



Features

- Lead free versions available
 - RoHS compliant (lead free version)*
 - Reverse voltage from 20 to 60 V
 - Forward current of 1 A
 - High current capability
- For use in low voltage high frequency inverters, free wheeling and polarity protection applications

CD214B-B120 ~ B160 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 DO-214AA (SMB) size format, which offer PCB real estate savings and are considerably smaller than most competitive parts. The Schottky Rectifier Diodes offer a forward current of 1 A with a choice of repetitive peak reverse voltage of 20 V up to 60 V.

Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and the flat configuration minimizes roll away.

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

| Parameter | Symbol | CD214B- | | | | | Unit |
|---|----------------|---------|------|------|------|------|------|
| | | B120 | B130 | B140 | B150 | B160 | |
| Forward Voltage (Max.) (I _f = 2 A) | V _F | 0.5 | 0.5 | 0.5 | 0.7 | 0.7 | V |
| Typical Junction Capacitance* | C _T | 110 | | | | | pF |
| Reverse Current (Max.) at Rated V _R) | I _R | 0.5 | | | | | mA |

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

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

| Parameter | Symbol | CD214B- | | | | | Unit |
|--|--------------------|-------------|------|------|------|------|------|
| | | B120 | B130 | B140 | B150 | B160 | |
| Repetitive Peak Reverse Voltage | V _{RRM} | 20 | 30 | 40 | 50 | 60 | V |
| Reverse Voltage | V _R | 20 | 30 | 40 | 50 | 60 | V |
| Maximum RMS Voltage | V _{RMS} | 14 | 21 | 28 | 35 | 42 | V |
| Avg. Forward Current | I _O | 1 | | | | | A |
| Forward Current, Surge Peak (60 Hz, 1 cycle) | I _{surge} | 30 | | | | | A |
| Typical Thermal Resistance** | R _{θJL} | 20 | | | | | °C/W |
| Storage Temperature | T _{STG} | -55 to +150 | | | | | °C |
| Junction Temperature | T _J | -55 to +125 | | | | | °C |

** Thermal resistance junction to lead.



Reliable Electronic Solutions

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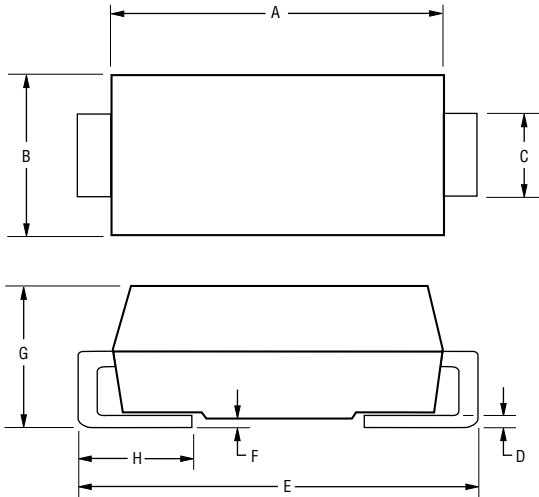
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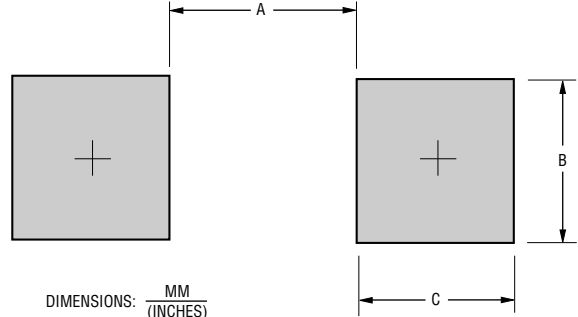
Product Dimensions



| Dimension | SMB (DO-214AA) |
|-----------|---------------------------------------|
| A | $\frac{4.06 - 4.57}{(0.160 - 0.180)}$ |
| B | $\frac{3.30 - 3.94}{(0.130 - 0.155)}$ |
| C | $\frac{1.96 - 2.21}{(0.078 - 0.087)}$ |
| D | $\frac{0.15 - 0.31}{(0.006 - 0.112)}$ |
| E | $\frac{5.21 - 5.59}{(0.205 - 0.220)}$ |
| F | $\frac{0.05 - 0.20}{(0.002 - 0.008)}$ |
| G | $\frac{2.01 - 2.62}{(0.080 - 0.103)}$ |
| H | $\frac{0.76 - 1.52}{(0.030 - 0.060)}$ |

