



## Features

- Lead free
- RoHS compliant\*
- Low profile package
- Surface mount
- Very low forward voltage drop

## CD1607-B140 / B140L Schottky Barrier Rectifier Chip Diode

### General Information

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

Bourns offers Schottky Rectifier Diodes for rectification applications, in compact chip package 1607 (Mini-SMA) size format, which offer PCB real estate savings and are considerably smaller than competitive parts. The Schottky Rectifier Diodes offer a forward current of 1 A with a repetitive peak reverse voltage of 40 V.

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 (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

| Parameter                                        | Symbol | CD1607- |       | Unit |
|--------------------------------------------------|--------|---------|-------|------|
|                                                  |        | B140    | B140L |      |
| Forward Voltage (Max.)<br>( $I_f = 1\text{ A}$ ) | $V_F$  | 0.5     | 0.4   | V    |
| Typical Junction Capacitance*                    | $C_T$  | 110     | 110   | pF   |
| Reverse Current (Max.)<br>at Rated $V_R$         | $I_R$  | 0.5     | 1.0   | mA   |

\* Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.

### Absolute Ratings (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

| Parameter                                       | Symbol          | CD1607-     |       | Unit               |
|-------------------------------------------------|-----------------|-------------|-------|--------------------|
|                                                 |                 | B140        | B140L |                    |
| Repetitive Peak Reverse Voltage                 | $V_{RRM}$       | 40          | 40    | V                  |
| Reverse Voltage                                 | $V_R$           | 40          | 40    | V                  |
| Maximum RMS Voltage                             | $V_{RMS}$       | 28          | 28    | V                  |
| Avg. Forward Current                            | $I_O$           | 1           |       | A                  |
| Forward Current, Surge Peak<br>(60 Hz, 1 cycle) | $I_{surge}$     | 30*         |       | A                  |
| Typical Thermal Resistance**                    | $R_{\theta JL}$ | 20          |       | $^\circ\text{C/W}$ |
| Storage Temperature                             | $T_{STG}$       | -55 to +150 |       | $^\circ\text{C}$   |
| Junction Temperature                            | $T_J$           | -55 to +125 |       | $^\circ\text{C}$   |

\*\* Thermal resistance junction to lead.

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

**BOURNS®**

Asia-Pacific: Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116

EMEA: Tel: +36 88 520 390 • Fax: +36 88 520 211

The Americas: Tel: +1-951 781-5500 • Fax: +1-951 781-5700

www.bourns.com

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and

RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

### How To Order

**CD 1607 - B 1 40 L LF**

Common Code \_\_\_\_\_  
Chip Diode \_\_\_\_\_

Package \_\_\_\_\_  
• 1607 = Mini-SMA

Model \_\_\_\_\_  
B = Schottky Barrier Series

Average Forward Current ( $I_O$ ) Code \_\_\_\_\_  
1 = 1 A (Code x 1000 mA = Average Forward Current)

Reverse Voltage ( $V_R$ ) Code \_\_\_\_\_  
40 = 40 V

Forward Voltage Suffix \_\_\_\_\_  
L = Low Forward Voltage  $V_f$

Terminations \_\_\_\_\_  
LF = 100 % Sn (lead free)

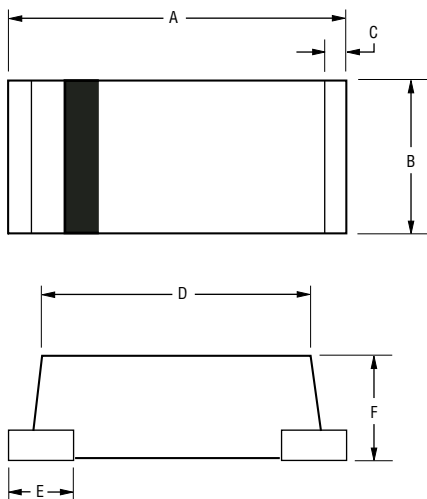
## Applications

- Cellular phones
- PDAs
- Desktop PCs and notebooks
- Digital cameras
- MP3 players

