



## 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<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CD214A-					Unit
		RS1D	RS1G	RS1J	RS1K	RS1M	
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	200	400	600	800	1000	V
Maximum Average Forward Current	I <sub>F(AV)</sub>	1					A
Maximum Peak Forward Surge Current (8.3 ms Single Half Sine-Wave)	I <sub>FSM</sub>	30					A
Operating Junction Temperature Range	T <sub>OPR</sub>	-65 to +175					°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +175					°C

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

Parameter	Symbol	Condition or Model	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage (NOTE 1)	V <sub>F</sub>	I <sub>F</sub> = 1 A		1.05	1.30	V
DC Reverse Current	I <sub>R</sub>	V <sub>R</sub> = V <sub>RRM</sub>		0.10	5	μA
Reverse Recovery Time	I <sub>F</sub> = 0.5 A I <sub>R</sub> = 1 A I <sub>rr</sub> = 0.25 A	T <sub>rr</sub>			150	nS
					250	
					300	
					500	
Typical Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 4 V, f = 1.0 MHz		8.2		pF
Typical Thermal Resistance (NOTE 2)	Junction to Ambient	R <sub>θJA</sub>		61		°C/W
	Junction to Lead	R <sub>θJL</sub>		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](http://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.

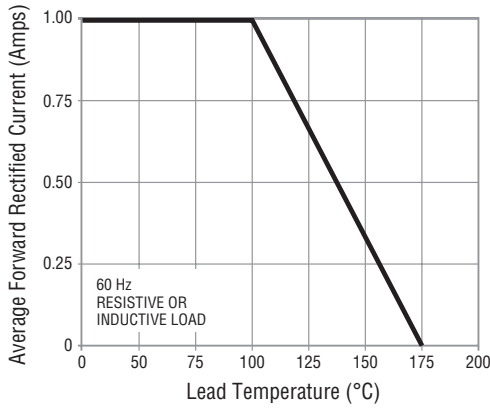
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# CD214A-RS1x Series Fast Response Rectifier Chip Diode

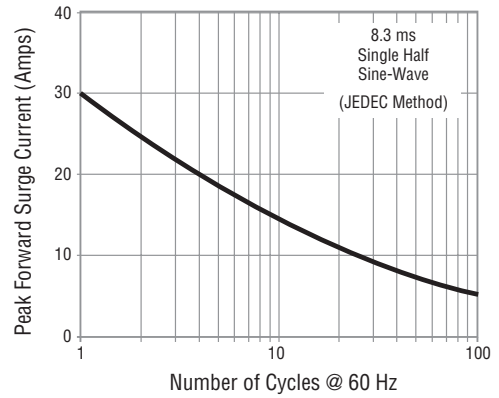


## Performance Graphs

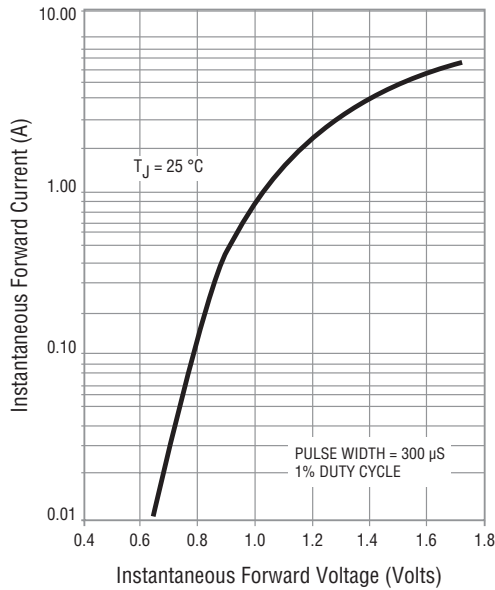
### Forward Current Derating Curve



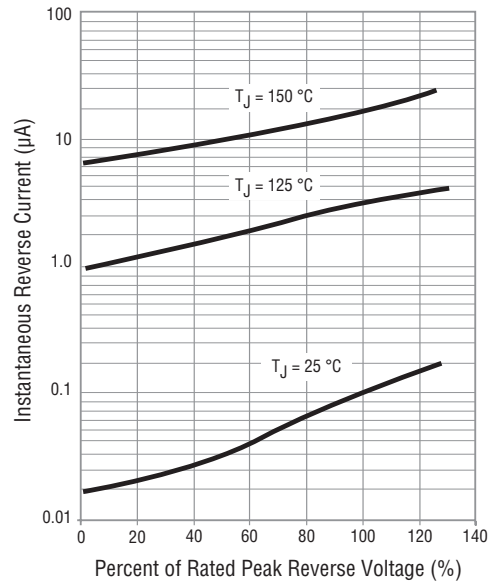
### Maximum Peak Forward Surge Current



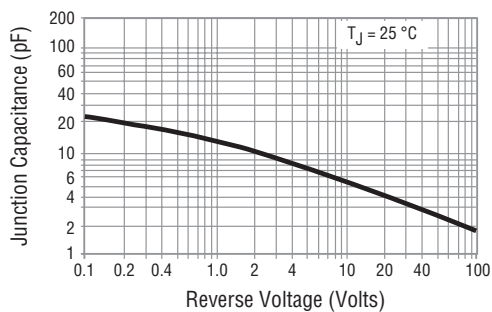
### Typical Instantaneous Forward Characteristics



