

## Features

- RoHS compliant\*
- Low profile
- Low power loss, high efficiency
- UL 94V-0 classification

## Applications

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

# CD214B-FS3x 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-214AA (SMB) size format. The Glass Passivated Rectifier Diodes offer a forward current of 3 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	CD214B-				Unit
		FS3D	FS3G	FS3J	FS3K	
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	200	400	600	800	V
Maximum Average Forward Current	I <sub>F(AV)</sub>	3				A
Maximum Peak Forward Surge Current (8.3 ms Single Half Sine-Wave)	I <sub>FSM</sub>	90				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> = 3 A	CD214B-FS3D		0.93	0.95	V
			CD214B-FS3G		1.2	1.25	
			CD214B-FS3J		1.5	1.7	
			CD214B-FS3K		1.9	2.2	
DC Reverse Current	I <sub>R</sub>	V <sub>R</sub> = V <sub>RRM</sub>			5	μA	
Reverse Recovery Time	T <sub>rr</sub>	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		35		nS	
Typical Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 4 V, f = 1.0 MHz		19		pF	
Typical Thermal Resistance (NOTE 2)	Junction to Ambient	R <sub>θJA</sub>		66		°C/W	
	Junction to Lead	R <sub>θJL</sub>		8			

### 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.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

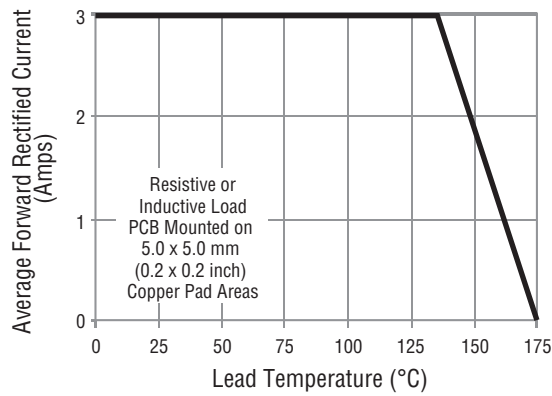
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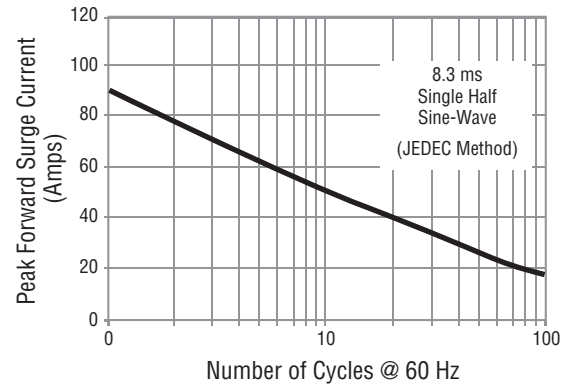
**BOURNS®**