## CD1607-B140 / B140L Schottky Barrier Rectifier Chip Diode

**BOURNS®**

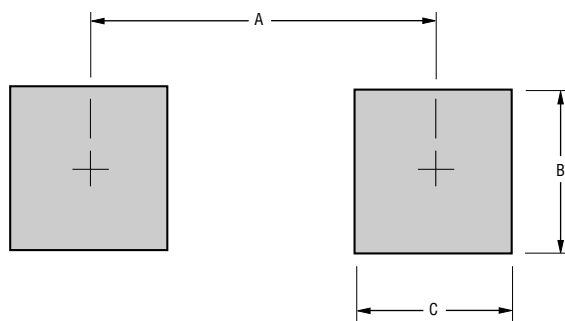
### Product Dimensions



| Dimension | Mini-SMA                              |
|-----------|---------------------------------------|
| A         | $\frac{3.70 - 4.10}{(0.146 - 0.161)}$ |
| B         | $\frac{1.40 - 1.80}{(0.055 - 0.071)}$ |
| C         | $\frac{0.30}{(0.012)}$ TYP.           |
| D         | $\frac{2.40 - 2.80}{(0.094 - 0.110)}$ |
| E         | 2 PLCS. $\frac{0.90}{(0.035)}$ TYP.   |
| F         | $\frac{1.40 - 1.60}{(0.055 - 0.063)}$ |

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

### Recommended Pad Layout



| Dimension | Mini-SMA               |
|-----------|------------------------|
| A (Max.)  | $\frac{3.50}{(0.138)}$ |
| B (Min.)  | $\frac{1.50}{(0.059)}$ |
| C (Min.)  | $\frac{1.50}{(0.059)}$ |

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

### Physical Specifications

Case.....1607 Molded plastic  
Polarity .....Color band denotes cathode end  
Terminals.....Solderable per MIL-STD-750, Method 206  
Weight .....Approximately 0.04 grams

### Typical Part Marking

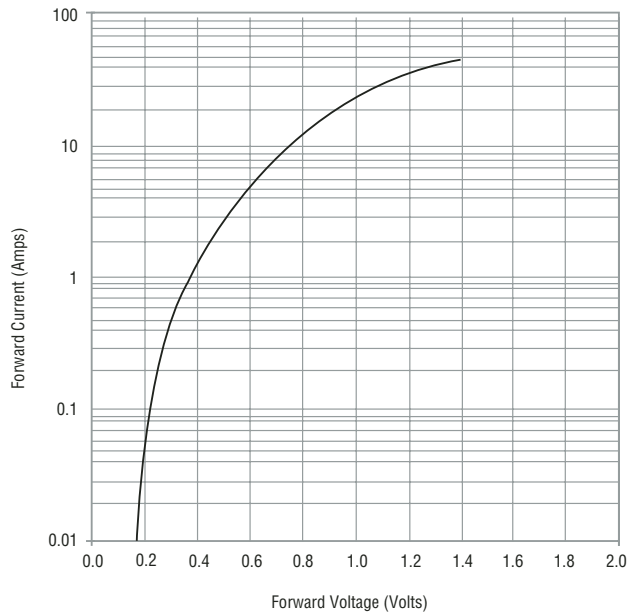
CD1607-B140 .....I4  
CD1607-B140L .....I4

