



## Features

- RoHS compliant\*
- Glass passivated chip
- Low reverse leakage current
- Low forward voltage drop
- High current capability

## CD214A-R150~R12000 Glass Passivated Rectifiers

### General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components. Bourns offers Glass Passivated Rectifiers for rectification applications, in compact chip DO-214AC (SMA) size format, which offer PCB real estate savings and are considerably smaller than most competitive parts. The Glass Passivated Rectifier Diodes offer a forward current of 1 A with a choice of repetitive peak reverse voltage of 50 V up to 2000 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 (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

| Parameter                                                                                         | Symbol                             | CD214A-  |       |       |       |       | Unit                                     |
|---------------------------------------------------------------------------------------------------|------------------------------------|----------|-------|-------|-------|-------|------------------------------------------|
|                                                                                                   |                                    | R150     | R1100 | R1200 | R1400 | R1600 |                                          |
| Maximum Repetitive Peak Reverse Voltage                                                           | $V_{RRM}$                          | 50       | 100   | 200   | 400   | 600   | V                                        |
| Maximum RMS Voltage                                                                               | $V_{RMS}$                          | 35       | 70    | 140   | 280   | 420   | V                                        |
| Maximum DC Blocking Voltage                                                                       | $V_{DC}$                           | 50       | 100   | 200   | 400   | 600   | V                                        |
| Max. Average Forward Rectified Current <sup>1</sup>                                               | $I_{(AV)}$                         | 1.0      |       |       |       |       | A                                        |
| DC Reverse Current @ Rated DC Blocking Voltage (@ $T_J = 25^\circ\text{C}$ )                      | $I_R$                              | 5.0      |       |       |       |       | $\mu\text{A}$                            |
| DC Reverse Current @ Rated DC Blocking Voltage (@ $T_J = 125^\circ\text{C}$ )                     | $I_R$                              | 30       |       |       |       |       | $\mu\text{A}$                            |
| DC Reverse Current @ Rated DC Blocking Voltage (@ $T_J = 150^\circ\text{C}$ )                     | $I_R$                              | 50       |       |       |       |       | $\mu\text{A}$                            |
| Typical Junction Capacitance <sup>2</sup>                                                         | $C_J$                              | 12       |       |       |       |       | pF                                       |
| Maximum Instantaneous Forward Voltage @ 1 A                                                       | $V_F$                              | 1.0      |       |       |       |       | V                                        |
| Typical Thermal Resistance <sup>3</sup>                                                           | $R_{\theta JA}$<br>$R_{\theta JL}$ | 75<br>27 |       |       |       |       | $^\circ\text{C/W}$<br>$^\circ\text{C/W}$ |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$                          | 30       |       |       |       |       | A                                        |

Notes:

1 See Forward Derating Curve.

2 Measured @ 1.0 MHz and applied reverse voltage of 4.0 VDC.

3 Thermal resistance from junction to ambient and from junction to lead P.C.B. mounted on 0.2 ~ x 0.2 ~ (5.0 mm x 5.0 mm) copper pad areas.

\*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.

# CD214A-R150~R12000 Glass Passivated Rectifiers

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

| Parameter                                                                                         | Symbol                               | CD214A-  |        |        |        |        |        | Unit         |
|---------------------------------------------------------------------------------------------------|--------------------------------------|----------|--------|--------|--------|--------|--------|--------------|
|                                                                                                   |                                      | R1800    | R11000 | R11100 | R11200 | R11600 | R12000 |              |
| Maximum Repetitive Peak Reverse Voltage                                                           | V <sub>RRM</sub>                     | 800      | 1000   | 1100   | 1200   | 1600   | 2000   | V            |
| Maximum RMS Voltage                                                                               | V <sub>RMS</sub>                     | 560      | 700    | 770    | 840    | 1120   | 1400   | V            |
| Maximum DC Blocking Voltage                                                                       | V <sub>DC</sub>                      | 800      | 1000   | 1100   | 1200   | 1600   | 2000   | V            |
| Max. Average Forward Rectified Current <sup>1</sup>                                               | I <sub>(AV)</sub>                    | 1.0      |        |        |        |        |        | A            |
| DC Reverse Current @ Rated DC Blocking Voltage (@T <sub>J</sub> = 25 °C)                          | I <sub>R</sub>                       | 5.0      |        |        |        |        |        | μA           |
| DC Reverse Current @ Rated DC Blocking Voltage (@T <sub>J</sub> = 125 °C)                         | I <sub>R</sub>                       | 30       |        | 50     |        |        |        | μA           |
| Typ. Junction Capacitance <sup>2</sup>                                                            | C <sub>J</sub>                       | 12       |        |        |        |        |        | pF           |
| Maximum Instantaneous Forward Voltage @ 1 A                                                       | V <sub>F</sub>                       | 1.0      |        | 1.25   |        |        | 2.0    | V            |
| Typical Thermal Resistance <sup>3</sup>                                                           | R <sub>θJA</sub><br>R <sub>θJL</sub> | 75<br>27 |        |        |        |        |        | °C/W<br>°C/W |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                     | 30       |        | 25     |        |        | 25     | A            |

