



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-RS1x Series Fast Response 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 200 V up to 1000 V.



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

| Parameter | Symbol | CD214A- | | | | | Unit |
|---|--------------------|-------------|------|------|------|------|------|
| | | RS1D | RS1G | RS1J | RS1K | RS1M | |
| Maximum Repetitive Peak Reverse Voltage | V _{RRM} | 200 | 400 | 600 | 800 | 1000 | 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 | | | | | °C |
| Storage Temperature Range | T _{STG} | -65 to +175 | | | | | °C |

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

| Parameter | Symbol | Condition or Model | Min. | Typ. | Max. | Unit |
|--|--|--------------------------------------|---------------------------|------|------|------|
| Maximum Instantaneous Forward Voltage (NOTE 1) | V _F | I _F = 1 A | | 1.05 | 1.30 | V |
| DC Reverse Current | I _R | V _R = V _{RRM} | | 0.10 | 5 | μA |
| Reverse Recovery Time | I _F = 0.5 A I _R = 1 A I _{rr} = 0.25 A | T _{rr} | CD214A-RS1D ~ CD214A-RS1G | | 150 | nS |
| | | | CD214A-RS1J | | 250 | |
| | | | CD214A-RS1K | | 300 | |
| | | | CD214A-RS1M | | 500 | |
| Typical Junction Capacitance | C _J | V _R = 4 V, f = 1.0 MHz | | 8.2 | | pF |
| Typical Thermal Resistance (NOTE 2) | Junction to Ambient | R _{θJA} | | 61 | | °C/W |
| | Junction to Lead | R _{θJL} | | 7 | | |

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.

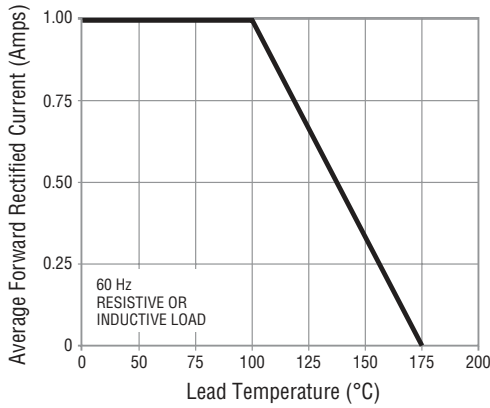
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CD214A-RS1x Series Fast Response Rectifier Chip Diode