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

Recommended Pad Layout



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

| Dimension | SMB (DO-214AA) |
|-----------|------------------------|
| A (Max.) | $\frac{2.69}{(0.106)}$ |
| B (Min.) | $\frac{2.10}{(0.083)}$ |
| C (Min.) | $\frac{1.27}{(0.050)}$ |

Physical Specifications

Case Molded plastic
 Polarity Indicated by cathode band
 Weight 0.003 ounces / 0.093 grams

Typical Part Marking

CD214B-B220 **B** 120B
 CD214B-B230 **B** 130B
 CD214B-B240 **B** 140B
 CD214B-B250 **B** 150B
 CD214B-B260 **B** 160B

How To Order

CD 214B - B 1 30

Common Code _____
 Chip Diode _____
 Package _____
 • 214B = SMB/DO-214AA
 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 _____
 20 = 20 V
 30 = 30 V
 40 = 40 V
 50 = 50 V
 60 = 60 V
 Terminations _____
 LF = 100 % Sn (lead free)
 Blank = Sn/Pb

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex
 Specifications are subject to change without notice.

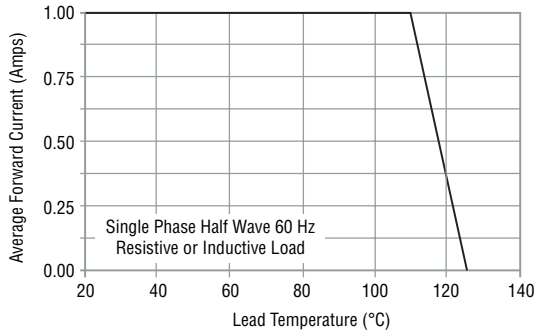
Customers should verify actual device performance in their specific applications.

