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## 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 | $R_{\theta JA}$ | | | 61 | | °C/W |
| | Junction to Lead | $R_{\theta JL}$ | | | 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.

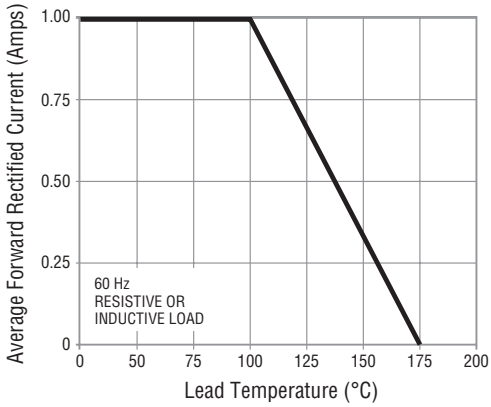
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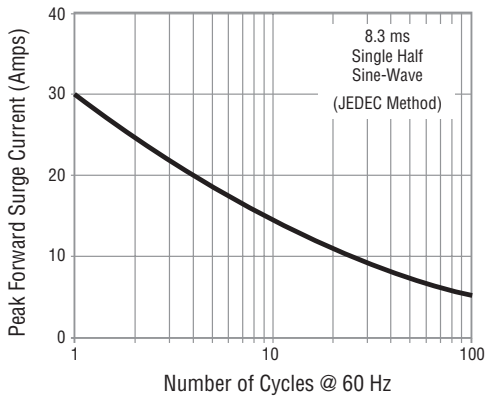


## Performance Graphs

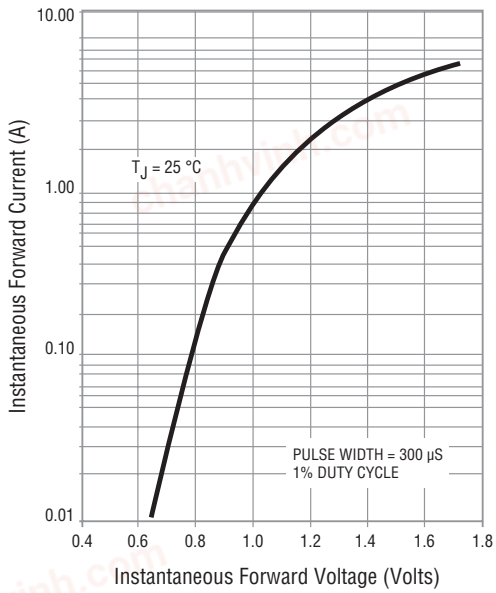
### Forward Current Derating Curve



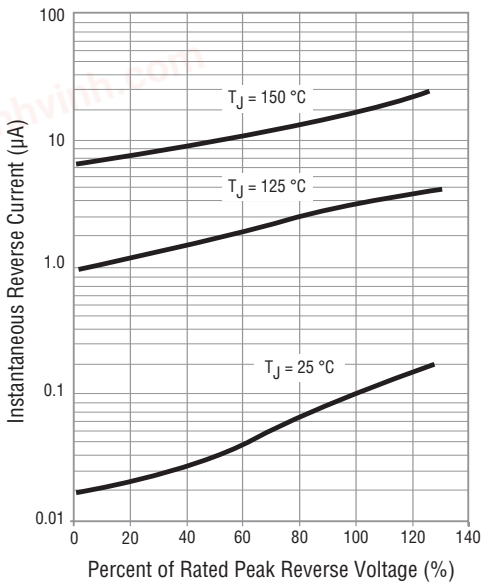

### Maximum Peak Forward Surge Current



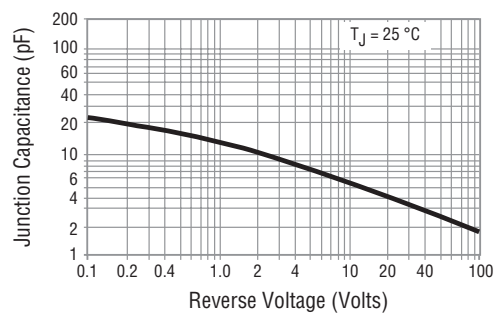

### Typical Instantaneous Forward Characteristics




### Typical Reverse Characteristics




### Typical Junction Capacitance



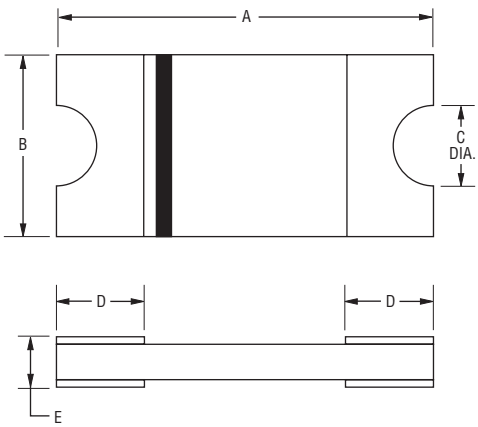

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# CD214A-RS1x Series Fast Response Rectifier Chip Diode

