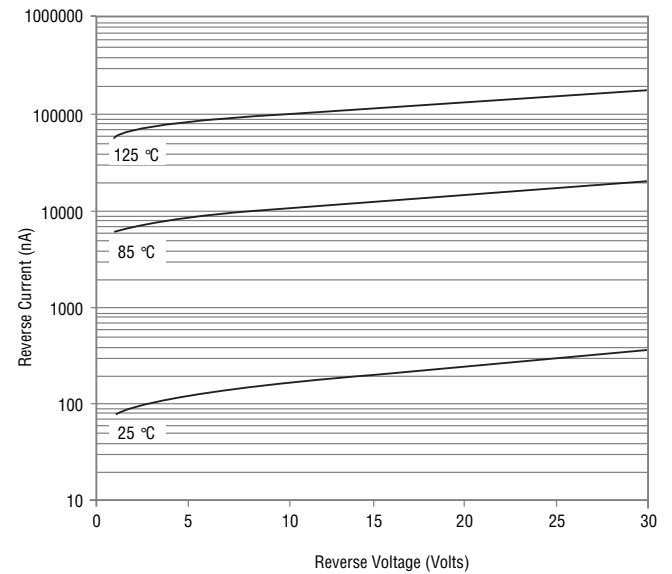
BOURNS®

Rating and Characteristic Curves: CDxxxx-B0130L

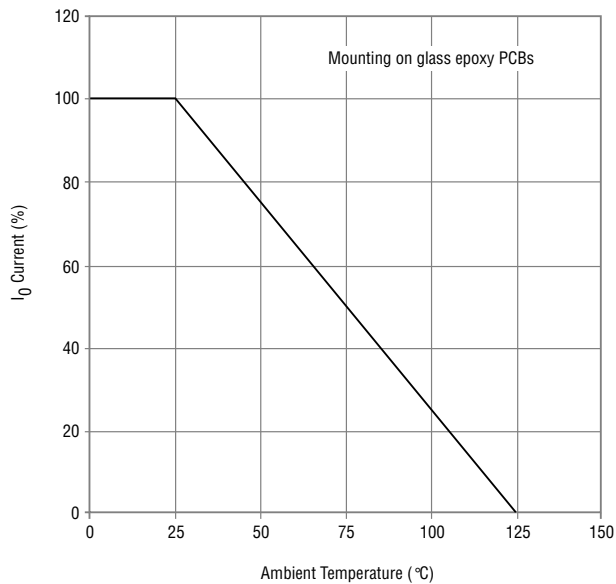
Forward Characteristics



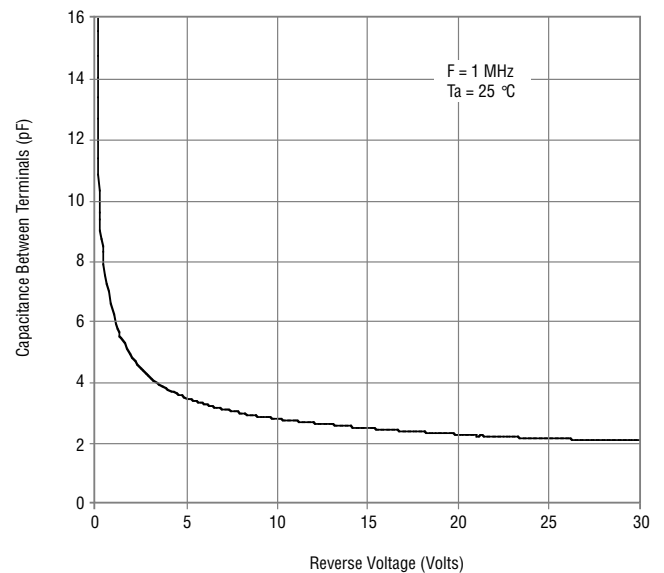
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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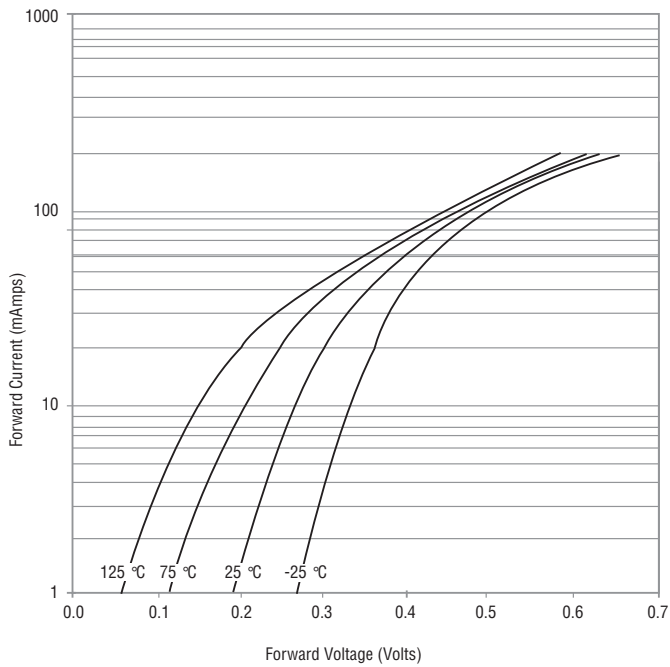
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CD0603/1005 Schottky Barrier Chip Diode Series