Notes:

1 See Forward Derating Curve.

2 Measured @ 1.0 MHz and applied reverse voltage of 4.0 VDC.

3 Thermal resistance from junction to ambient and from junction to lead P.C.B. mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas.

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

| Parameter                   | Symbol    | CD214A-R150~R12000 | Unit             |
|-----------------------------|-----------|--------------------|------------------|
| Operating Temperature Range | $T_J$     | -65 to +175        | $^\circ\text{C}$ |
| Storage Temperature Range   | $T_{STG}$ | -65 to +175        | $^\circ\text{C}$ |

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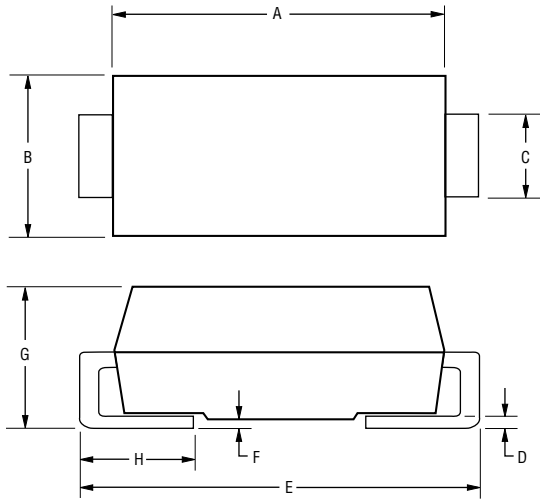
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# CD214A-R150~R12000 Glass Passivated Rectifiers

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## Product Dimensions

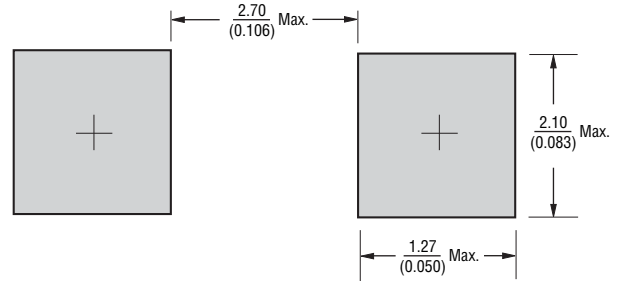
This is an RoHS compliant molded plastic package. The polarity is indicated by a cathode band and weighs approximately 0.064 g. The package and dimensions are shown below.



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

| Dimensions | DO-214AC (SMA)                        |
|------------|---------------------------------------|
| 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          | $\frac{0.15 - 0.31}{(0.006 - 0.112)}$ |
| 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          | $\frac{0.76 - 1.52}{(0.030 - 0.060)}$ |

## Recommended Pad Layout



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

## Physical Specifications

Case .....Molded plastic per UL Class 94V-0  
Polarity .....Band indicates diode cathode  
Weight .....0.002 ounces / 0.064 grams

## How To Order

**CD 214A - R 1 50**

Common Code .....  
Chip Diode .....  
Package .....  
• 214A = SMA/DO-214AC  
Model .....  
R = Glass Passivated Rectifiers  
Forward Current  $I_{(AV)}$  .....  
1 = 1 A  
Reverse Voltage .....  
50 = 50 V      1000 = 1000 V  
100 = 100 V      1100 = 1100 V  
200 = 200 V      1200 = 1200 V  
400 = 400 V      1600 = 1600 V  
600 = 600 V      2000 = 2000 V  
800 = 800 V