# CD1607-B140 / B140L Schottky Barrier Rectifier Chip Diode

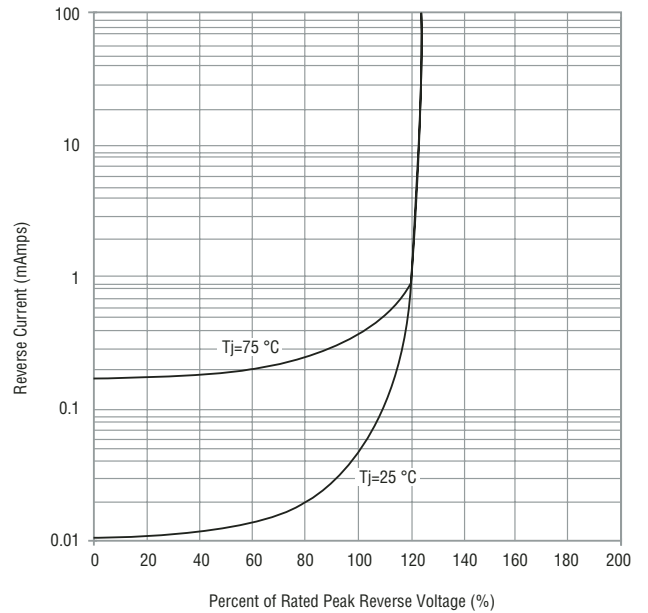
**BOURNS®**

## Rating and Characteristic Curves: CD1607-B140

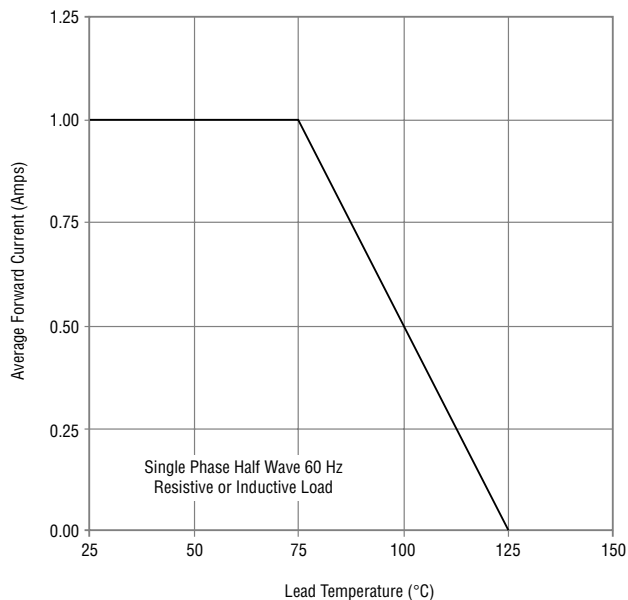
### Forward Characteristics



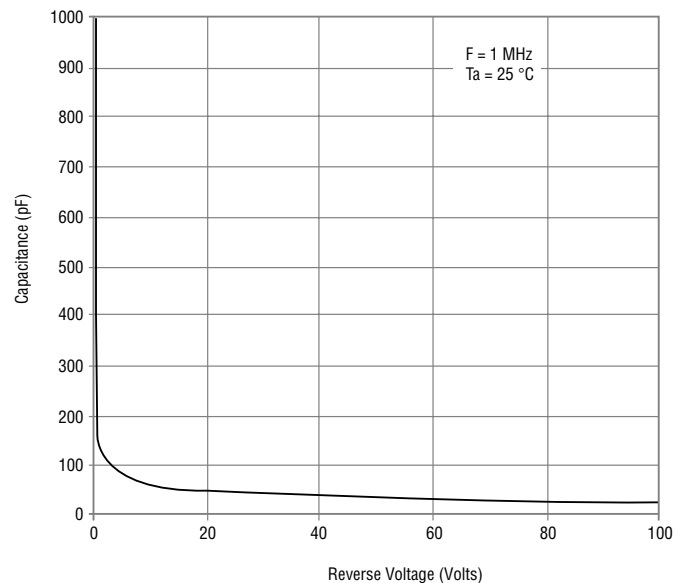
### Reverse Characteristics



### Derating Curve



### Capacitance Between Terminals



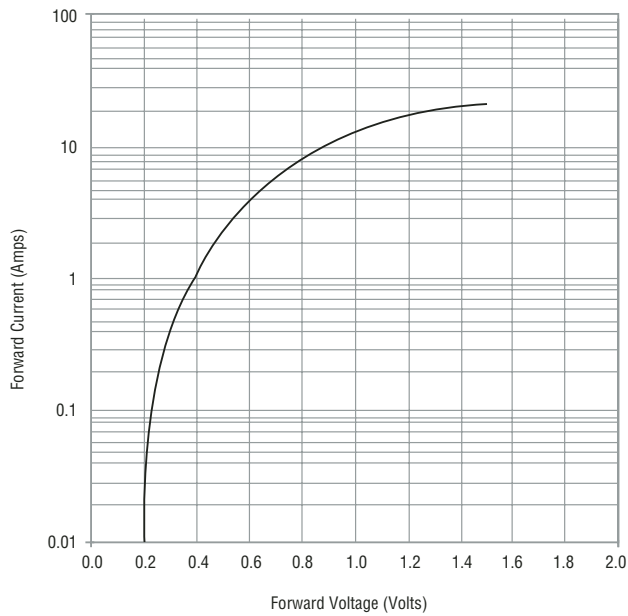
Specifications are subject to change without notice.  
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.  
Users should verify actual device performance in their specific applications.