## Performance Graphs

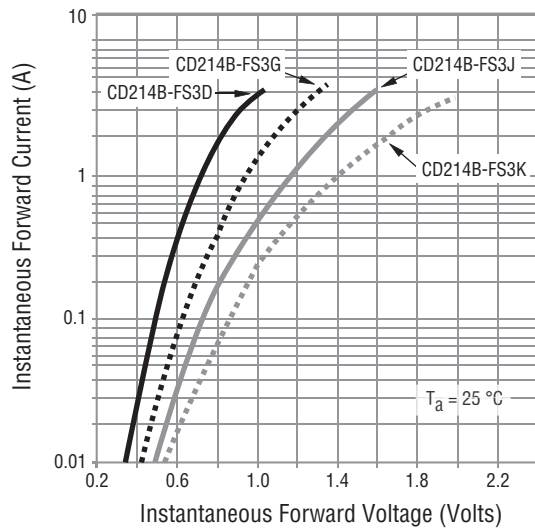
### Forward Current Derating Curve



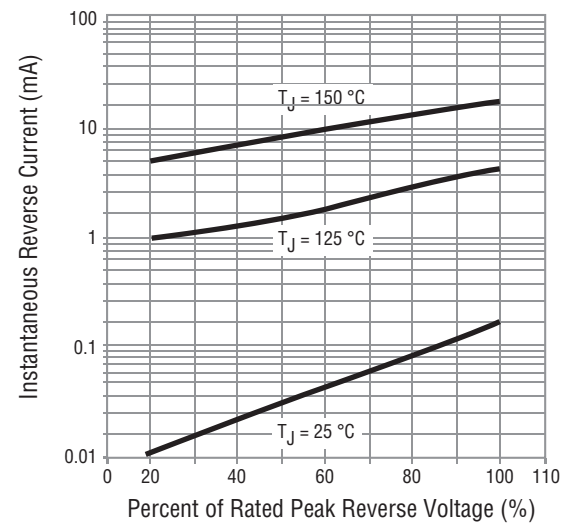
### Max. Peak Forward Surge Current



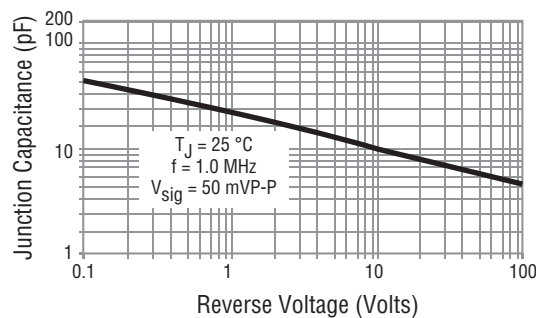
### Typical Instantaneous Forward Characteristics



### Typical Reverse Characteristics



### Typical Junction Capacitance

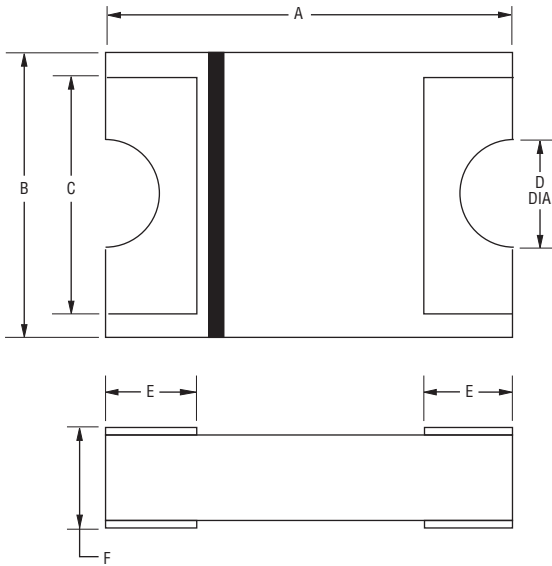


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# CD214B-FS3x Series Fast Response Rectifier Chip Diode



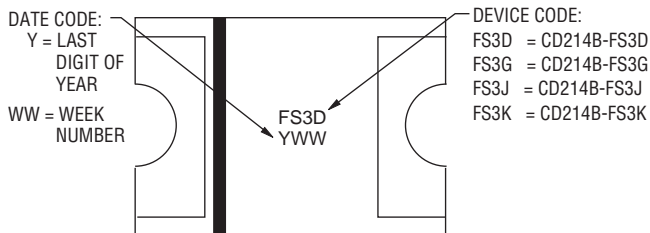
## Product Dimensions



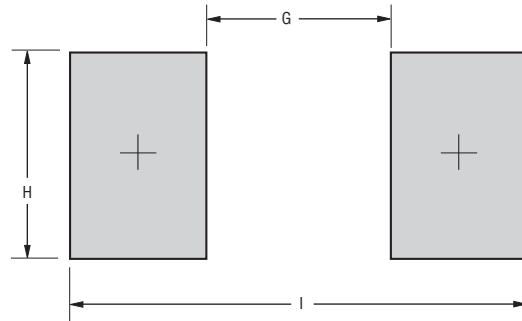
Dimension	CD214B-FS3 Series
A	$\frac{5.20 \pm 0.10}{(0.205 \pm 0.004)}$
B	$\frac{3.60 \pm 0.10}{(0.142 \pm 0.004)}$
C	$\frac{3.01}{(0.119)}$ TYP.
D (Dia.)	$\frac{0.695 \pm 0.015}{(0.027 \pm 0.001)}$
E	$\frac{1.15 \pm 0.1}{(0.045 \pm 0.004)}$
F	$\frac{1.10 \pm 0.15}{(0.043 \pm 0.006)}$

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

## Typical Part Marking



## Recommended Pad Layout



Dimension	CD214B-FS3 Series
G	$\frac{2.65}{(0.104)}$ MAX.
H	$\frac{3.00}{(0.118)}$ MIN.
I	$\frac{6.65}{(0.262)}$ REF.