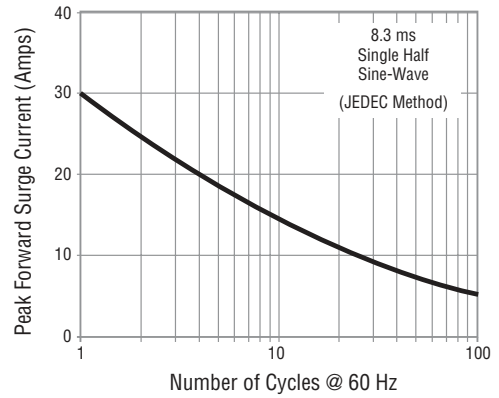


Performance Graphs

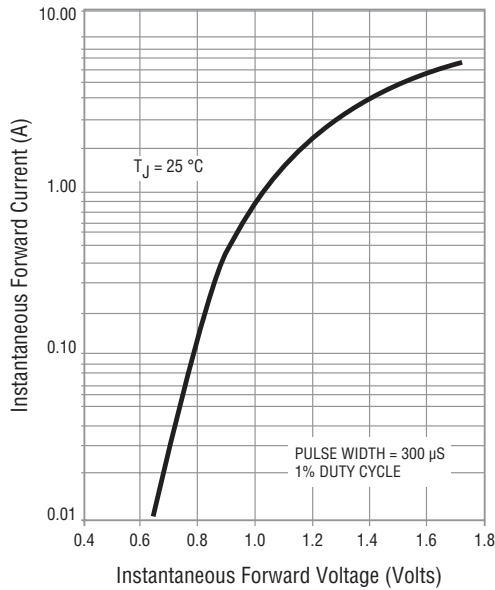
Forward Current Derating Curve



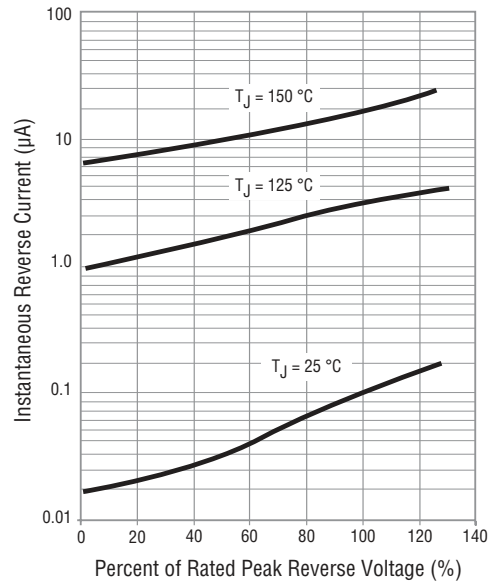
Maximum Peak Forward Surge Current



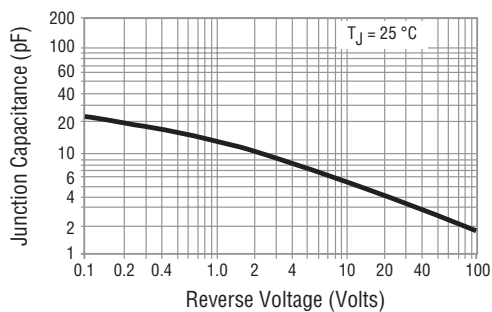
Typical Instantaneous Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance

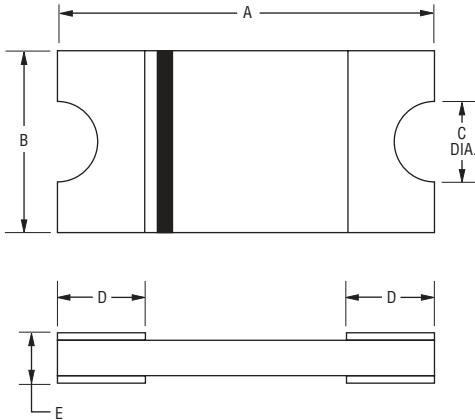


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CD214A-RS1x Series Fast Response Rectifier Chip Diode



Product Dimensions



| Dimension | CD214A-RS1 Series |
|-----------|--|
| A | $\frac{4.5 \pm 0.10}{(0.177 \pm 0.004)}$ |
| B | $\frac{2.20 \pm 0.10}{(0.087 \pm 0.004)}$ |
| C (Dia.) | $\frac{0.50}{(0.020)}$ |
| D | $\frac{0.95 \pm 0.20}{(0.037 \pm 0.008)}$ |
| E | $\frac{0.96 +0.20/-0.10}{(0.038 +0.008/-0.004)}$ |

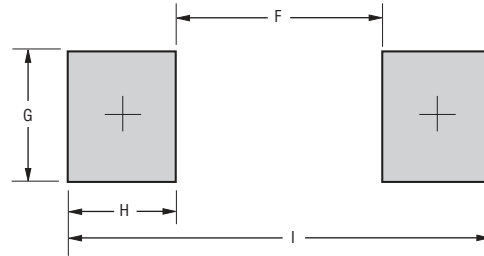
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

How to Order

CD 214A - RS 1 D

- Common Code _____
- CD = Chip Diode
- Package _____
- 214A = SMA/DO-214AC Compatible
- Model _____
- RS = Glass Passivated Fast Response Rectifier Series
- Maximum Average Forward Rectified Current _____
- 1 = 1 A
- Maximum Repetitive Peak Reverse Voltage _____
- D = 200 V
- G = 400 V
- J = 600 V
- K = 800 V
- M = 1000 V

