

## Features

- RoHS compliant\*
- 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, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.

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

| Parameter   | Symbol         | CD214A- |       |      |       |      |      |      |      |      |      |       | Unit |
|---|----------------|---------|-------|------|-------|------|------|------|------|------|------|-------|------|
|   |                | B120    | B120L | 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     | 0.41  | 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     | 100   | 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     | 1000  | 500  | 1000  | 500  | 500  | 500  | 500  | 500  | 500  | 500   | μA   |

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

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

| Parameter                                       | Symbol             | CD214A-     |       |      |       |      |      |      |      |      |      |       | Unit |
|---|--------------------|-------------|-------|------|-------|------|------|------|------|------|------|-------|------|
|   |                    | B120        | B120L | B130 | B130L | B140 | B150 | B160 | B170 | B180 | B190 | B1100 |      |
| Repetitive Peak Reverse Voltage                 | V <sub>RRM</sub>   | 20          | 20    | 30   | 30    | 40   | 50   | 60   | 70   | 80   | 90   | 100   | V    |
| Reverse Voltage                                 | V <sub>R</sub>     | 20          | 20    | 30   | 30    | 40   | 50   | 60   | 70   | 80   | 90   | 100   | V    |
| Maximum RMS Voltage                             | V <sub>RMS</sub>   | 14          | 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          | 25    | 30   | 25    | 30   | 30   | 30   | 30   | 30   | 30   | 30    | A    |
| Typical Thermal Resistance***                   | R <sub>θJL</sub>   | 20          | 35    | 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.

# BOURNS®

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\*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.

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Users should verify actual device performance in their specific applications.

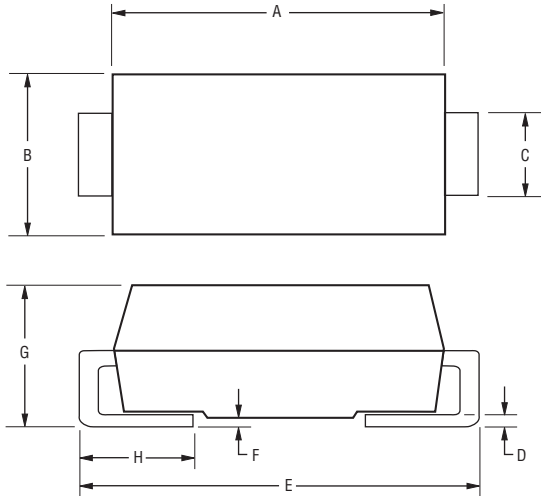
### How to Order

|  |  |
|--|--|
| Common Code  | CD 214A - B 1 30 L LF  |
| 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 (Applies to -B120L & -B130L only) | L = Low Forward Voltage V <sub>f</sub> (-B120L & -B130L only)<br>No Space in P/N = Not Low Forward Voltage |
| Terminations   | LF = 100 % Sn (RoHS Compliant*)  |

# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode



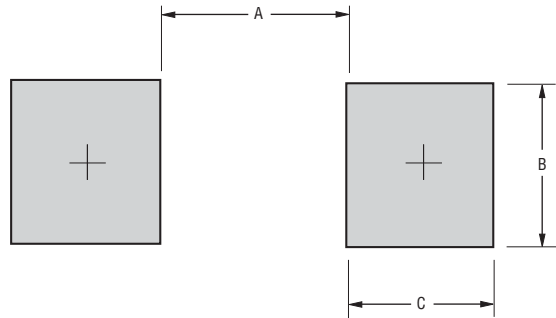
## Product Dimensions



| 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         | $\frac{2.90}{(0.114)}$ |
| B         | $\frac{2.40}{(0.094)}$ |
| C         | $\frac{2.30}{(0.091)}$ |