## Typical Part Marking

CD214A-R150 ..... **B** R1A  
CD214A-R1100 ..... **B** R1B  
CD214A-R1200 ..... **B** R1D  
CD214A-R1400 ..... **B** R1G  
CD214A-R1600 ..... **B** R1J  
CD214A-R1800 ..... **B** R1K  
CD214A-R11000 ..... **B** R1M  
CD214A-R11100 ..... **B** R1N  
CD214A-R11200 ..... **B** R1Q  
CD214A-R11600 ..... **B** R1Y  
CD214A-R12000 ..... **B** R1Z

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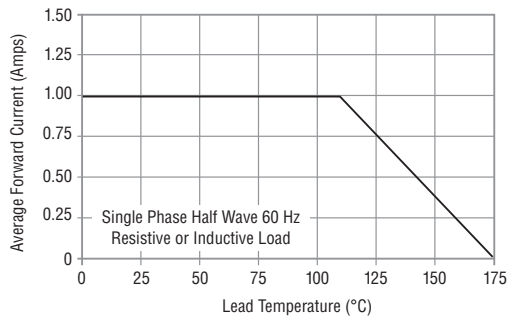
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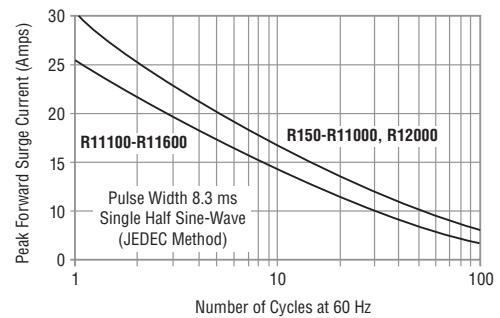
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## Rating and Characteristic Curves

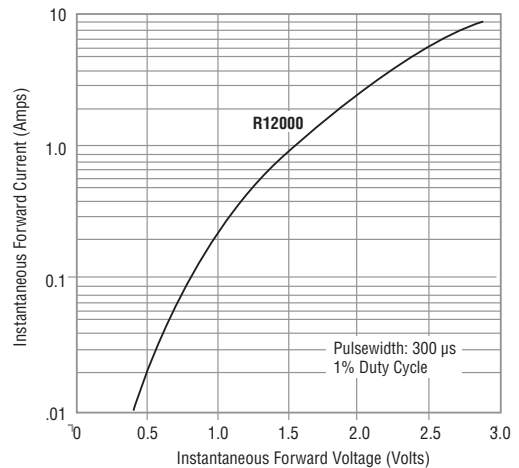
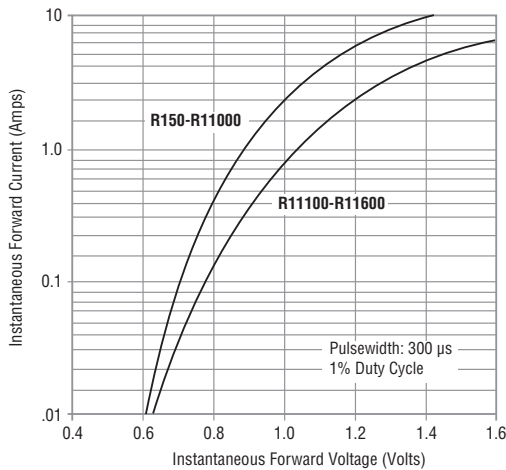
### Forward Current Derating Curve