CD214B-B120 ~ B160 Schottky Barrier Rectifier Chip Diode

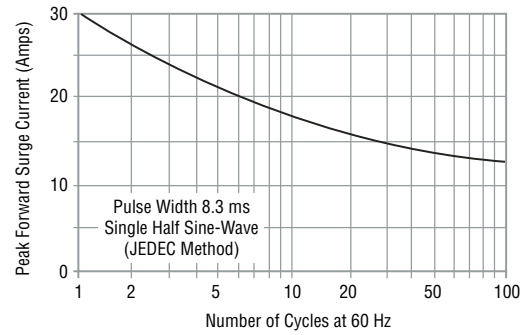


Rating and Characteristic Curves

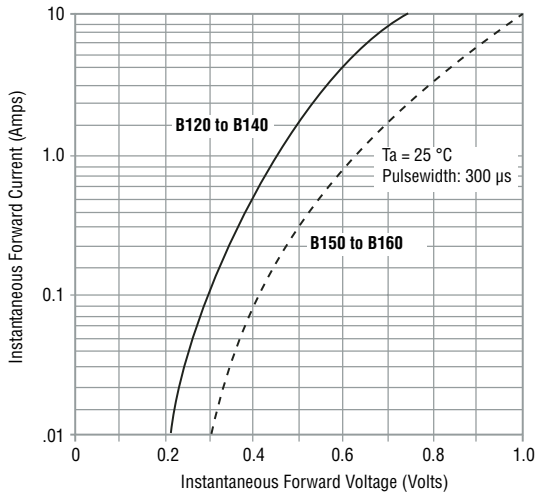
Forward Current Derating Curve



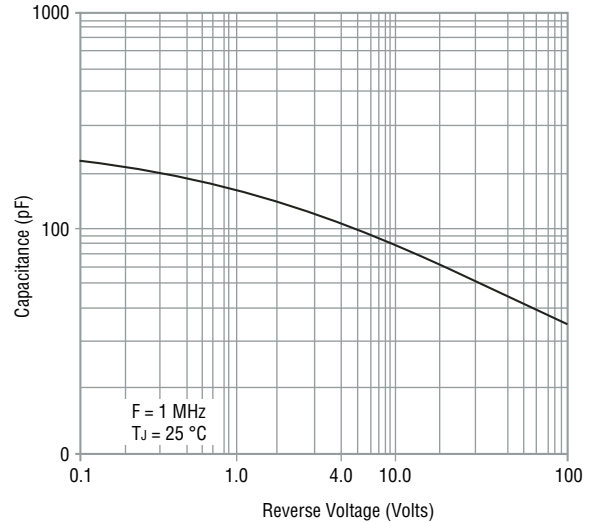
Maximum Non-Repetitive Surge Current



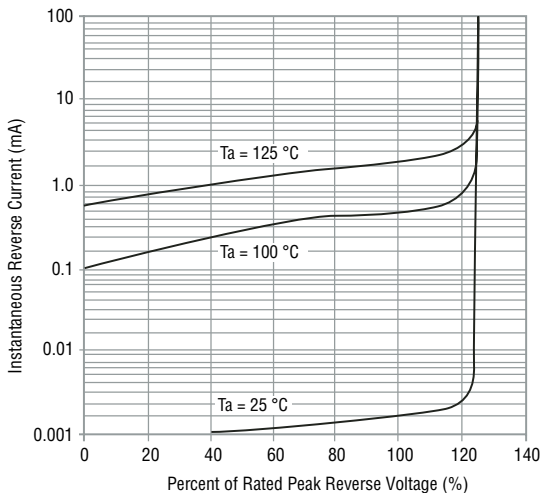
Typical Forward Characteristics



Typical Junction Capacitance



Typical Reverse Characteristics



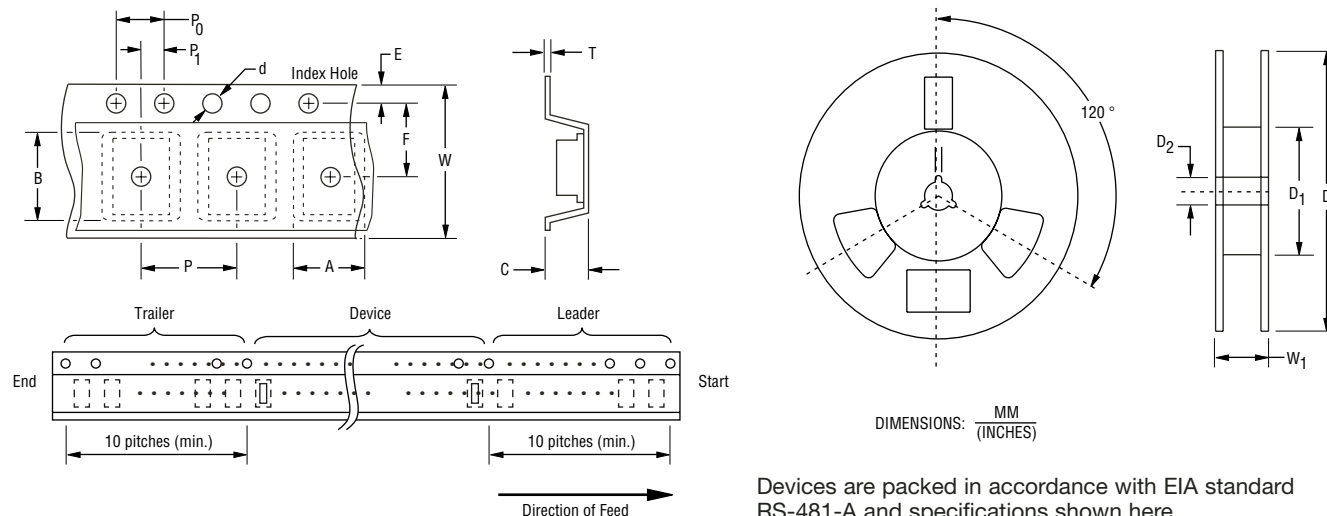
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Packaging Information

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 | SMB (DO-214AA) |
|------------------------|----------------|--|
| Carrier Width | A | $\frac{4.94 \pm 0.10}{(0.194 - 0.004)}$ |
| Carrier Length | B | $\frac{5.57 \pm 0.10}{(0.219 - 0.004)}$ |
| Carrier Depth | C | $\frac{2.36 \pm 0.10}{(0.093 - 0.004)}$ |
| Sprocket Hole | d | $\frac{1.55 \pm 0.05}{(0.061 - 0.002)}$ |
| Reel Outside Diameter | D | $\frac{330}{(12.992)}$ |
| Reel Inner Diameter | D ₁ | $\frac{50.0}{(1.969)}$ MIN. |
| Feed Hole Diameter | D ₂ | $\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$ |
| Sprocket Hole Position | E | $\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$ |
| Punch Hole Position | F | $\frac{5.50 \pm 0.05}{(0.217 - 0.002)}$ |
| Punch Hole Pitch | P | $\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$ |
| Sprocket Hole Pitch | P ₀ | $\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$ |
| Embossment Center | P ₁ | $\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$ |
| Overall Tape Thickness | T | $\frac{0.30 \pm 0.10}{(0.012 - 0.004)}$ |
| Tape Width | W | $\frac{12.00 \pm 0.20}{(0.472 - 0.008)}$ |
| Reel Width | W ₁ | $\frac{18.4}{(0.724)}$ MAX. |
| Quantity per Reel | -- | 3,000 |

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Customers should verify actual device performance in their specific applications.