



## Features

- Lead free versions available
- RoHS compliant (lead free version)\*
- SMA package
- Surface mount
- Very low forward voltage drop

## CD214A-B120 ~ B1100 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-214AC (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 choice of repetitive peak reverse voltage of 20 V up to 100 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<sub>A</sub> = 25 °C Unless Otherwise Noted)

| Parameter   | Symbol         | CD214- |      |       |      |      |      |      |      |      |       | Unit |
|---|----------------|--------|------|-------|------|------|------|------|------|------|-------|------|
|   |                | B120   | B130 | B130L | B140 | B150 | B160 | B170 | B180 | B190 | B1100 |      |
| Forward Voltage (Max.)<br>(I <sub>f</sub> = 1 A)    | V <sub>F</sub> | 0.5    | 0.5  | 0.41  | 0.5  | 0.7  | 0.7  | 0.79 | 0.79 | 0.79 | 0.79  | V    |
| Typical Junction Capacitance*                       | C <sub>T</sub> | 110    | 110  | 100   | 110  | 110  | 110  | 30   | 30   | 30   | 30    | pF   |
| Reverse Current (Max.)<br>at Rated V <sub>R</sub> ) | I <sub>R</sub> | 500    | 500  | 1000  | 500  | 500  | 500  | 500  | 500  | 500  | 500   | μA   |

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

### Absolute Ratings (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

| Parameter                                       | Symbol             | CD214-      |      |       |      |      |      |      |      |      |       | Unit |
|---|--------------------|-------------|------|-------|------|------|------|------|------|------|-------|------|
|   |                    | B120        | B130 | B130L | B140 | B150 | B160 | B170 | B180 | B190 | B1100 |      |
| Repetitive Peak Reverse Voltage                 | V <sub>RRM</sub>   | 20          | 30   | 30    | 40   | 50   | 60   | 70   | 80   | 90   | 100   | V    |
| Reverse Voltage                                 | V <sub>R</sub>     | 20          | 30   | 30    | 40   | 50   | 60   | 70   | 80   | 90   | 100   | V    |
| Maximum RMS Voltage                             | V <sub>RMS</sub>   | 14          | 21   | 21    | 28   | 35   | 42   | 49   | 56   | 63   | 70    | V    |
| Avg. Forward Current                            | I <sub>O</sub>     | 1           |      |       |      |      |      |      |      |      |       | A    |
| Forward Current, Surge Peak<br>(60 Hz, 1 cycle) | I <sub>surge</sub> | 30          | 30   | 25    | 30   | 30   | 30   | 30   | 30   | 30   | 30    | A    |
| Typical Thermal Resistance**                    | R <sub>θJL</sub>   | 20          | 20   | 35    | 20   | 20   | 20   | 25   | 25   | 25   | 25    | °C/W |
| Storage Temperature                             | T <sub>STG</sub>   | -55 to +150 |      |       |      |      |      |      |      |      |       | °C   |
| Junction Temperature                            | T <sub>J</sub>     | -55 to +125 |      |       |      |      |      |      |      |      |       | °C   |

\*\* Thermal resistance junction to lead.



Reliable Electronic Solutions

#### Asia-Pacific:

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

#### Europe:

Tel: +41-41 768 5555 • Fax: +41-41 768 5510

#### The Americas:

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

[www.bourns.com](http://www.bourns.com)

### How To Order

|  |  |
|--|--|
| Common Code                                    | CD 214A - B 1 30 L                                   |
| Chip Diode                                     |  |
| Package  | • 214A = SMA/DO-214AC                                |
| Model  | B = Schottky Barrier Series                          |
| Average Forward Current (I <sub>O</sub> ) Code | 1 = 1 A (Code x 1000 mA = Average Forward Current)   |
| Reverse Voltage (V <sub>R</sub> ) Code         | 30 = 30 V<br>40 = 40 V<br>100 = 100 V                |
| Forward Voltage Suffix                         | L = Low Forward Voltage V <sub>f</sub> (CD214-B130L) |
| Terminations                                   | LF = 100 % Sn (lead free)<br>Blank = Sn/Pb           |