# CD1607-B140 / B140L Schottky Barrier Rectifier Chip Diode

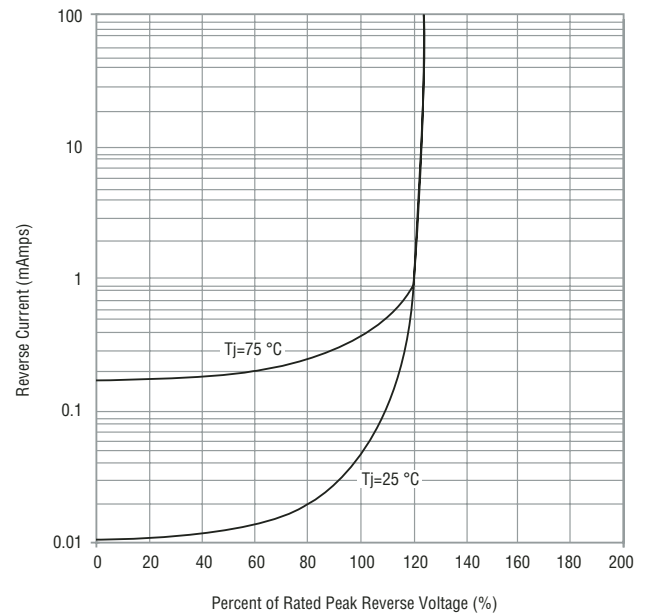
**BOURNS®**

## Rating and Characteristic Curves: CD1607-B140L

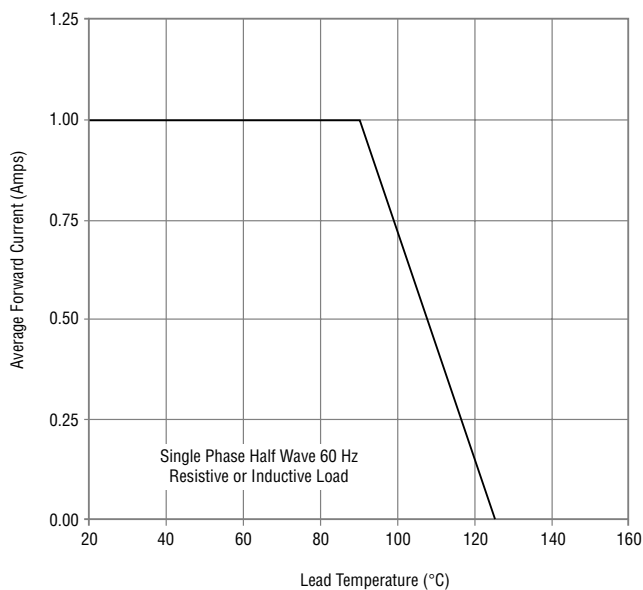
### Forward Characteristics



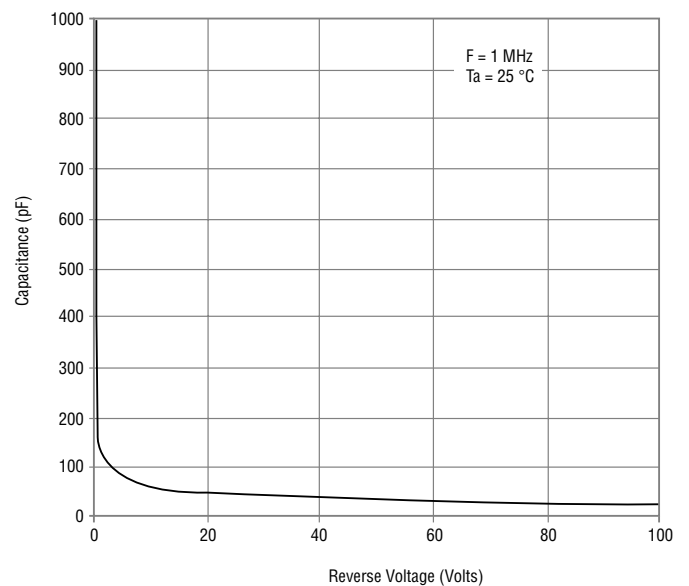
### Reverse Characteristics



### Derating Curve



### Capacitance Between Terminals



Specifications are subject to change without notice.