### Typical Reverse Characteristics



### Typical Junction Capacitance

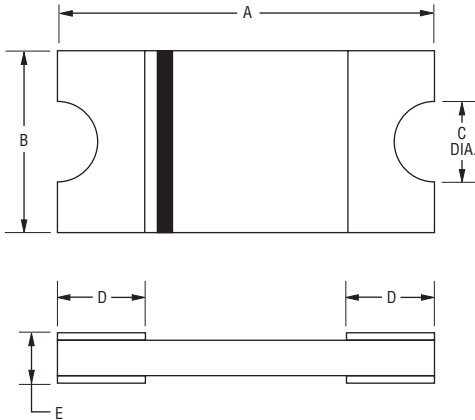


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# CD214A-RS1x Series Fast Response Rectifier Chip Diode



## 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	$\frac{0.96 +0.20/-0.10}{(0.038 +0.008/-0.004)}$

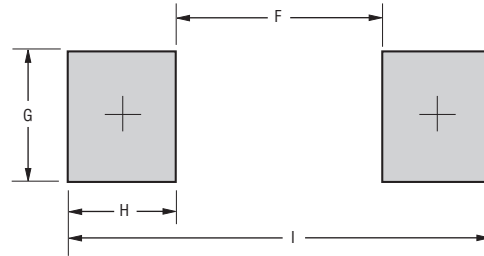
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## 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



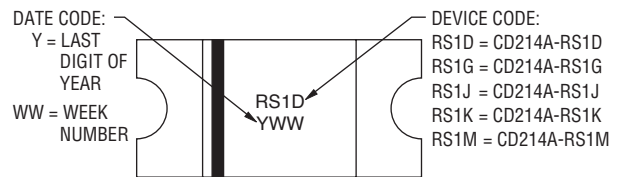
Dimension	CD214A-RS1 Series
F	$\frac{2.60}{(0.102)}$ MAX.
G	$\frac{1.47}{(0.058)}$ MIN.
H	$\frac{1.27}{(0.050)}$ MIN.
I	$\frac{5.14}{(0.202)}$ REF.

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

## Environmental Specifications

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

## Typical Part Marking



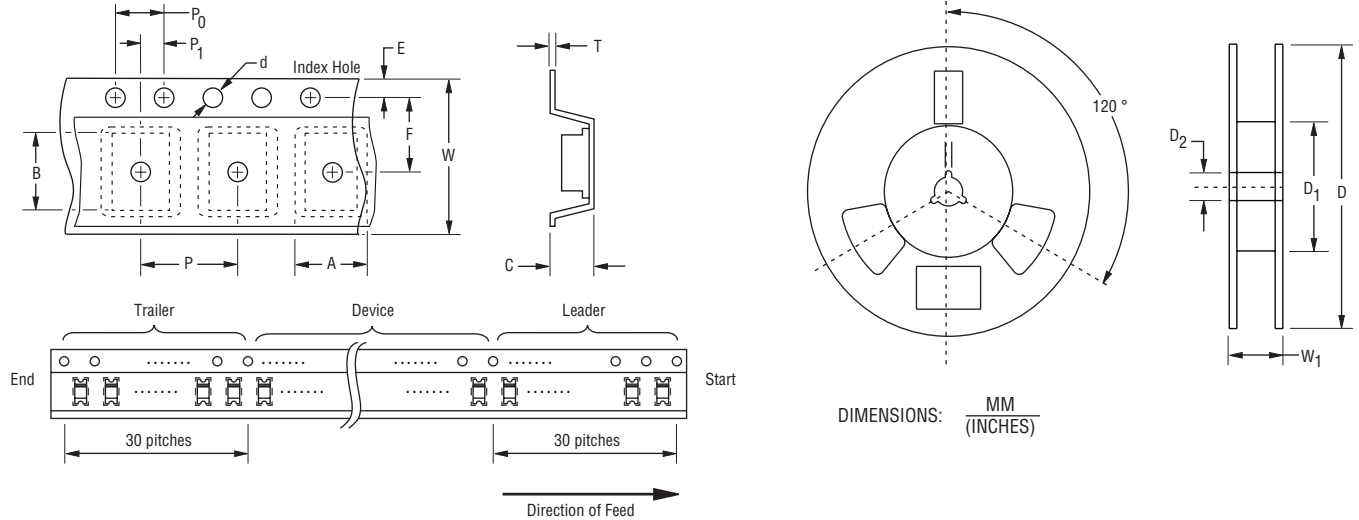
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# CD214A-RS1x Series Fast Response Rectifier Chip Diode

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## Packaging Information

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



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 <sub>1</sub>	$\frac{50.0}{(1.969)}$ MIN.
Feed Hole Diameter	D <sub>2</sub>	$\frac{13.0 \pm 0.50}{(0.512 \pm 0.020)}$
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 <sub>0</sub>	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P <sub>1</sub>	$\frac{2.00 \pm 0.10}{(0.079 \pm 0.004)}$
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 <sub>1</sub>	$\frac{18.7}{(0.736)}$ MAX.
Quantity per Reel	--	3,000

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