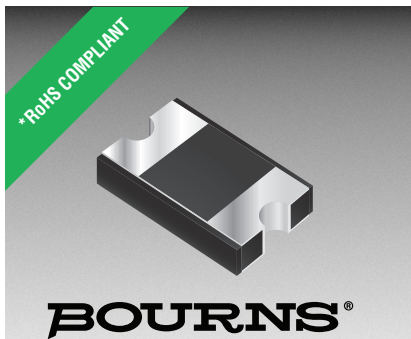




## Features

- RoHS compliant\*
- Low profile
- Low power loss, high efficiency
- UL 94V-0 classification

## Applications

- Switch Mode Power Supplies
- Portable equipment batteries
- High frequency rectification
- DC/DC Converters
- Telecommunications

## CD214B-B3xR Series Schottky Barrier Rectifier Chip Diode

### General Information

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

Bourns offers Schottky Rectifier Diodes for rectification applications, in a compact chip package compatible with DO-214AA (SMB) size format. The Schottky Rectifier Diodes offer a forward current of 3 A with a choice of repetitive peak reverse voltage of 20 V up to 100 V.



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

| Parameter                                                            | Symbol             | CD214B-     |       |             |        | Unit |
|----------------------------------------------------------------------|--------------------|-------------|-------|-------------|--------|------|
|                                                                      |                    | B320R       | B340R | B360R       | B3100R |      |
| Maximum Repetitive Peak Reverse Voltage                              | V <sub>RRM</sub>   | 20          | 40    | 60          | 100    | V    |
| Maximum Average Forward Current                                      | I <sub>F(AV)</sub> | 3           |       |             |        | A    |
| Maximum Peak Forward Surge Current<br>(8.3 ms Single Half Sine-Wave) | I <sub>FSM</sub>   | 80          |       |             |        | A    |
| Operating Junction Temperature Range                                 | T <sub>OPR</sub>   | -55 to +125 |       | -55 to +150 |        | °C   |
| Storage Temperature Range                                            | T <sub>STG</sub>   | -55 to +150 |       |             |        | °C   |

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

| Parameter                                      | Symbol              | Condition or Model                     | Min.          | Typ. | Max. | Unit               |
|------------------------------------------------|---------------------|----------------------------------------|---------------|------|------|--------------------|
| Maximum Instantaneous Forward Voltage (NOTE 1) | $V_F$               | $I_F = 1\text{ A}$                     | CD214B-B320R  | 0.40 |      | V                  |
|                                                |                     |                                        | CD214B-B340R  |      |      |                    |
|                                                |                     |                                        | CD214B-B360R  | 0.48 |      |                    |
|                                                |                     | $I_F = 3\text{ A}$                     | CD214B-B3100R | 0.58 |      |                    |
|                                                |                     |                                        | CD214B-B320R  | 0.48 | 0.50 |                    |
|                                                |                     |                                        | CD214B-B340R  |      |      |                    |
| DC Reverse Current                             | $I_R$               | $V_R = V_{RRM}$                        |               | 0.04 | 0.50 | mA                 |
| Typical Junction Capacitance                   | $C_J$               | $V_R = 4\text{ V}, f = 1.0\text{ MHz}$ |               | 180  |      | pF                 |
| Typical Thermal Resistance (NOTE 2)            | Junction to Ambient | $R_{\theta JA}$                        |               | 55   |      | $^\circ\text{C/W}$ |
|                                                | Junction to Lead    | $R_{\theta JL}$                        |               | 17   |      |                    |

#### NOTES:

- (1) Pulse width 300 microsecond, 1 % duty cycle.
- (2) Mounted on PCB with 5.0 x 5.0 mm (0.2 x 0.2 inch) copper pad areas.

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

Specifications are subject to change without notice.