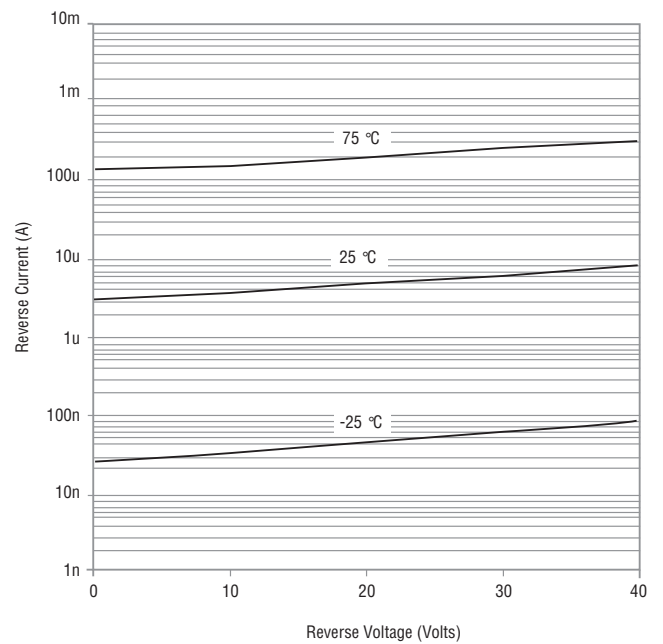
BOURNS®

Rating and Characteristic Curves: CDxxxx-B0140L

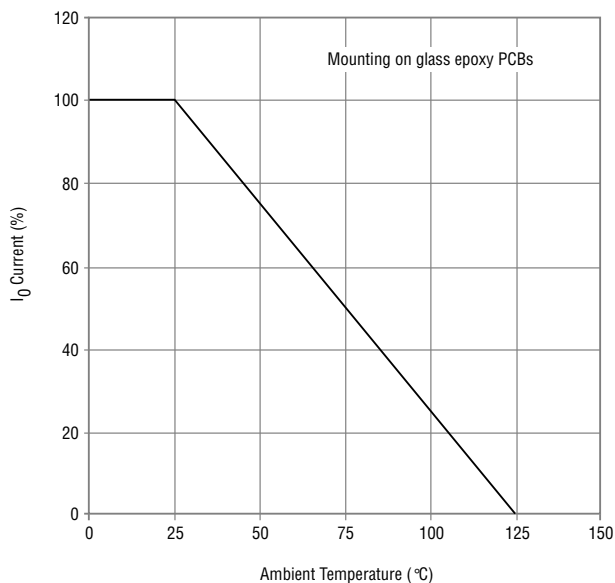
Forward Characteristics



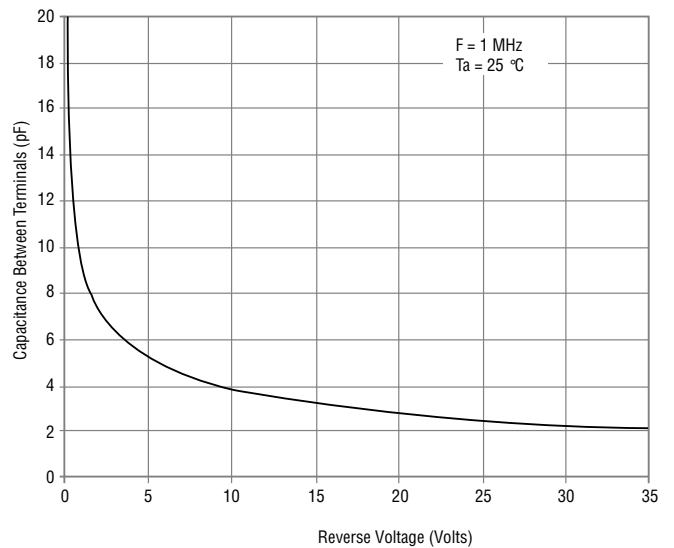
