



## 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-FS1x 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 800 V.



## Absolute Maximum Ratings (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CD214A-				Unit
		FS1D	FS1G	FS1J	FS1K	
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	200	400	600	800	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		25		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	CD214A-FS1D		0.94	0.95	V
			CD214A-FS1G		1.15	1.25	
			CD214A-FS1J		1.40	1.70	
			CD214A-FS1K		1.65	2.20	
DC Reverse Current	I <sub>R</sub>	V <sub>R</sub> = V <sub>RRM</sub>		0.20	5	μA	
Reverse Recovery Time	T <sub>rr</sub>	I <sub>F</sub> = 0.5 A			35	nS	
		I <sub>R</sub> = 1 A					
		I <sub>rr</sub> = 0.25 A					
Typical Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 4 V, f = 1.0 MHz		8.0		pF	
Typical Thermal Resistance (NOTE 2)	Junction to Ambient	R <sub>θJA</sub>		70		°C/W	
	Junction to Lead	R <sub>θJL</sub>		10			

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.

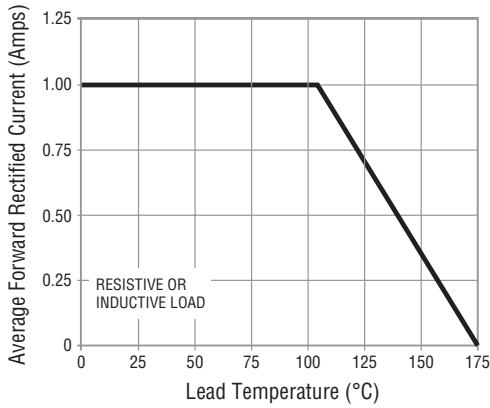
Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

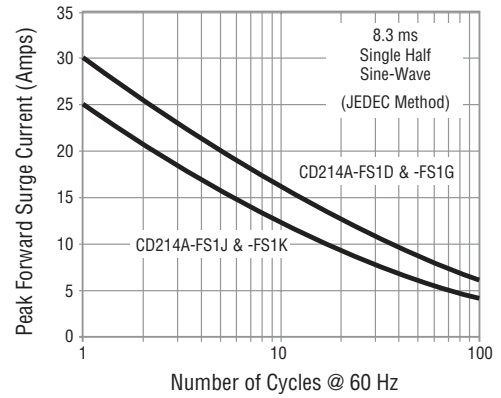
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Performance Graphs

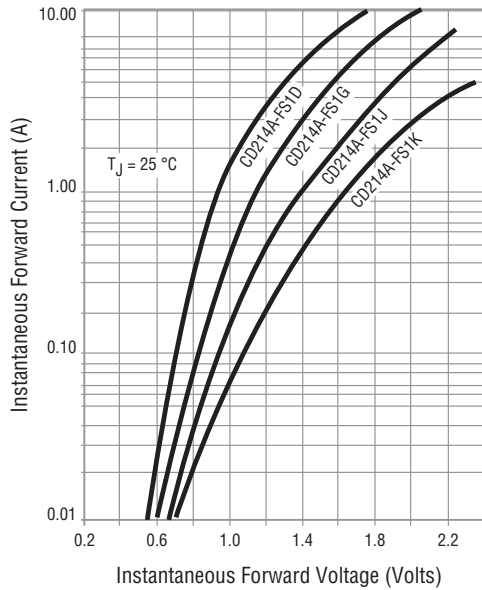
Forward Current Derating Curve



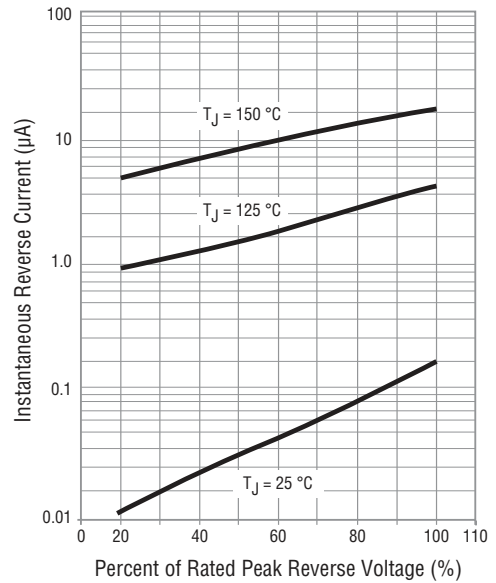
Maximum Peak Forward Surge Current



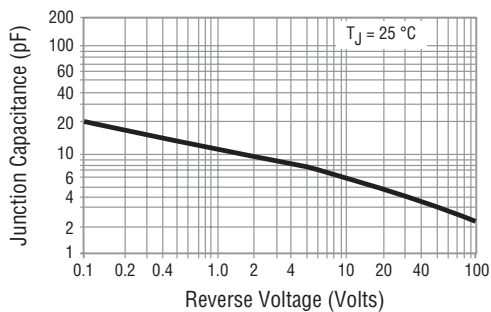
Typical Instantaneous Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance