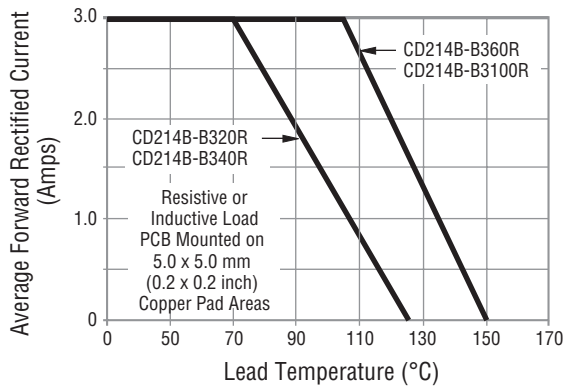
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# CD214B-B3xR Series Schottky Barrier Rectifier Chip Diode

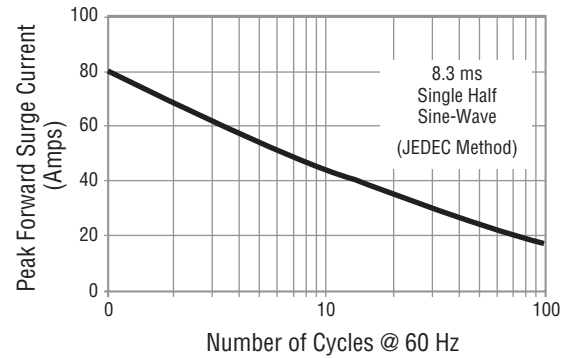
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## Performance Graphs

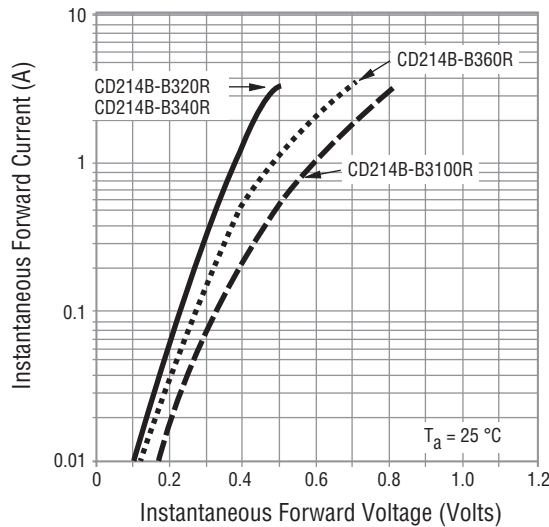
### Forward Current Derating Curve



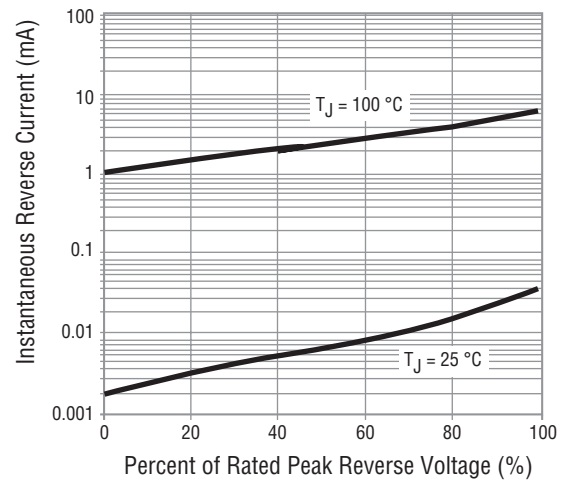
### Max. Peak Forward Surge Current



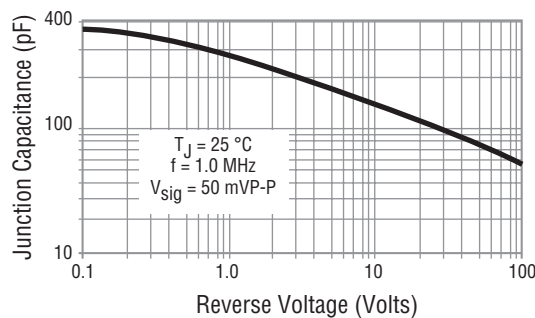
### Typical Instantaneous Forward Characteristics