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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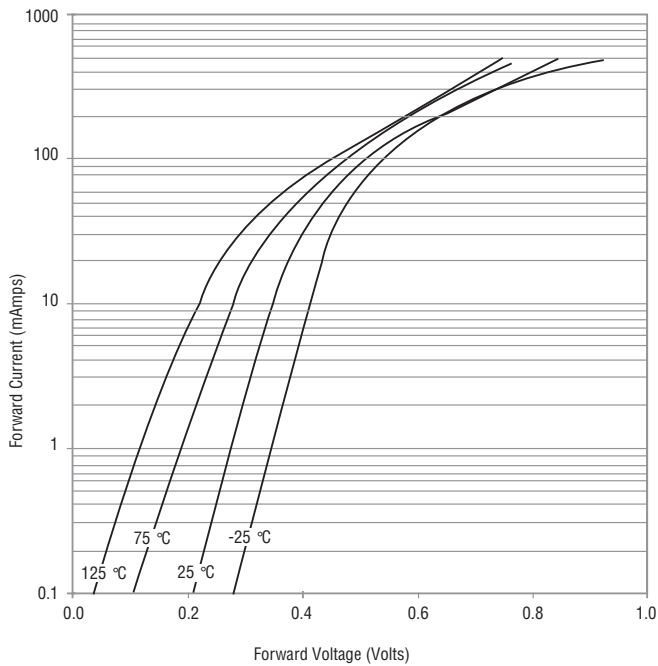
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CD0603/1005 Schottky Barrier Chip Diode Series