\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex

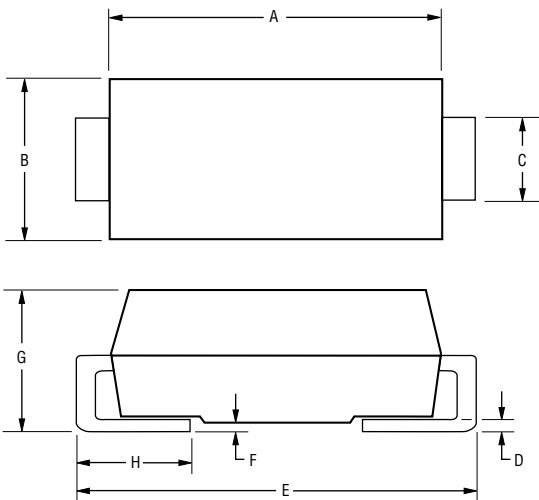
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode



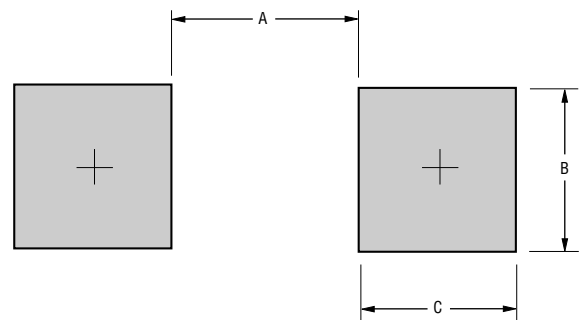
## Product Dimensions



| Dimension | SMA (DO-214AC)                        |
|-----------|---------------------------------------|
| A         | $\frac{4.06 - 4.57}{(0.160 - 0.180)}$ |
| B         | $\frac{2.29 - 2.92}{(0.090 - 0.115)}$ |
| C         | $\frac{1.27 - 1.63}{(0.050 - 0.064)}$ |
| D         | $\frac{0.15 - 0.31}{(0.006 - 0.110)}$ |
| E         | $\frac{4.83 - 5.59}{(0.190 - 0.220)}$ |
| 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



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

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

## Physical Specifications

Case .....Molded plastic  
 Polarity .....Indicated by cathode band  
 Weight .....0.002 ounces / 0.064 grams

## Typical Part Marking

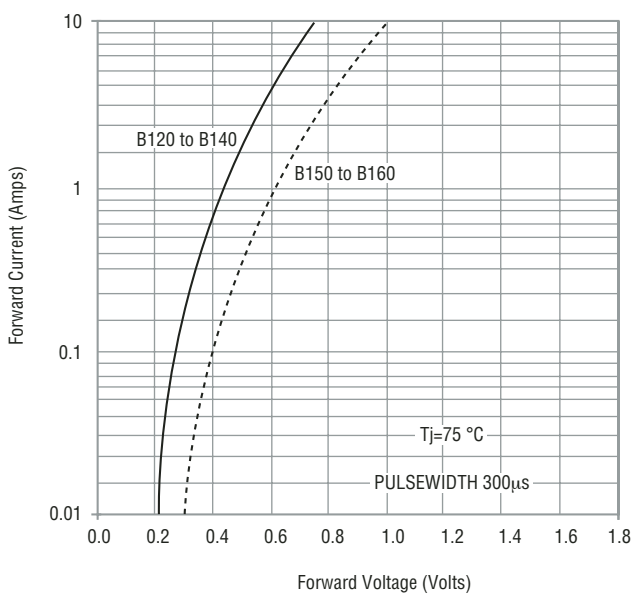
CD214A-B120 ..... **B** 120  
 CD214A-B130 ..... **B** 130  
 CD214A-B130L ..... **B** 130L  
 CD214A-B140 ..... **B** 140  
 CD214A-B150 ..... **B** 150  
 CD214A-B160 ..... **B** 160  
 CD214A-B170 ..... **B** 170  
 CD214A-B180 ..... **B** 180  
 CD214A-B190 ..... **B** 190  
 CD214A-B1100 ..... **B** 1100

# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode

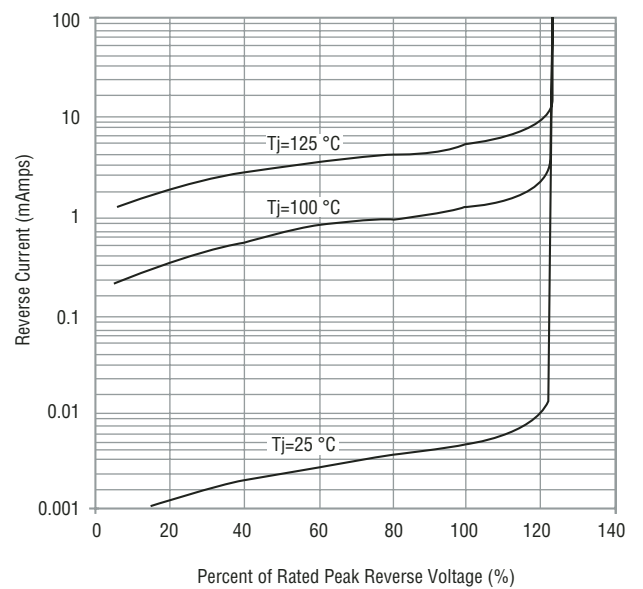


Rating and Characteristic Curves: CD214A-B120, CD214A-B130, CD214A-B140, CD214A-B150 & CD214A-B160

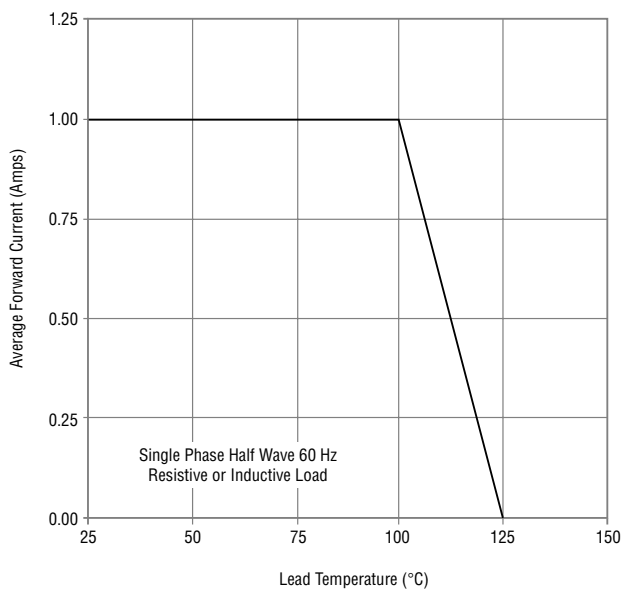
## Forward Characteristics



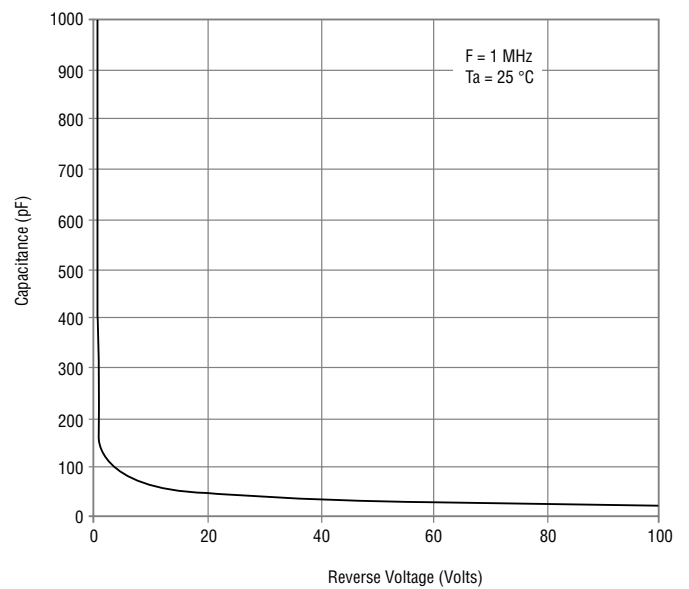
## Reverse Characteristics



## Derating Curve



## Capacitance Between Terminals



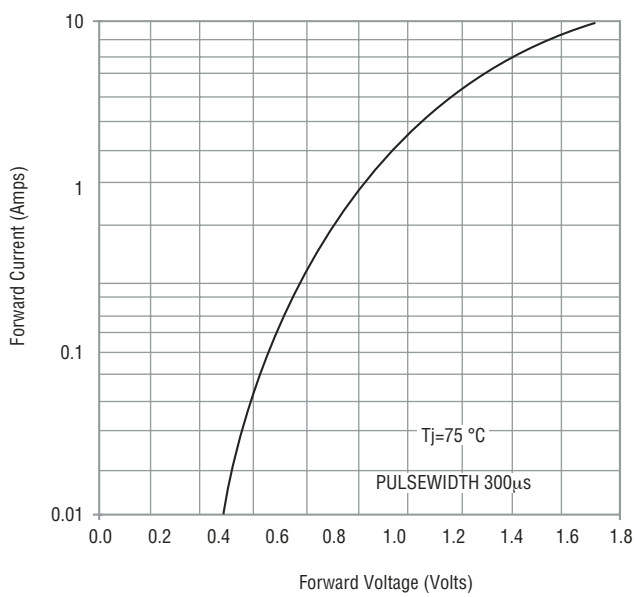
Specifications are subject to change without notice.  
Customers should verify actual device performance in their specific applications.

# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode

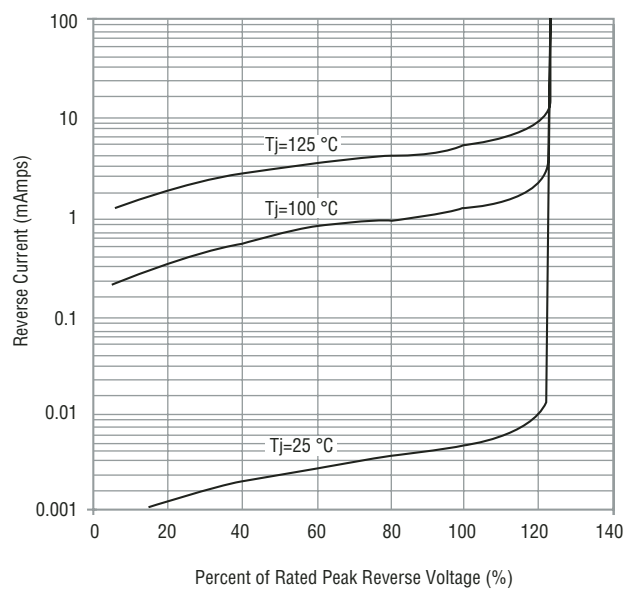


## Rating and Characteristic Curves: CD214A-B130L

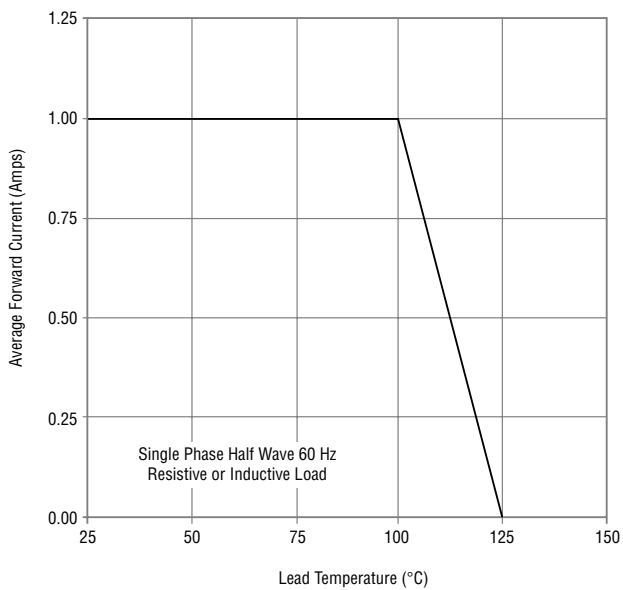
### Forward Characteristics



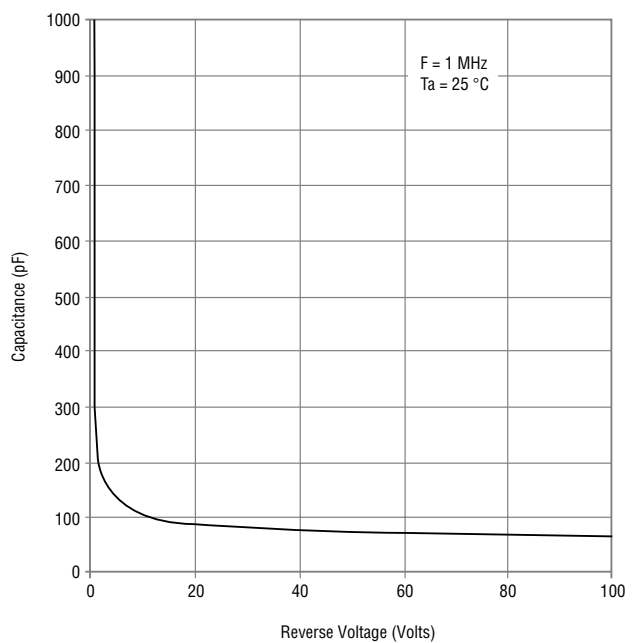