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

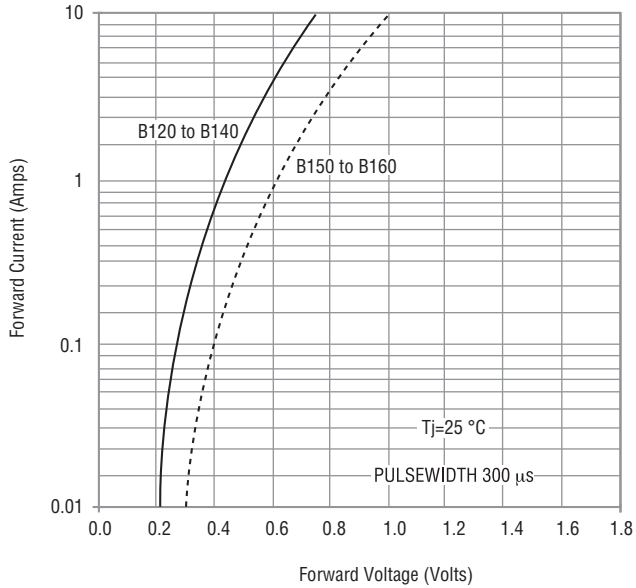
|                    |               |
|--------------------|---------------|
| CD214A-B120 .....  | <b>B</b> 120  |
| CD214A-B120L ..... | <b>B</b> 120L |
| CD214A-B130 .....  | <b>B</b> 130  |
| CD214A-B130L ..... | <b>B</b> 130L |
| CD214A-B140 .....  | <b>B</b> 140  |
| CD214A-B150 .....  | <b>B</b> 150  |
| CD214A-B160 .....  | <b>B</b> 160  |
| CD214A-B170 .....  | <b>B</b> 170  |
| CD214A-B180 .....  | <b>B</b> 180  |
| CD214A-B190 .....  | <b>B</b> 190  |
| CD214A-B1100.....  | <b>B</b> 1100 |

# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode

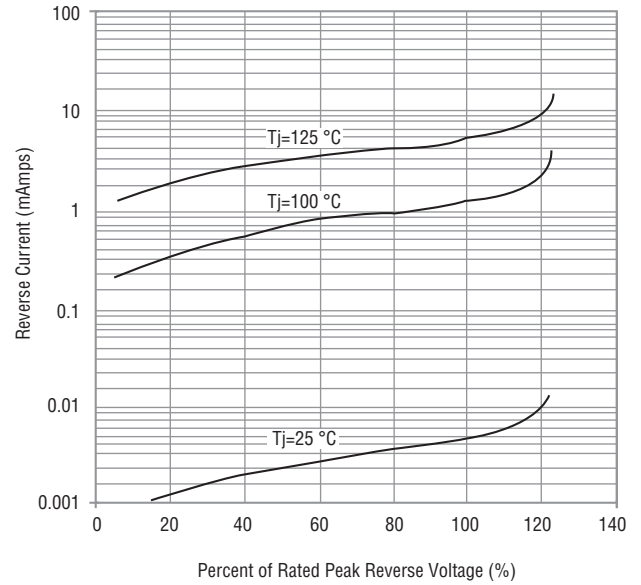


## Rating and Characteristic Curves: CD214A-B120, CD214A-B130, CD214A-B140, CD214A-B150 & CD214A-B160

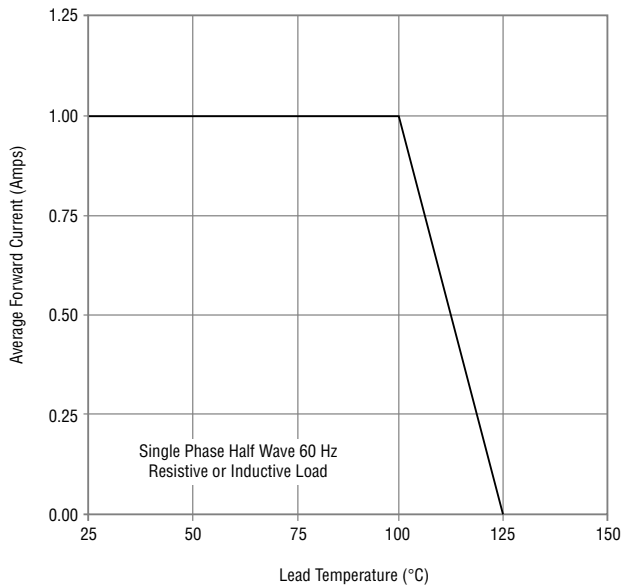
### Forward Characteristics



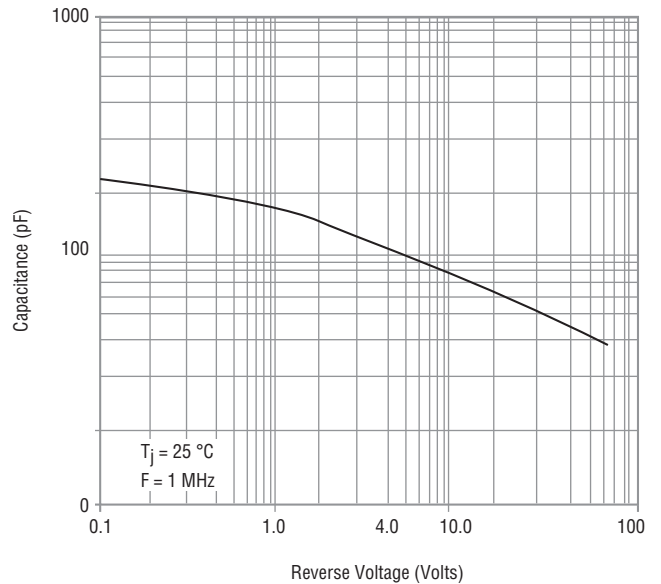
### Reverse Characteristics



### Derating Curve



### Capacitance Between Terminals



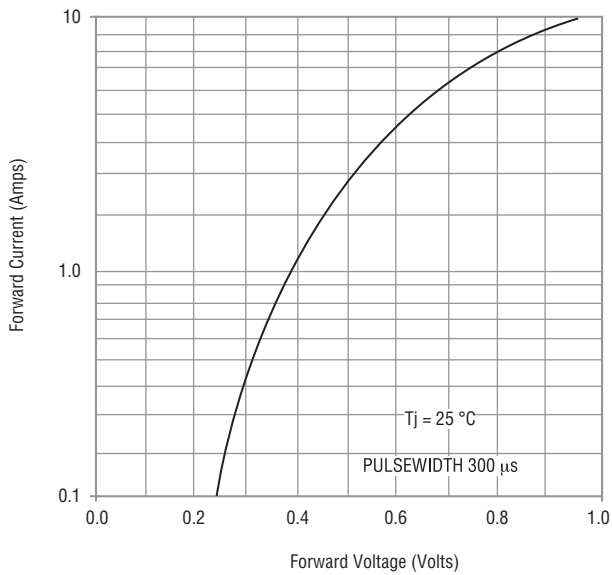
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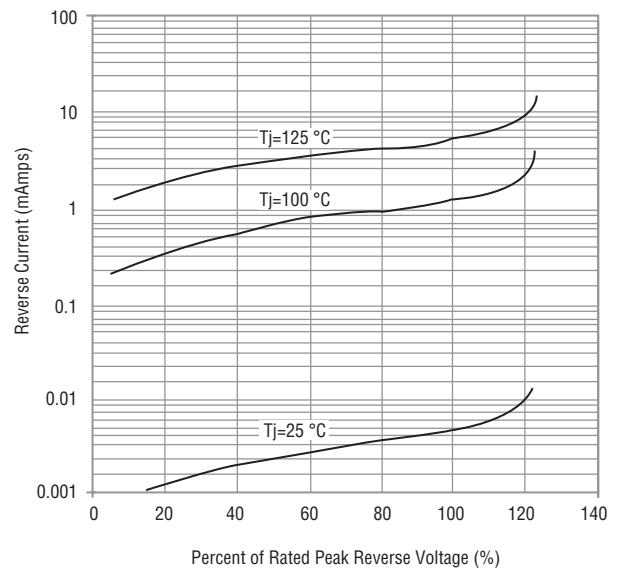
# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode **BOURNS®**