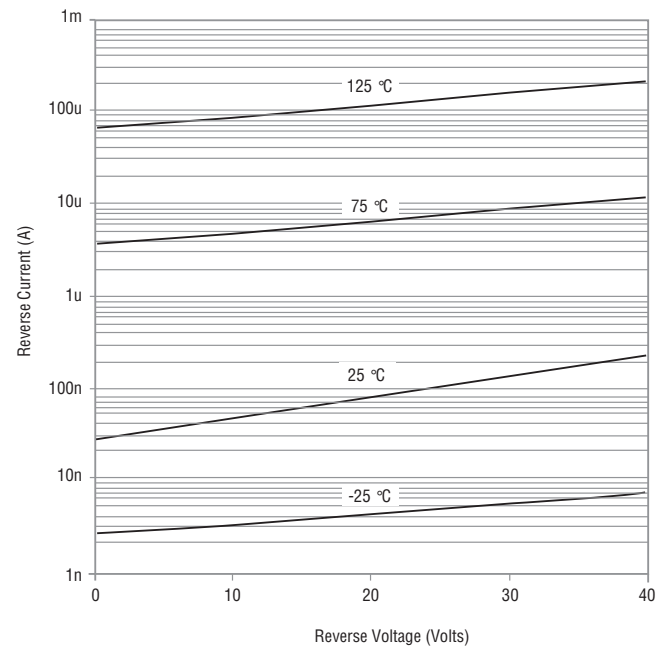
BOURNS®

Rating and Characteristic Curves: CDxxxx-B0140R

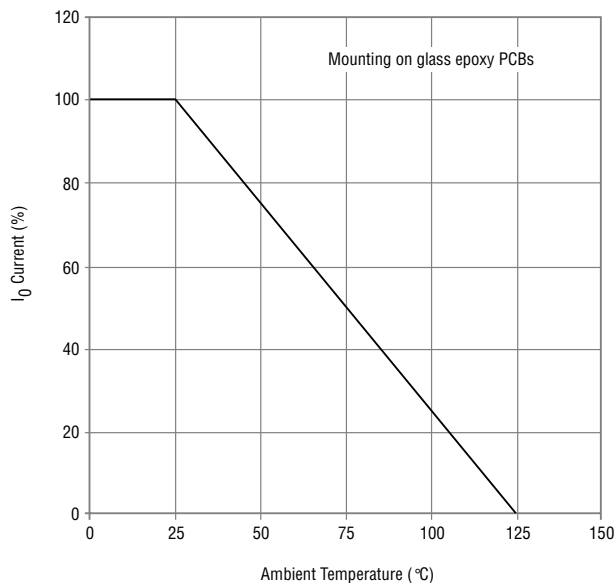
Forward Characteristics



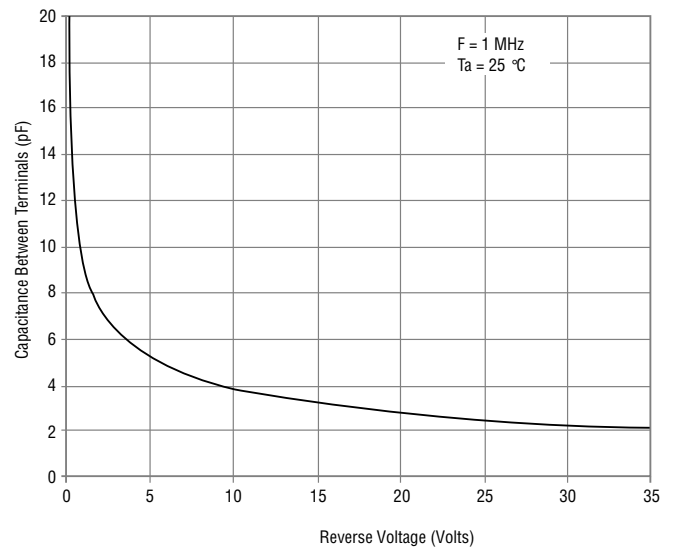
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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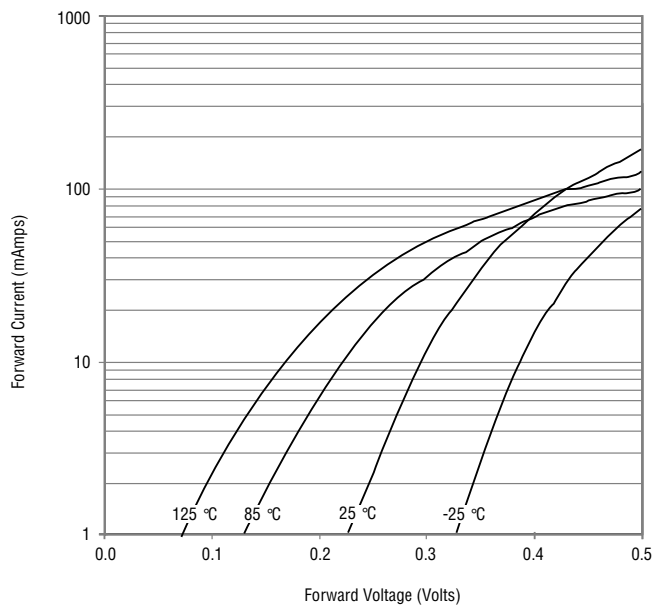
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CD0603/1005 Schottky Barrier Chip Diode Series