### Typical Reverse Characteristics



### Typical Junction Capacitance



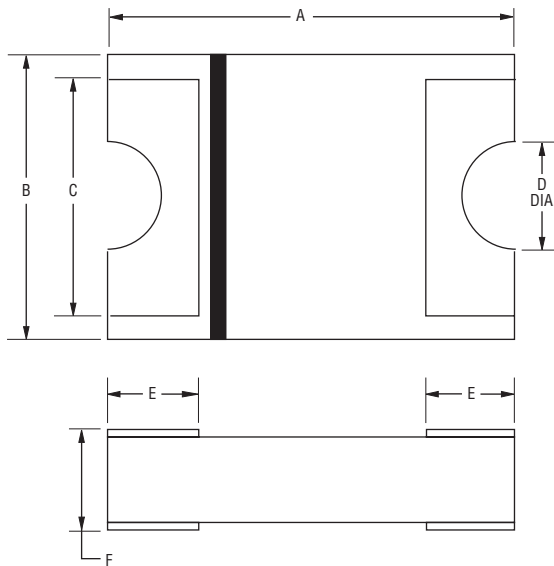
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# CD214B-B3xR Series Schottky Barrier Rectifier Chip Diode

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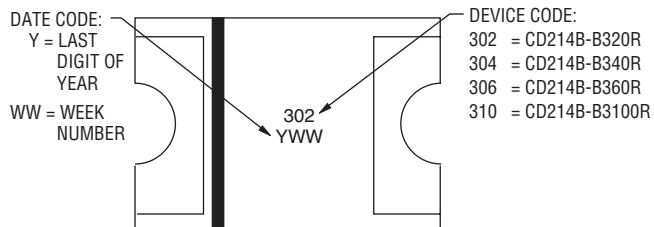
## Product Dimensions



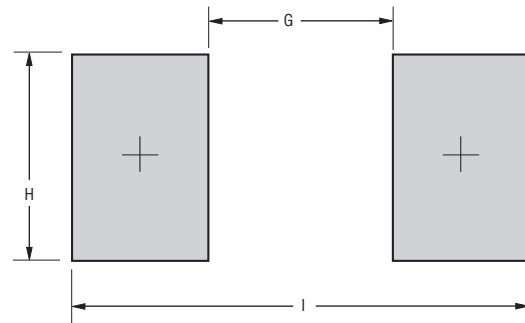
| Dimension | CD214B-B3 Series                            |
|-----------|---------------------------------------------|
| A         | $\frac{5.20 \pm 0.10}{(0.205 \pm 0.004)}$   |
| B         | $\frac{3.60 \pm 0.10}{(0.142 \pm 0.004)}$   |
| C         | $\frac{3.01}{(0.119)}$ TYP.                 |
| D (Dia.)  | $\frac{0.695 \pm 0.015}{(0.027 \pm 0.001)}$ |
| E         | $\frac{1.15 \pm 0.1}{(0.045 \pm 0.004)}$    |
| F         | $\frac{1.10 \pm 0.15}{(0.043 \pm 0.006)}$   |

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

## Typical Part Marking



## Recommended Pad Layout



| Dimension | CD214B-B3 Series            |
|-----------|-----------------------------|
| G         | $\frac{2.65}{(0.104)}$ MAX. |
| H         | $\frac{3.00}{(0.118)}$ MIN. |
| I         | $\frac{6.65}{(0.262)}$ REF. |