## Rating and Characteristic Curves: CD214A-B120L, CD214A-B130L

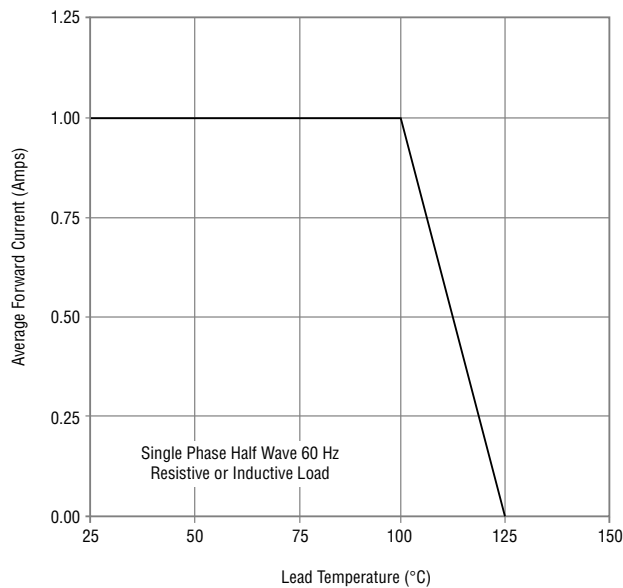
### Forward Characteristics



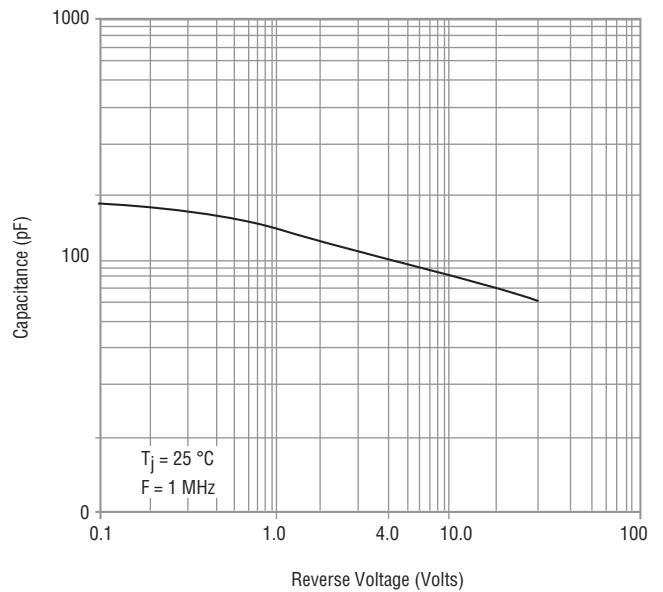
### Reverse Characteristics



### Derating Curve



### Capacitance Between Terminals

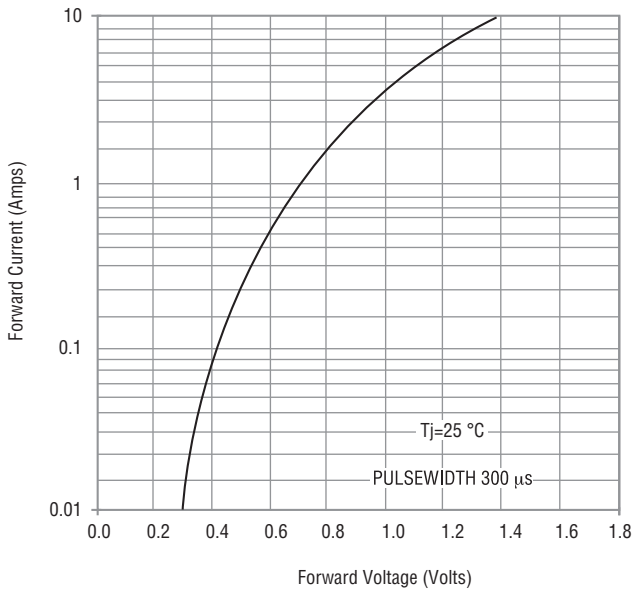


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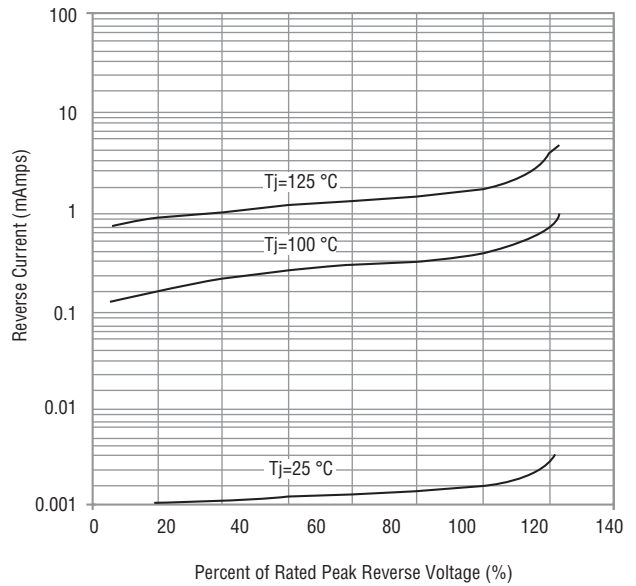
# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode **BOURNS**<sup>®</sup>