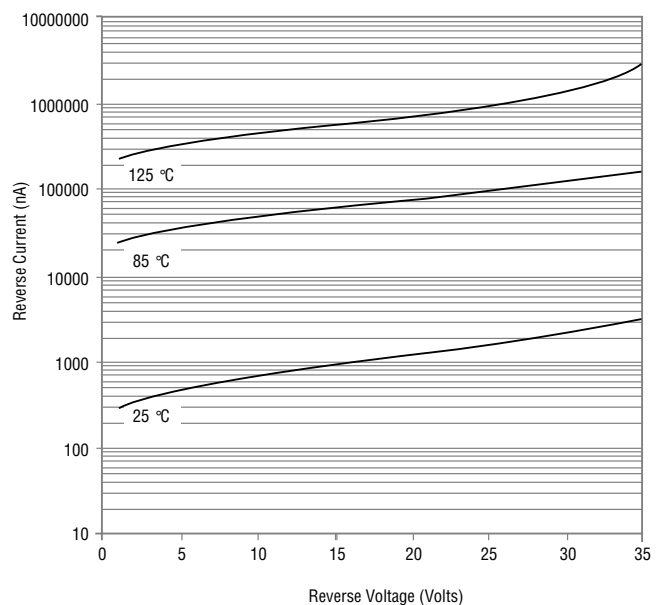
BOURNS®

Rating and Characteristic Curves: CDxxx-B0230

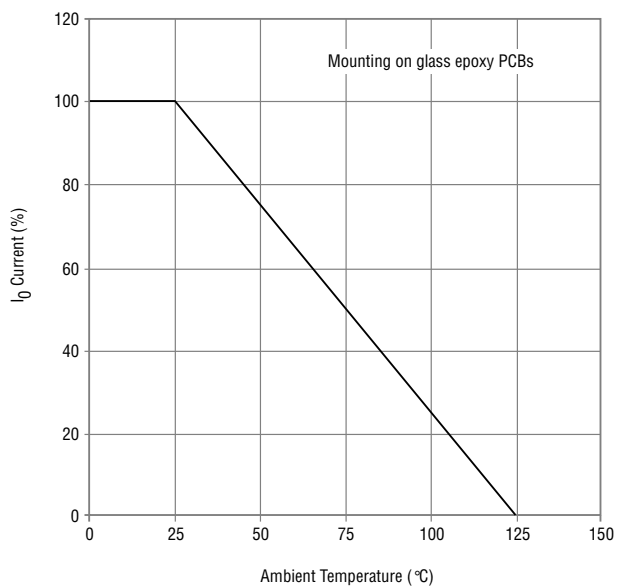
Forward Characteristics



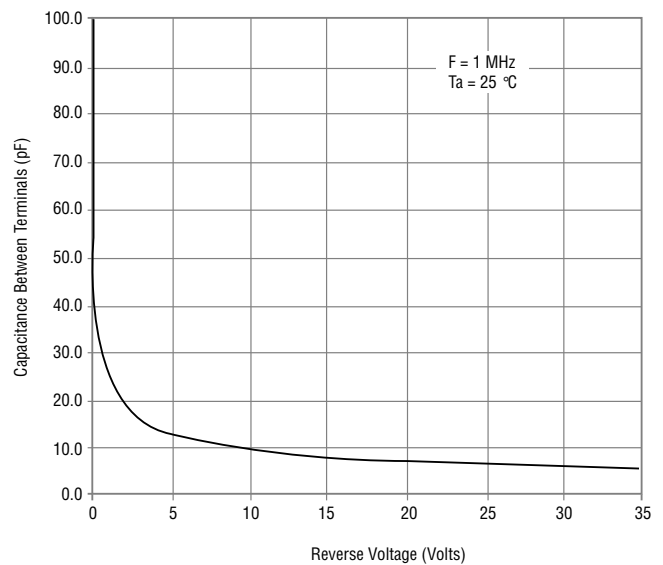
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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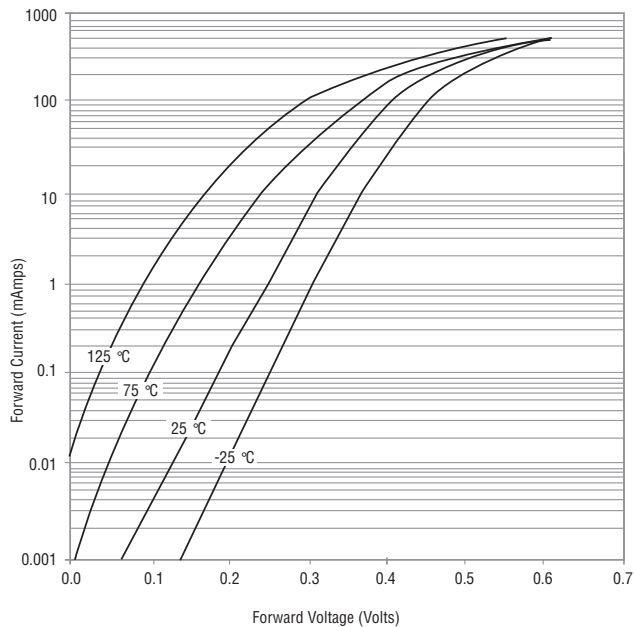
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CD0603/1005 Schottky Barrier Chip Diode Series