Recommended Pad Layout



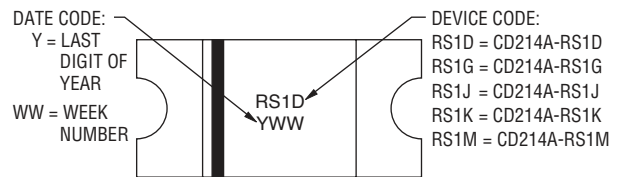
| Dimension | CD214A-RS1 Series |
|-----------|-----------------------------|
| F | $\frac{2.60}{(0.102)}$ MAX. |
| G | $\frac{1.47}{(0.058)}$ MIN. |
| H | $\frac{1.27}{(0.050)}$ MIN. |
| I | $\frac{5.14}{(0.202)}$ REF. |

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

Environmental Specifications

- Moisture Sensitivity Level.....1
- ESD Classification (HBM).....1C

Typical Part Marking

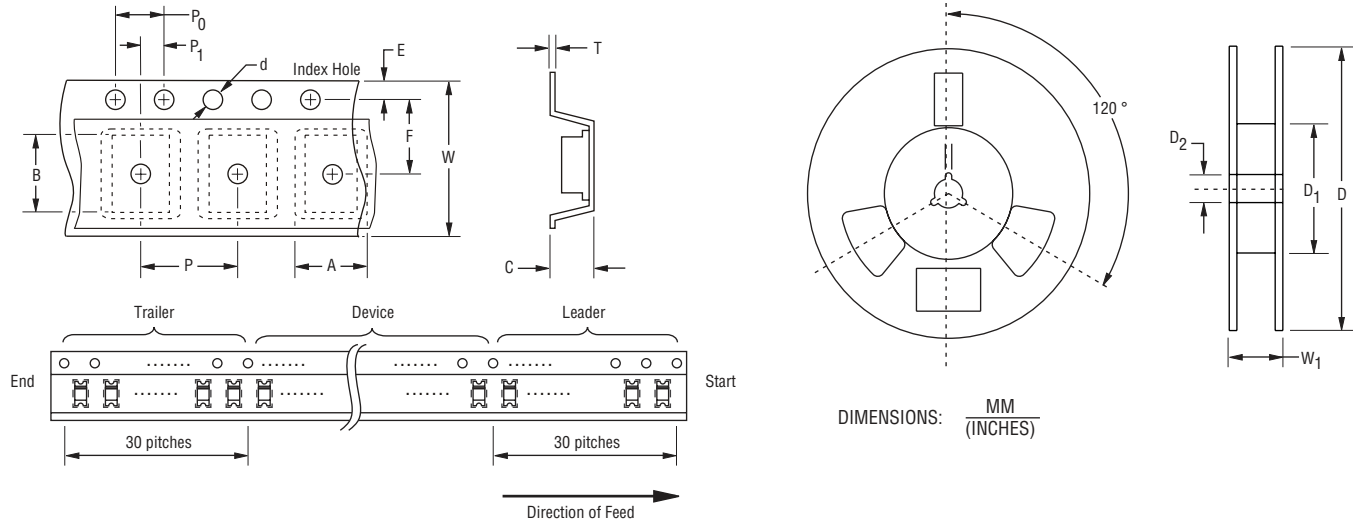


CD214A-RS1x Series Fast Response Rectifier Chip Diode

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Packaging Information

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



| Item | Symbol | CD214A-RS1 Series |
|------------------------|----------------|--|
| 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 | $\frac{50.0}{(1.969)}$ 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 | $\frac{0.40}{(0.016)}$ MAX. |
| Tape Width | W | $\frac{12.00 \pm 0.30}{(0.472 \pm 0.012)}$ |
| Reel Width | W ₁ | $\frac{18.7}{(0.736)}$ MAX. |
| Quantity per Reel | -- | 3,000 |

BOURNS®

Asia-Pacific:

Tel: +886-2 2562-4117

Email: asiacus@bourns.com

Europe:

Tel: +36 88 885 877

Email: eurocus@bourns.com

The Americas:

Tel: +1-951 781-5500

Email: americus@bourns.com

www.bourns.com

REV. 03/20

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