



Features

- RoHS compliant*
- Low profile
- Low power loss, high efficiency
- UL 94V-0 rating
- Halogen free**

Applications

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

CD214A-R12000R 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 Glass Passivated Rectifiers for rectification applications, in a compact chip package compatible with DO-214AC (SMA) size format. The Glass Passivated Rectifiers offer a forward current of 1 A with a choice of repetitive peak reverse voltage of 2000 V.



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

| Parameter | Symbol | CD214A-R12000R | Unit |
|---|-------------|----------------|------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 2000 | V |
| Maximum Average Forward Current | $I_{F(AV)}$ | 1 | A |
| Maximum Peak Forward Surge Current (8.3 ms Single Half Sine-Wave) | I_{FSM} | 30 | A |
| Operating Junction Temperature Range | T_{OPR} | -65 to +175 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -65 to +175 | $^\circ\text{C}$ |

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

| Parameter | Symbol | Condition or Model | Min. | Typ. | Max. | Unit |
|--|---------------------|--|---------------------------|------|------|--------------------|
| Maximum Instantaneous Forward Voltage @ 1 A (NOTE 1) | V_F | | | | 1.1 | V |
| DC Reverse Current | I_R | $V_R = V_{RRM}$ | $T_A = 25^\circ\text{C}$ | | 5 | μA |
| | | | $T_A = 125^\circ\text{C}$ | | 50 | |
| Typical Junction Capacitance | C_J | $V_R = 4\text{ V}$, $f = 1.0\text{ MHz}$ | | 6 | | pF |
| Typical Thermal Resistance (NOTE 2) | Junction to Ambient | $R_{\theta JA}$ | | 65 | | $^\circ\text{C/W}$ |
| | Junction to Lead | $R_{\theta JL}$ | | 15 | | |

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.



WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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

** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

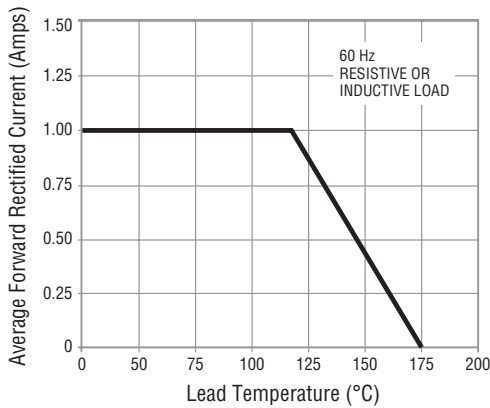
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CD214A-R12000R Rectifier Chip Diode

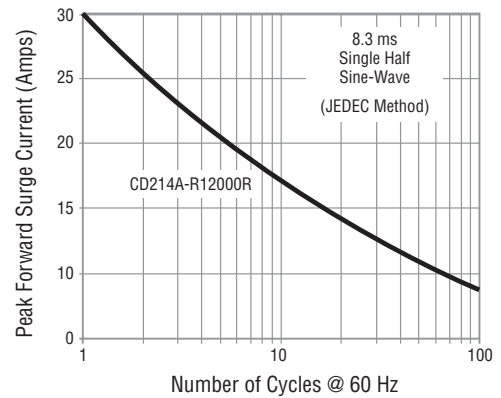
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Performance Graphs