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

## Environmental Specifications

Moisture Sensitivity Level ..... 1  
ESD Classification (HBM) ..... 3B

## How to Order

Common Code CD 214B - FS 3 D  
 CD = Chip Diode  
 Package 214B = SMB/DO-214AA Compatible  
 Model FS = Fast Response Rectifier  
 Maximum Average Forward Rectified Current 3 = 3 A  
 Maximum Repetitive Peak Reverse Voltage D  
 D = 200 V  
 G = 400 V  
 J = 600 V  
 K = 800 V

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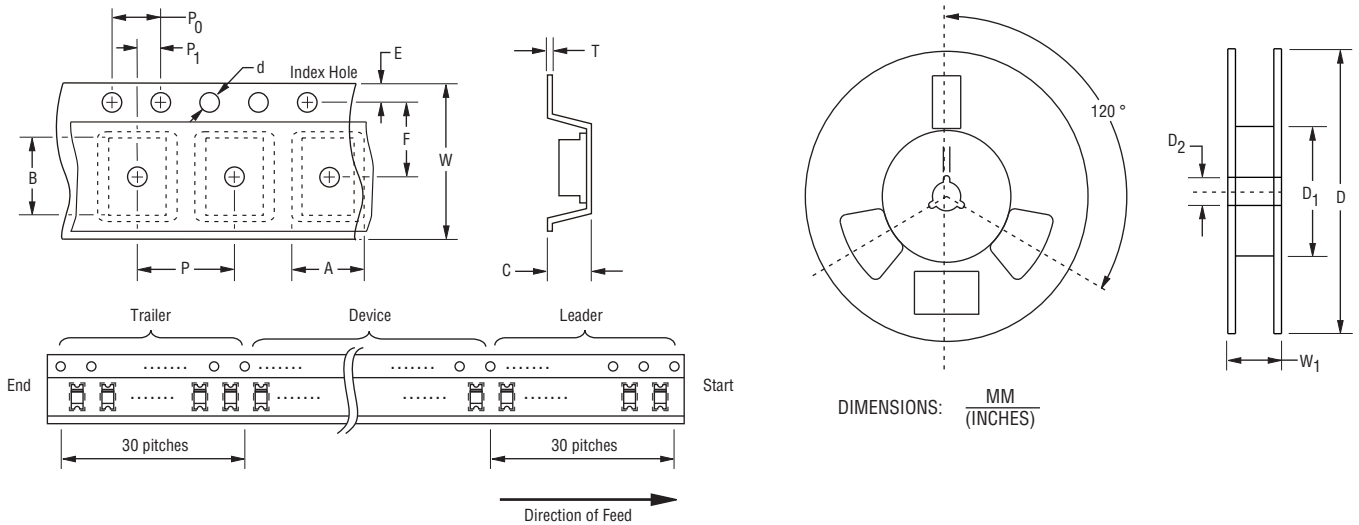
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# CD214B-FS3x Series Fast Response Rectifier Chip Diode

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## Packaging Information

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



Item	Symbol	CD214B-FS3 Series
Carrier Width	A	$\frac{3.70 \pm 0.10}{(0.146 \pm 0.004)}$
Carrier Length	B	$\frac{5.40 \pm 0.10}{(0.213 \pm 0.004)}$
Carrier Depth	C	$\frac{1.65 \pm 0.10}{(0.065 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.50 \pm 0.10}{(0.059 \pm 0.004)}$
Reel Outside Diameter	D	$\frac{330 \pm 2.0}{(12.992 \pm 0.079)}$
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	$\frac{8.00 \pm 0.10}{(0.157 \pm 0.004)}$
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	--	5,000

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