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

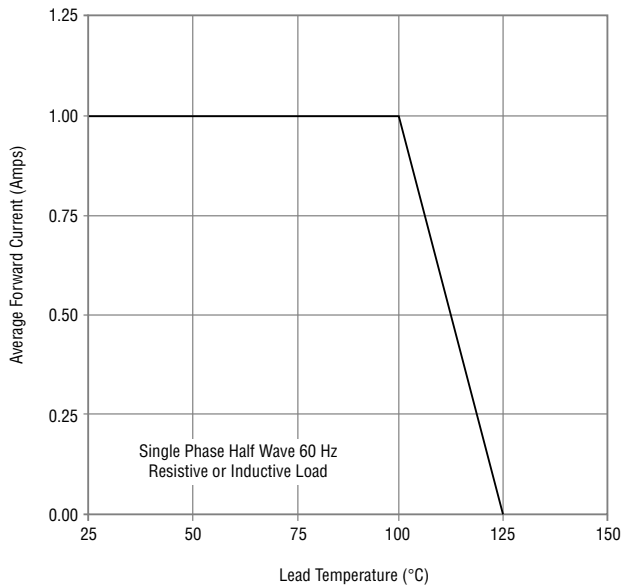
## Forward Characteristics



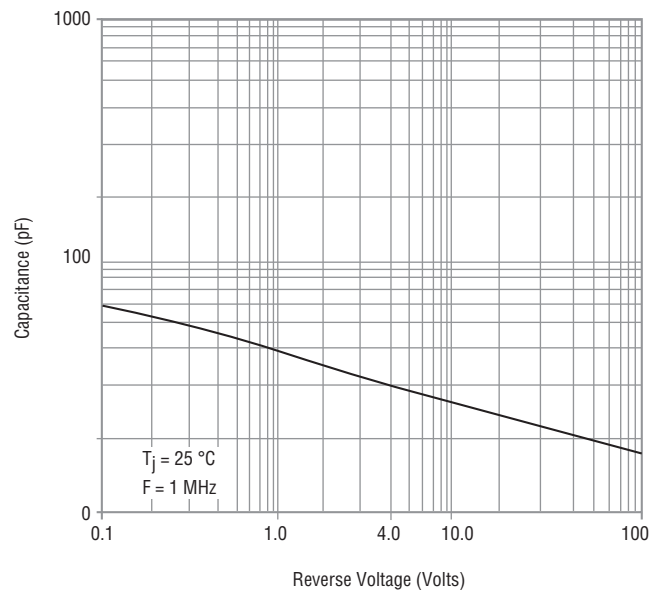
## Reverse Characteristics



## Derating Curve



## Capacitance Between Terminals



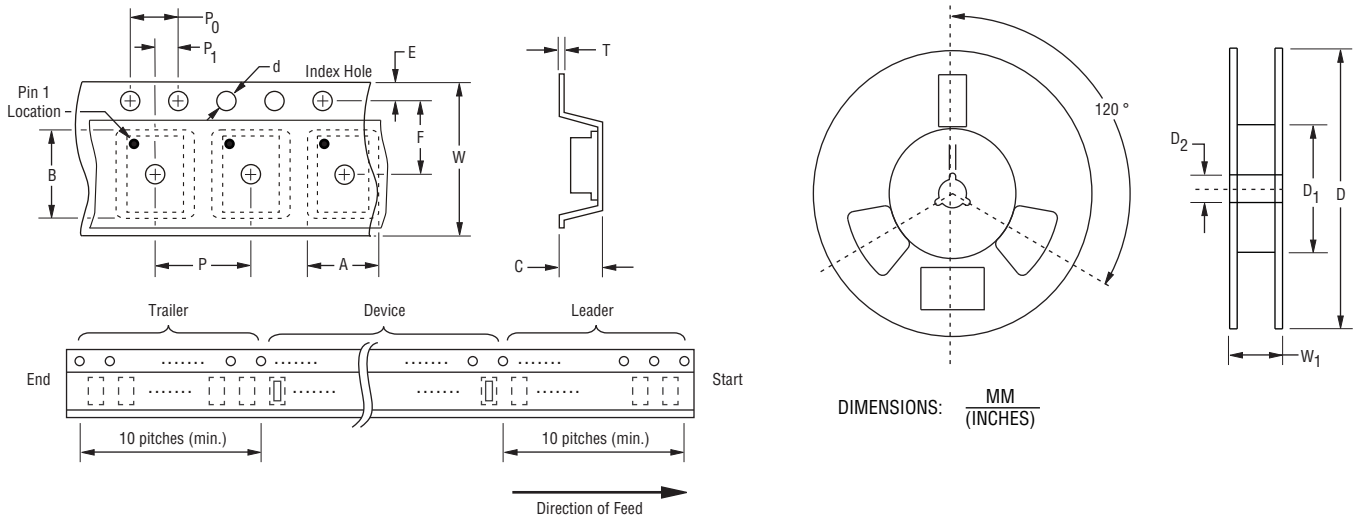
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# CD214A-B120 ~ B1100 Schottky Barrier Rectifier Chip Diode

**BOURNS®**

## Packaging Information

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



| Item                   | Symbol         | SMA (DO-214AC)                             |
|------------------------|----------------|--|
| Carrier Width          | A              | $\frac{2.90 \pm 0.10}{(0.114 \pm 0.004)}$  |
| Carrier Length         | B              | $\frac{5.59 \pm 0.10}{(0.220 \pm 0.004)}$  |
| Carrier Depth          | C              | $\frac{2.36 \pm 0.10}{(0.093 \pm 0.004)}$  |
| Sprocket Hole          | d              | $\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$  |
| Reel Outside Diameter  | D              | $\frac{3.30}{(12.992)}$                    |
| Reel Inner Diameter    | D <sub>1</sub> | $\frac{50.0}{(1.969)}$ MIN.                |
| Feed Hole Diameter     | D <sub>2</sub> | $\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$  |
| 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              | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$  |
| Sprocket Hole Pitch    | P <sub>0</sub> | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$  |
| Embossment Center      | P <sub>1</sub> | $\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$  |
| Overall Tape Thickness | T              | $\frac{0.30 \pm 0.10}{(0.012 \pm 0.004)}$  |
| Tape Width             | W              | $\frac{12.00 \pm 0.20}{(0.472 \pm 0.008)}$ |
| Reel Width             | W <sub>1</sub> | $\frac{18.4}{(0.724)}$ MAX.                |
| Quantity per Reel      | --             | 5,000                                      |

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

REV. 09/15

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