### Reverse Characteristics



### Derating Curve



### Capacitance Between Terminals

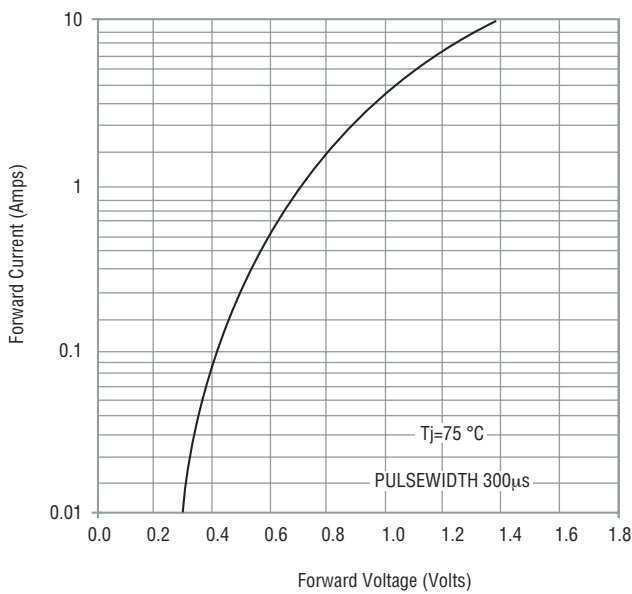


# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode

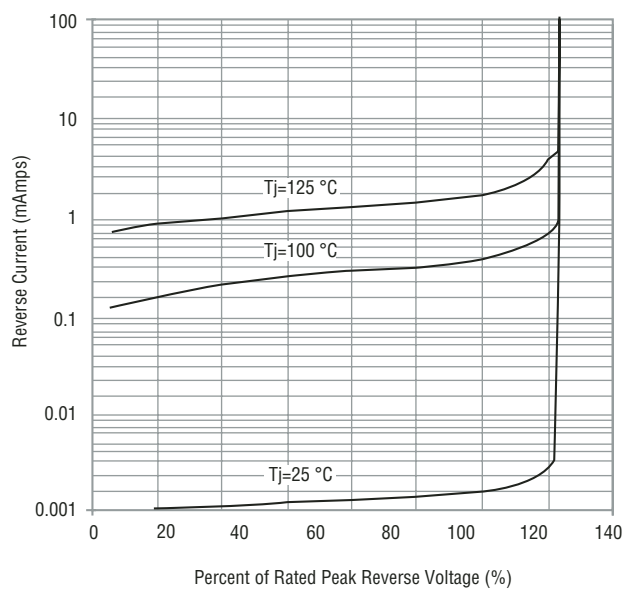


Rating and Characteristic Curves: CD214A-B170, CD214A-B180, CD214A-B190 & CD214A-B1100