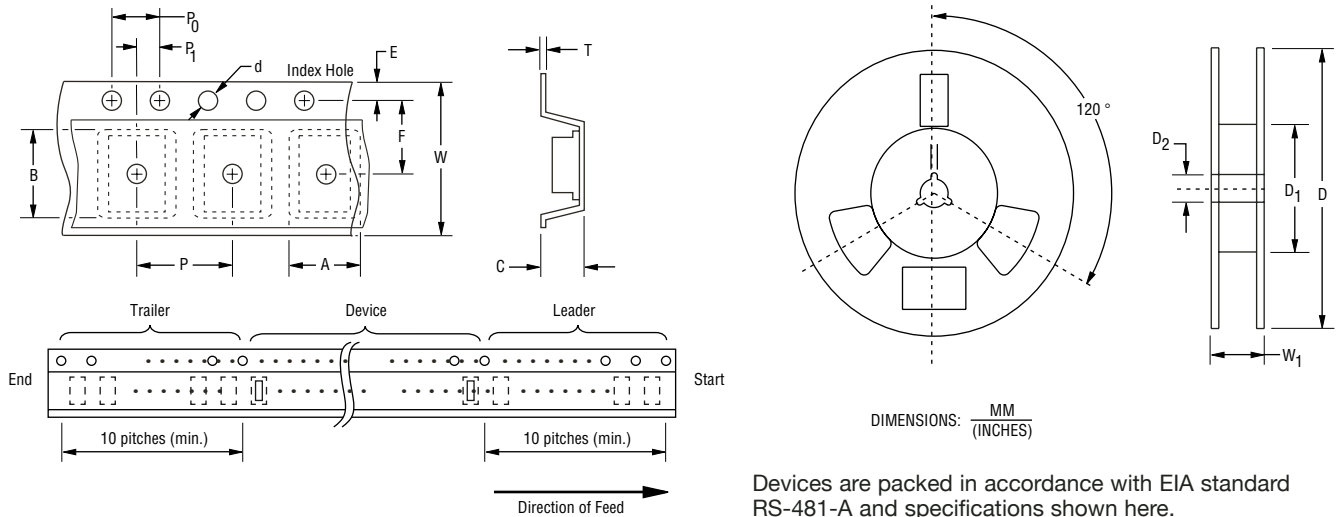
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# CD1607-B140 / B140L Schottky Barrier Rectifier Chip Diode

**BOURNS®**

## Packaging Information

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



| Item                   | Symbol         | 1607                                    |
|------------------------|----------------|-----------------------------------------|
| Carrier Width          | A              | $\frac{1.90 \pm 0.10}{(0.075 - 0.004)}$ |
| Carrier Length         | B              | $\frac{4.30 \pm 0.10}{(0.169 - 0.004)}$ |
| Carrier Depth          | C              | $\frac{1.80 \pm 0.10}{(0.071 - 0.004)}$ |
| Sprocket Hole          | d              | $\frac{1.55 \pm 0.05}{(0.061 - 0.002)}$ |
| Reel Outside Diameter  | D              | $\frac{178}{(7.008)}$                   |
| Reel Inner Diameter    | D <sub>1</sub> | $\frac{80.0}{(3.150)} \text{ MIN.}$     |
| Feed Hole Diameter     | D <sub>2</sub> | $\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$ |
| Sprocket Hole Position | E              | $\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$ |
| Punch Hole Position    | F              | $\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$ |
| Punch Hole Pitch       | P              | $\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$ |
| Sprocket Hole Pitch    | P <sub>0</sub> | $\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$ |
| Embossment Center      | P <sub>1</sub> | $\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$ |
| Overall Tape Thickness | T              | $\frac{0.20 \pm 0.10}{(0.008 - 0.004)}$ |
| Tape Width             | W              | $\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$ |
| Reel Width             | W <sub>1</sub> | $\frac{13.5}{(0.531)} \text{ MAX.}$     |
| Quantity per Reel      | --             | 2,500                                   |

REV. 01/15

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Bourns:

[CD1607-B120](#) [CD1607-B120L](#) [CD1607-B140](#) [CD1607-B140L](#) [CD1607-B120LF](#) [CD1607-B120LLF](#)