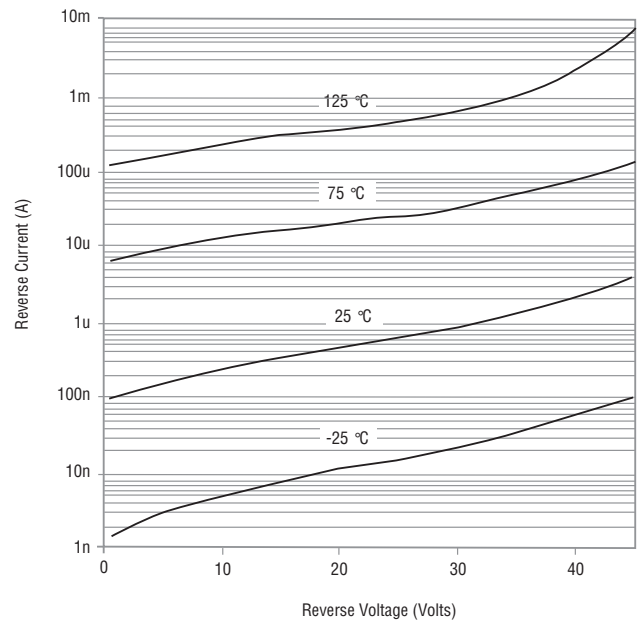
BOURNS®

Rating and Characteristic Curves: CDxxxx-B0240

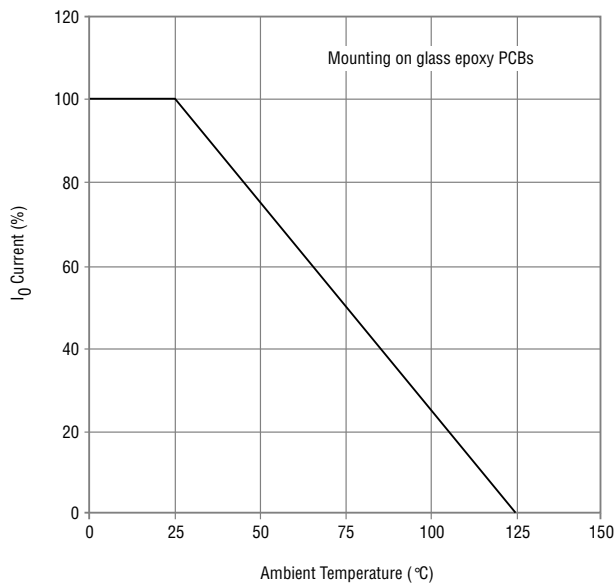
Forward Characteristics



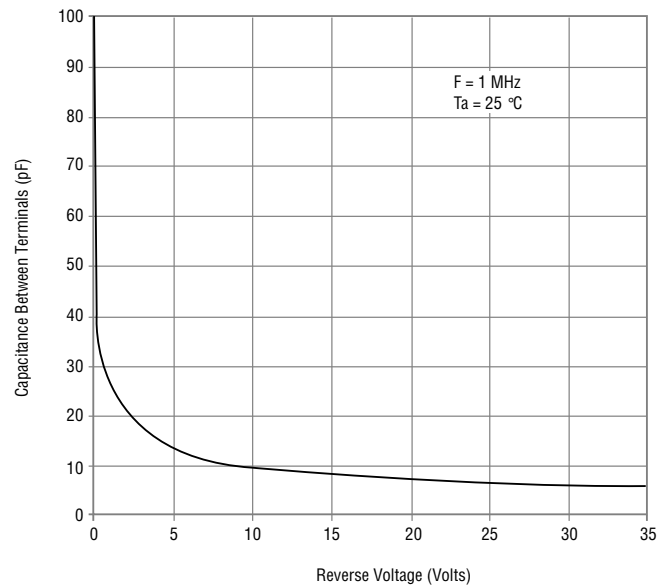
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