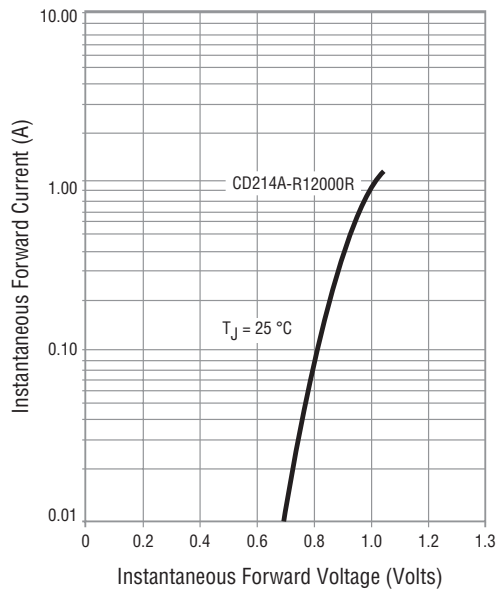
Forward Current Derating Curve



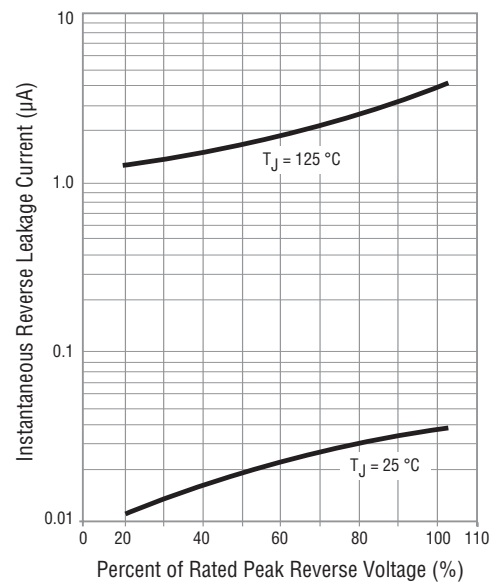
Maximum Peak Forward Surge Current



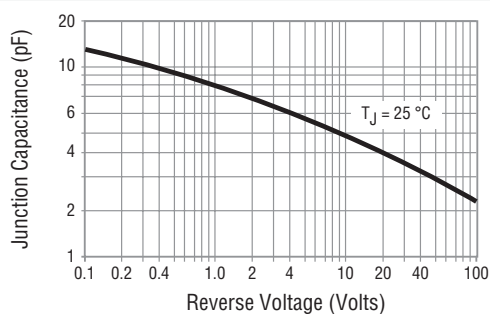
Typical Instantaneous Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance

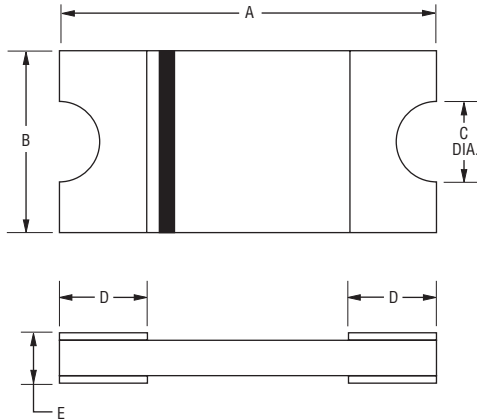


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CD214A-R12000R Rectifier Chip Diode

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Product Dimensions



| Dimension | CD214A-R12000R |
|-----------|---|
| A | 4.5 ± 0.10 (0.177 ± 0.004) |
| B | 2.20 ± 0.10 (0.087 ± 0.004) |
| C (Dia.) | 0.50 (0.020) |
| D | 0.95 ± 0.20 (0.037 ± 0.008) |
| E | $0.96 +0.20/-0.10$ (0.038 +0.008/-0.004) |

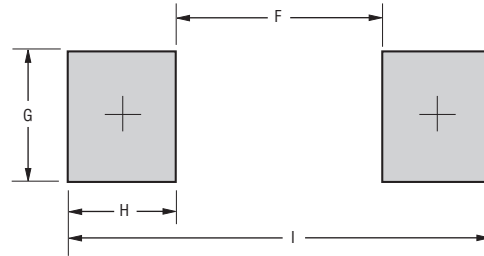
DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

How to Order

CD 214A - R 1 2000 R

Common Code _____
 CD = Chip Diode
 Package _____
 214A = SMA/DO-214AC Compatible
 Model _____
 R = Glass Passivated Rectifier Series
 Maximum Average Forward Rectified Current _____
 1 = 1 A
 Maximum Repetitive Peak Reverse Voltage _____
 2000 = 2000 V