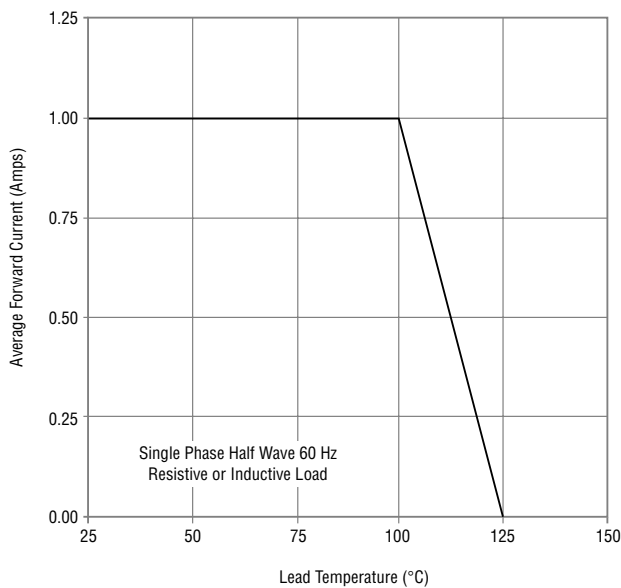
## Forward Characteristics



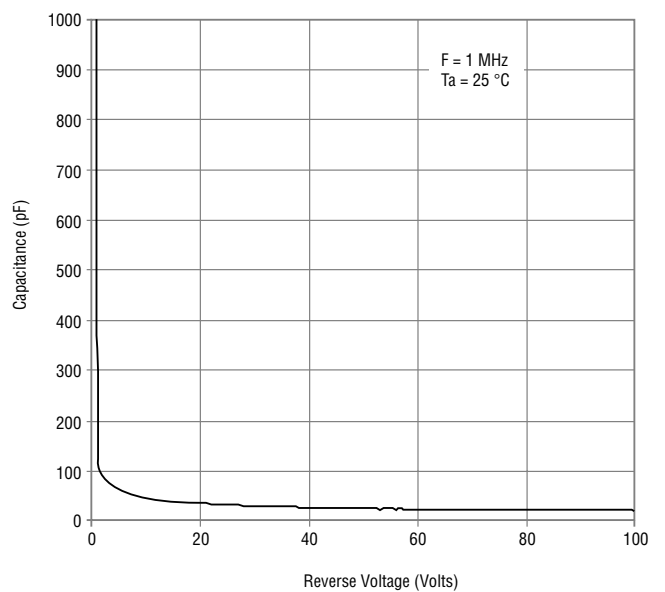
## Reverse Characteristics



## Derating Curve



## Capacitance Between Terminals



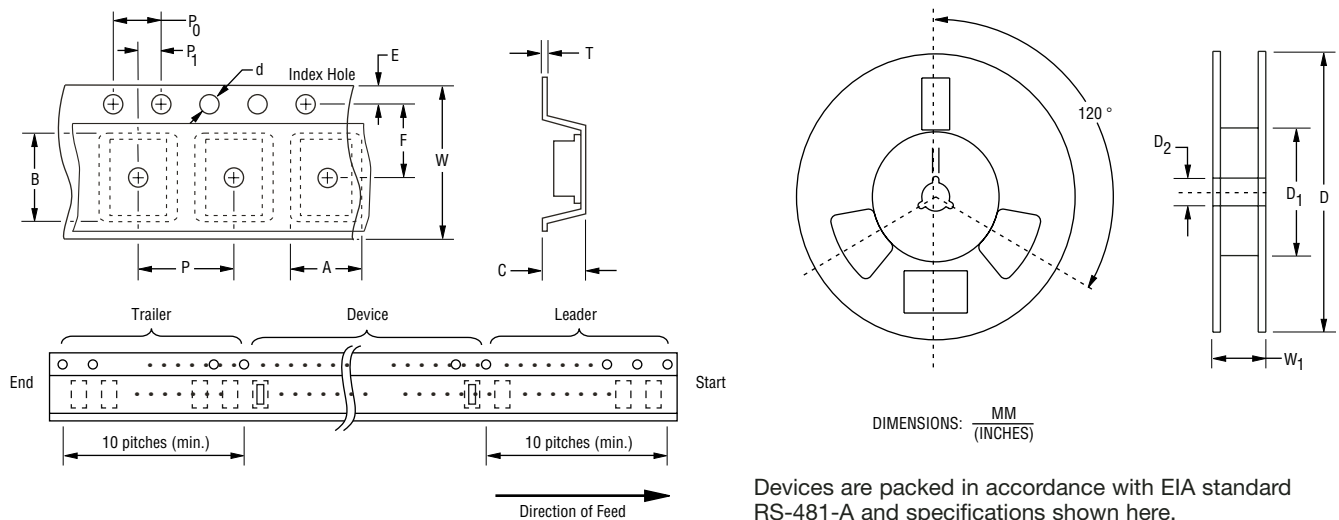
Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode



## 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         | SMA (DO-214AC)                           |
|------------------------|----------------|--|
| Carrier Width          | A              | $\frac{2.90 \pm 0.10}{(0.114 - 0.004)}$  |
| Carrier Length         | B              | $\frac{5.59 \pm 0.10}{(0.220 - 0.004)}$  |
| 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 <sub>1</sub> | $\frac{50.0}{(1.969)}$ 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              | $\frac{5.50 \pm 0.05}{(0.217 - 0.002)}$  |
| Punch Hole Pitch       | P              | $\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$  |
| Sprocket Hole Pitch    | P <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              | $\frac{0.30 \pm 0.10}{(0.012 - 0.004)}$  |
| Tape Width             | W              | $\frac{12.00 \pm 0.20}{(0.472 - 0.008)}$ |
| Reel Width             | W <sub>1</sub> | $\frac{18.4}{(0.724)}$ MAX.              |
| Quantity per Reel      | --             | 5,000                                    |

REV. 02/05

Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.