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

## Environmental Specifications

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

## How to Order

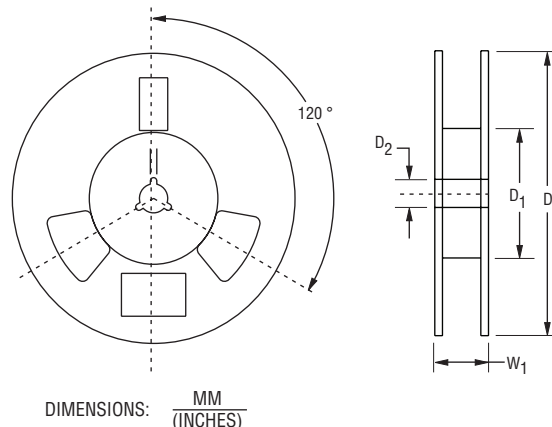
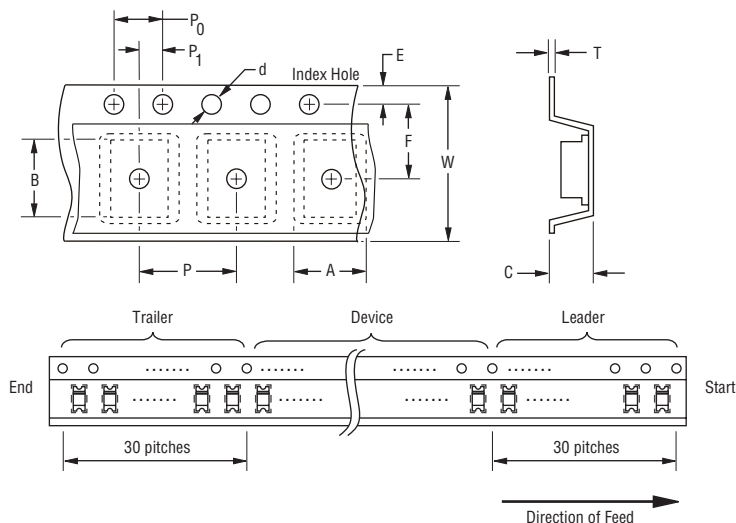
Common Code CD 214B - B 3 20 R  
CD = Chip Diode  
Package 214B = SMB/DO-214AA Compatible  
Model B = Schottky Barrier Series  
Maximum Average Forward Rectified Current 3 = 3 A  
Maximum Repetitive Peak Reverse Voltage 20 = 20 V  
40 = 40 V  
60 = 60 V  
100 = 100 V

# CD214B-B3xR Series Schottky Barrier Rectifier Chip Diode

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## Packaging Information

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



| Item                   | Symbol         | CD214B-B3 Series                           |
|------------------------|----------------|--------------------------------------------|
| Carrier Width          | A              | $\frac{3.70 \pm 0.10}{(0.146 \pm 0.004)}$  |
| Carrier Length         | B              | $\frac{5.40 \pm 0.10}{(0.213 \pm 0.004)}$  |
| Carrier Depth          | C              | $\frac{1.65 \pm 0.10}{(0.065 \pm 0.004)}$  |
| Sprocket Hole          | d              | $\frac{1.50 \pm 0.10}{(0.059 \pm 0.004)}$  |
| Reel Outside Diameter  | D              | $\frac{330 \pm 2.0}{(12.992 \pm 0.079)}$   |
| Reel Inner Diameter    | D <sub>1</sub> | $\frac{50.0}{(1.969)} \text{ MIN.}$        |
| Feed Hole Diameter     | D <sub>2</sub> | $\frac{13.0 \pm 0.50}{(0.512 \pm 0.020)}$  |
| Sprocket Hole Position | E              | $\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$  |
| Punch Hole Position    | F              | $\frac{5.50 \pm 0.05}{(0.217 \pm 0.002)}$  |
| Punch Hole Pitch       | P              | $\frac{8.00 \pm 0.10}{(0.157 \pm 0.004)}$  |
| Sprocket Hole Pitch    | P <sub>0</sub> | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$  |
| Embossment Center      | P <sub>1</sub> | $\frac{2.00 \pm 0.10}{(0.079 \pm 0.004)}$  |
| Overall Tape Thickness | T              | $\frac{0.40}{(0.016)} \text{ MAX.}$        |
| Tape Width             | W              | $\frac{12.00 \pm 0.30}{(0.472 \pm 0.012)}$ |
| Reel Width             | W <sub>1</sub> | $\frac{18.7}{(0.736)} \text{ MAX.}$        |
| Quantity per Reel      | --             | 5,000                                      |

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