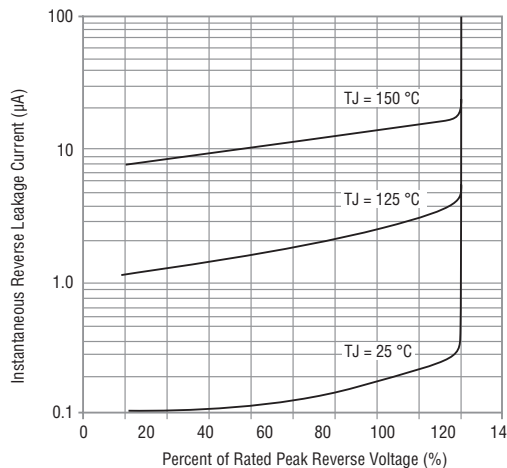
### Non-Repetitive Surge Current



### Forward Characteristics



### Reverse Characteristics



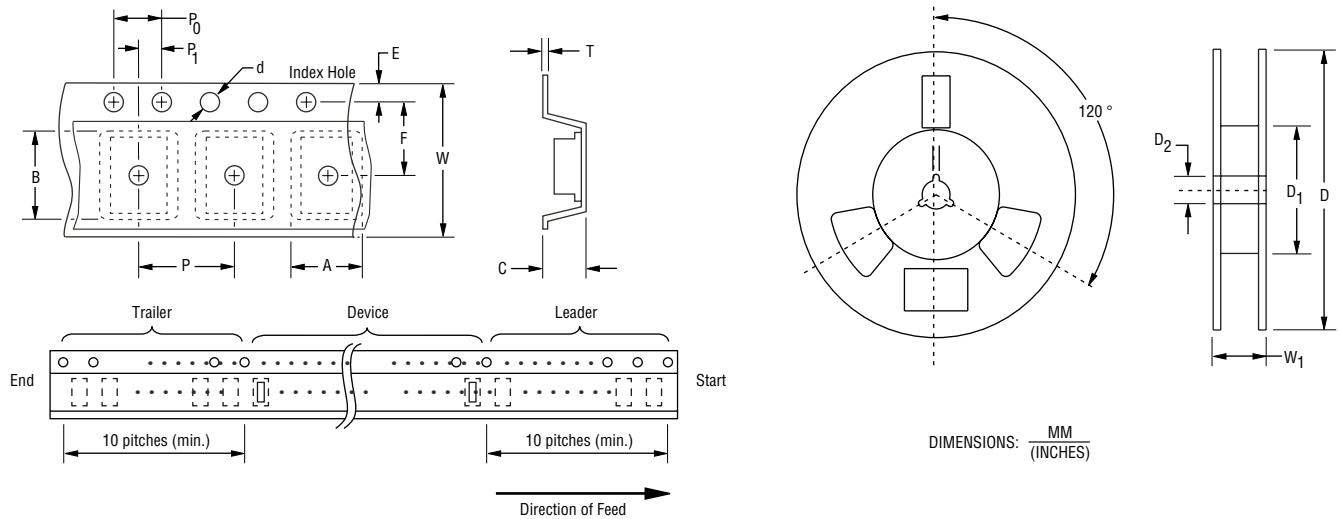
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# CD214A-R150~R12000 Glass Passivated Rectifiers

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## Packaging Information

The surface mount product is packaged in a 12 mm x 4 mm tape and reel format per EIA-481 standard.



| Item                   | Symbol | DO-214AC (SMA)                             |
|------------------------|--------|--------------------------------------------|
| Carrier Width          | A      | $\frac{3.42 \pm 0.10}{(0.134 \pm 0.004)}$  |
| Carrier Length         | B      | $\frac{5.07 \pm 0.10}{(0.199 \pm 0.004)}$  |
| Carrier Depth          | C      | $\frac{3.10 \pm 0.10}{(0.122 \pm 0.004)}$  |
| Sprocket Hole          | d      | $\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$  |
| Reel Outside Diameter  | D      | $\frac{330}{(12.992)}$                     |
| Reel Inner Diameter    | D1     | $\frac{50.0}{(1.969)} \text{ Min.}$        |
| Feed Hole Diameter     | D2     | $\frac{13.0 \pm 0.50}{(0.512 \pm 0.020)}$  |
| Sprocket Hole Position | E      | $\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$  |
| Punch Hole Position    | F      | $\frac{5.50 \pm 0.50}{(0.217 \pm 0.020)}$  |
| Punch Hole Pitch       | P      | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$  |
| Sprocket Hole Pitch    | P0     | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$  |
| Embossment Center      | P1     | $\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$  |
| Overall Tape Thickness | T      | $\frac{0.30 \pm 0.10}{(0.012 \pm 0.004)}$  |
| Tape Width             | W      | $\frac{12.00 \pm 0.20}{(0.420 \pm 0.008)}$ |
| Reel Width             | W1     | $\frac{18.7}{(0.736)} \text{ Max.}$        |
| Quantity per Reel      | —      | 7,500                                      |

REV. 04/15  
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## Данный компонент на территории Российской Федерации

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Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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