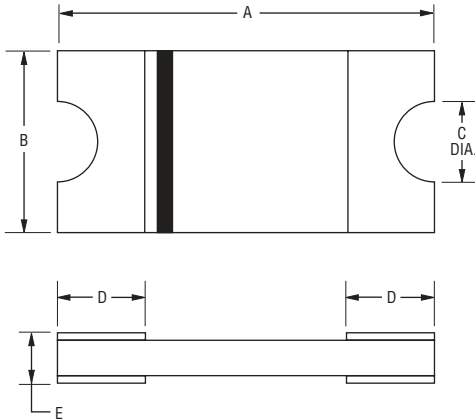


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# CD214A-FS1x Series Fast Response Rectifier Chip Diode



## Product Dimensions



Dimension	CD214A-FS1 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	$\frac{0.96 +0.20/-0.10}{(0.038 +0.008/-0.004)}$

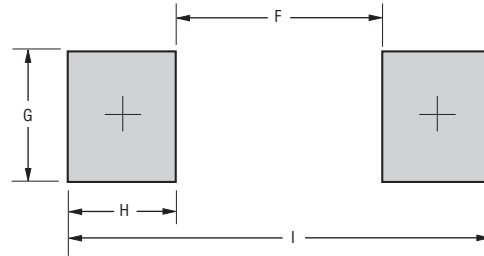
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## How to Order

**CD 214A - FS 1 D**

- Common Code \_\_\_\_\_
- CD = Chip Diode
- Package \_\_\_\_\_
- 214A = SMA/DO-214AC Compatible
- Model \_\_\_\_\_
- FS = 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

## Recommended Pad Layout



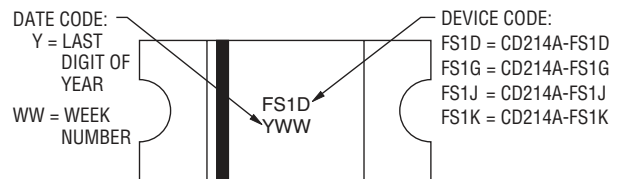
Dimension	CD214A-FS1 Series
F	$\frac{2.60}{(0.102)}$ MAX.
G	$\frac{1.47}{(0.058)}$ MIN.
H	$\frac{1.27}{(0.050)}$ MIN.
I	$\frac{5.14}{(0.202)}$ REF.

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

## Environmental Specifications

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

## Typical Part Marking

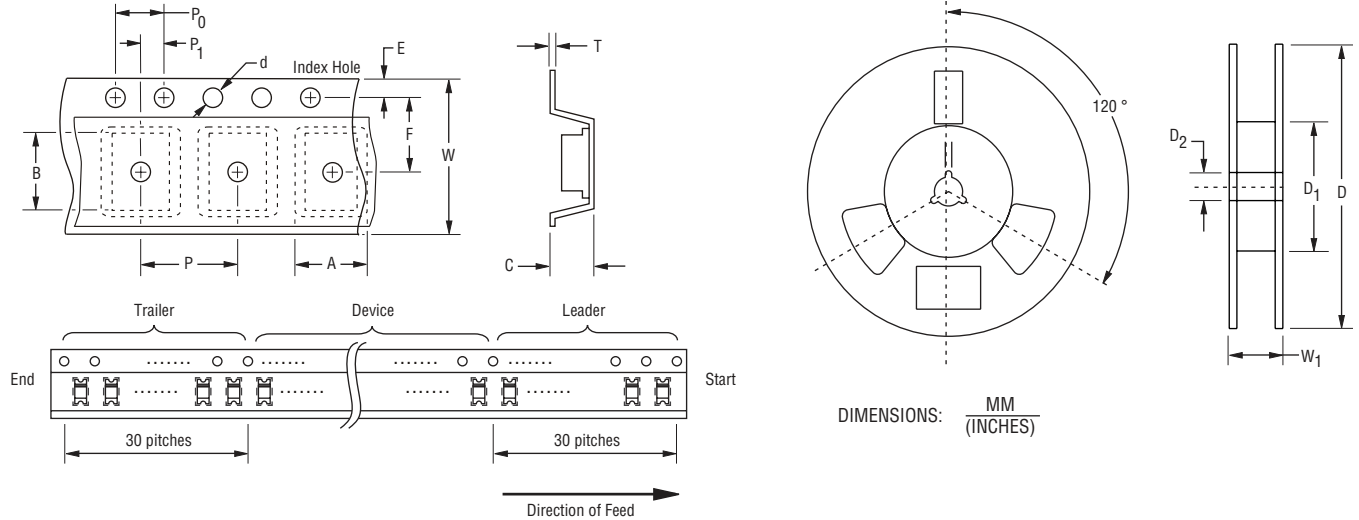


# CD214A-FS1x Series Fast Response Rectifier Chip Diode

**BOURNS®**

## Packaging Information

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



Item	Symbol	CD214A-FS1 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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