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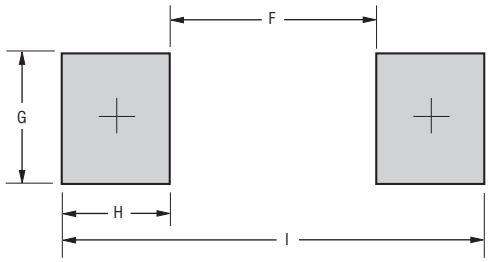
## Product Dimensions




| Dimension | CD214A-RS1 Series |
|---|---|
| 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: MM (INCHES)

## Recommended Pad Layout




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

DIMENSIONS: MM (INCHES)

## Environmental Specifications

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

## How to Order

**CD 214A - RS 1 D**

Common Code
CD = Chip Diode

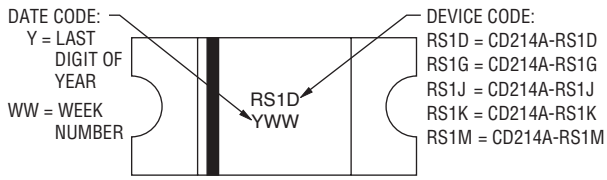
Package
214A = SMA/DO-214AC Compatible

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

## Typical Part Marking




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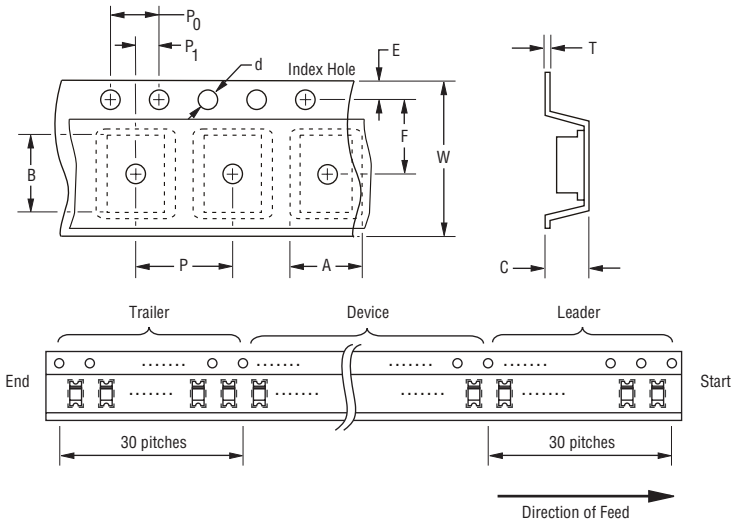
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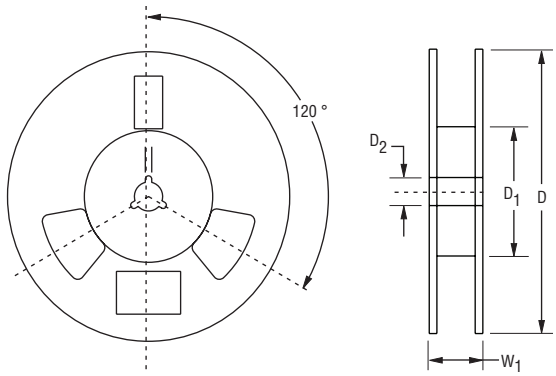
# CD214A-RS1x Series Fast Response Rectifier Chip Diode

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## Packaging Information

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




DIMENSIONS: MM / (INCHES)

| Item | Symbol | CD214A-RS1 Series |
|---|---|---|
| Carrier Width | A | 2.45 ± 0.10 (0.096 ± 0.004) |
| Carrier Length | B | 4.75 ± 0.10 (0.187 ± 0.004) |
| Carrier Depth | C | 1.51 ± 0.10 (0.059 ± 0.004) |
| Sprocket Hole | d | 1.50 ± 0.10 (0.059 ± 0.004) |
| Reel Outside Diameter | D | 178 ± 2.0 (7.008 ± 0.079) |
| Reel Inner Diameter | $D_1$ | 50.0 (1.969) MIN. |
| Feed Hole Diameter | $D_2$ | 13.0 ± 0.50 (0.512 ± 0.020) |
| Sprocket Hole Position | E | 1.75 ± 0.10 (0.069 ± 0.004) |
| Punch Hole Position | F | 5.50 ± 0.05 (0.217 ± 0.002) |
| Punch Hole Pitch | P | 4.00 ± 0.10 (0.157 ± 0.004) |
| Sprocket Hole Pitch | $P_0$ | 4.00 ± 0.10 (0.157 ± 0.004) |
| Embossment Center | $P_1$ | 2.00 ± 0.10 (0.079 ± 0.004) |
| Overall Tape Thickness | T | 0.40 (0.016) MAX. |
| Tape Width | W | 12.00 ± 0.30 (0.472 ± 0.012) |
| Reel Width | $W_1$ | 18.7 (0.736) MAX. |
| Quantity per Reel | -- | 3,000 |

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