Recommended Pad Layout



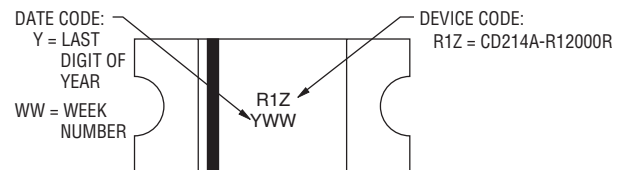
| Dimension | CD214A-R12000R |
|-----------|-----------------------------|
| F | $\frac{2.60}{(0.102)}$ MAX. |
| G | $\frac{1.47}{(0.058)}$ MIN. |
| H | $\frac{1.27}{(0.050)}$ MIN. |
| I | $\frac{5.14}{(0.202)}$ REF. |

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

Environmental Specifications

Moisture Sensitivity Level 1
 ESD Classification (HBM) 1C

Typical Part Marking

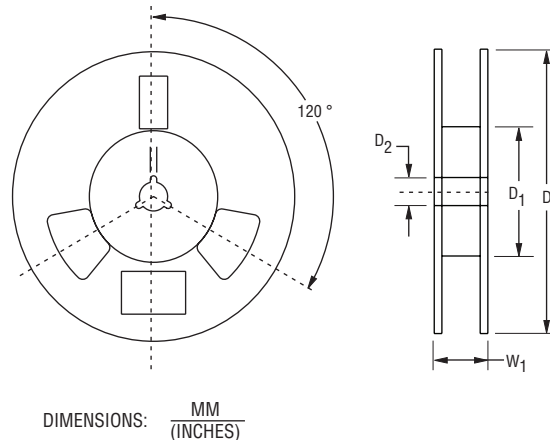
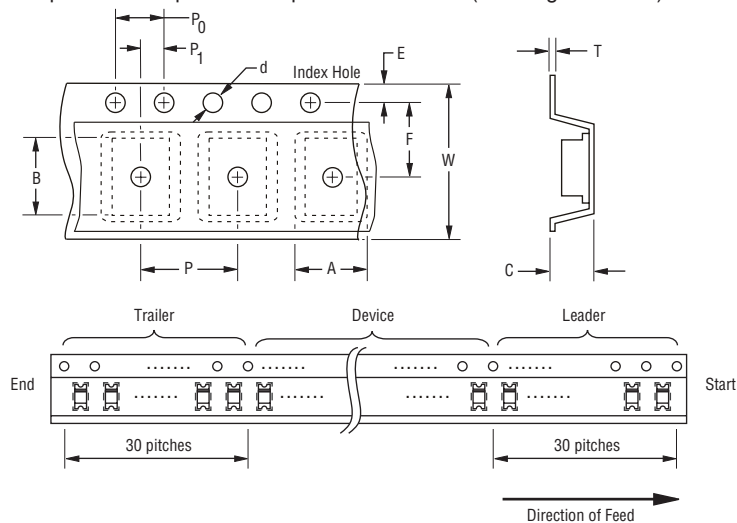


CD214A-R12000R Rectifier Chip Diode

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Packaging Information

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



| Item | Symbol | CD214A-R12000R |
|------------------------|----------------|--|
| Carrier Width | A | $\frac{2.45 \pm 0.10}{(0.096 \pm 0.004)}$ |
| Carrier Length | B | $\frac{4.75 \pm 0.10}{(0.187 \pm 0.004)}$ |
| Carrier Depth | C | $\frac{1.51 \pm 0.10}{(0.059 \pm 0.004)}$ |
| Sprocket Hole | d | $\frac{1.50 \pm 0.10}{(0.059 \pm 0.004)}$ |
| Reel Outside Diameter | D | $\frac{178 \pm 2.0}{(7.008 \pm 0.079)}$ |
| Reel Inner Diameter | D ₁ | $\frac{50.0}{(1.969)} \text{ MIN.}$ |
| Feed Hole Diameter | D ₂ | $\frac{13.0 \pm 0.50}{(0.512 \pm 0.020)}$ |
| 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 | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$ |
| Sprocket Hole Pitch | P ₀ | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$ |
| Embossment Center | P ₁ | $\frac{2.00 \pm 0.10}{(0.079 \pm 0.004)}$ |
| 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 ₁ | $\frac{18.7}{(0.736)} \text{ MAX.}$ |
| Quantity per Reel | -- | 3,000 |

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