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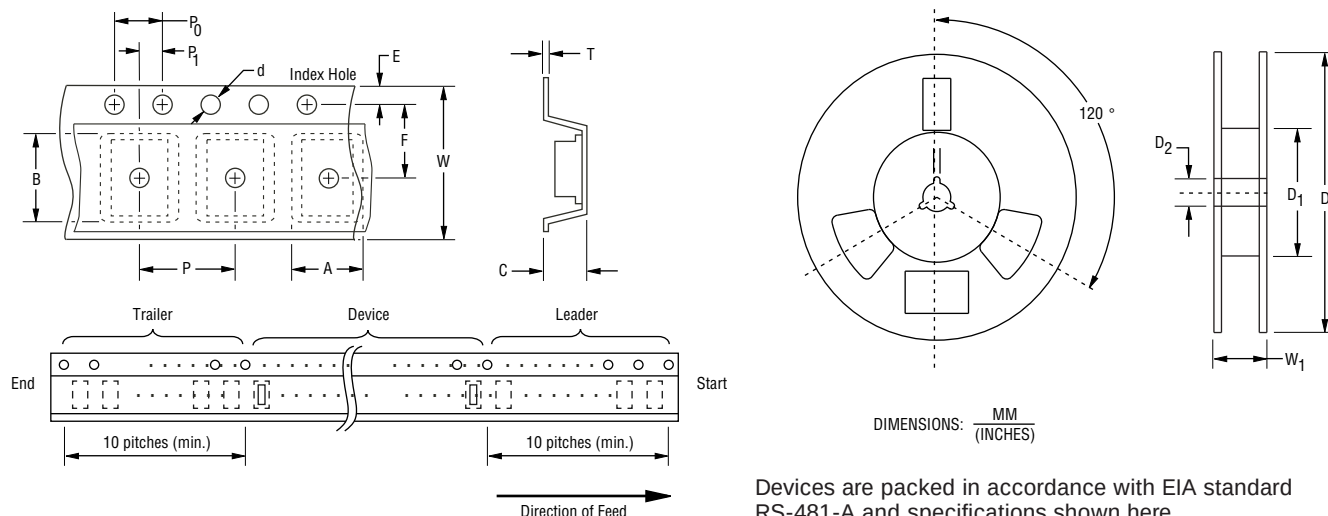
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CD0603/1005 Schottky Barrier Chip Diode Series

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Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).



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

Item	Symbol	0603	1005
Carrier Width	A	$\frac{1.00 \pm 0.10}{(0.039 - 0.004)}$	$\frac{1.55 \pm 0.10}{(0.061 - 0.004)}$
Carrier Length	B	$\frac{1.85 \pm 0.10}{(0.073 - 0.004)}$	$\frac{2.65 \pm 0.10}{(0.104 - 0.004)}$
Carrier Depth	C	$\frac{1.00 \pm 0.10}{(0.039 - 0.004)}$	$\frac{1.05 \pm 0.10}{(0.041 - 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 - 0.002)}$	$\frac{1.55 \pm 0.10}{(0.061 - 0.004)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$	$\frac{178}{(7.008)}$
Reel Inner Diameter	D ₁	$\frac{60.0}{(2.362)} \text{ MIN.}$	$\frac{60.0}{(2.362)} \text{ MIN.}$
Feed Hole Diameter	D ₂	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.05}{(0.008 - 0.002)}$	$\frac{0.25 \pm 0.05}{(0.010 - 0.002)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$
Reel Width	W ₁	$\frac{13.5}{(0.531)} \text{ MAX.}$	$\frac{13.5}{(0.531)} \text{ MAX.}$
Quantity per Reel	--	4,000	4,000

REV. 08/19

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Bourns® products are not recommended, authorized or intended for use in nuclear, lifesaving, life-critical or life-sustaining applications, nor in any other applications where failure or malfunction may result in personal injury, death, or severe property or environmental damage. Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any Bourns® products in such unauthorized applications might not be safe and thus is at the user's sole risk. Life-critical applications include devices identified by the U.S. Food and Drug Administration as Class III devices and generally equivalent classifications outside of the United States.

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The use and level of testing applicable to Bourns® custom products shall be negotiated on a case-by-case basis by Bourns and the user for which such Bourns® custom products are specially designed. Absent a written agreement between Bourns and the user regarding the use and level of such testing, the above provisions applicable to Bourns® standard products shall also apply to such Bourns® custom products.

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Web Page: <http://www.bourns.com/legal/disclaimers-terms-and-policies>

PDF: <http://www.bourns.com/docs/Legal/disclaimer.pdf>

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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