

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

CD214A-B3xR Series Schottky Barrier 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 Schottky Rectifier Diodes for rectification applications, in a compact chip package compatible with DO-214AC (SMA) size format. The Schottky Rectifier Diodes offer a forward current of 3 A with a choice of repetitive peak reverse voltage of 20 V up to 60 V.



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

Parameter	Symbol	CD214A-					Unit
		B320R	B320LR	B340R	B340LR	B360R	
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	20	20	40	40	60	V
Maximum Average Forward Current	I _{F(AV)}	3					A
Maximum Peak Forward Surge Current (8.3 ms Single Half Sine-Wave)	I _{FSM}	80					A
Operating Junction Temperature Range	T _{OPR}	-55 to +125					°C
Storage Temperature Range	T _{STG}	-55 to +150					°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	CD214A-B320R CD214A-B340R		0.37		V
			CD214A-B360R		0.42		
			CD214A-B320LR CD214A-B340LR		0.3		
		I _F = 3 A	CD214A-B320R CD214A-B340R		0.46	0.5	
			CD214A-B360R		0.58	0.7	
			CD214A-B320LR CD214A-B340LR		0.39	0.42	
DC Reverse Current	I _R	V _R = V _{RRM}	CD214A-B320R CD214A-B340R CD214A-B360R		0.02	0.2	mA
			CD214A-B320LR CD214A-B340LR		0.55	1	
Typical Junction Capacitance	C _J	V _R = 4 V, f = 1.0 MHz	CD214A-B320R CD214A-B340R		160		pF
			CD214A-B360R		135		
			CD214A-B320LR CD214A-B340LR		120		

NOTE: (1) Pulse width 300 microsecond, 1 % duty cycle.

Continued on next page.



WARNING Cancer and Reproductive Harm - 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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Electrical Characteristics (@ $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

Parameter		Symbol	Condition or Model	Min.	Typ.	Max.	Unit
Typical Thermal Resistance (NOTE 2)	Junction to Ambient	$R_{\theta JA}$	CD214A-B320R CD214A-B340R CD214A-B360R		86		$^\circ\text{C/W}$
			CD214A-B320LR CD214A-B340LR		55		
	Junction to Lead	$R_{\theta JL}$	CD214A-B320R CD214A-B340R CD214A-B360R		24		
			CD214A-B320LR CD214A-B340LR		17		

NOTE: (2) Mounted on PCB with 5.0 x 5.0 mm (0.2 x 0.2 inch) copper pad areas.

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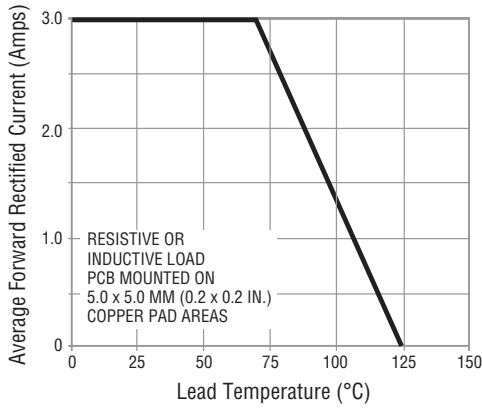
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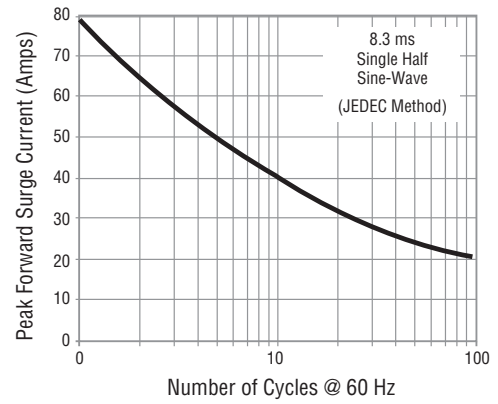


Performance Graphs

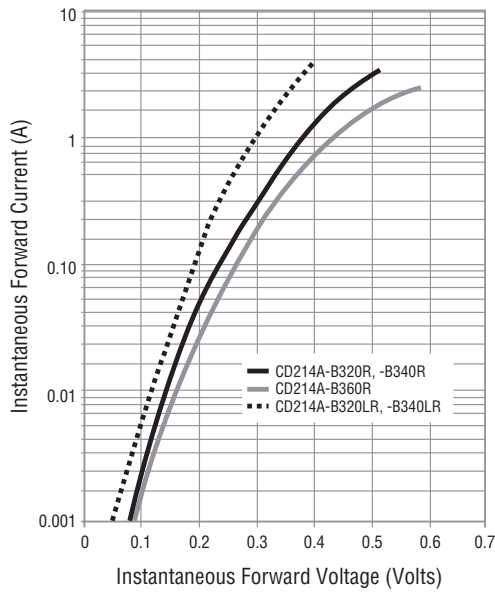
Forward Current Derating Curve



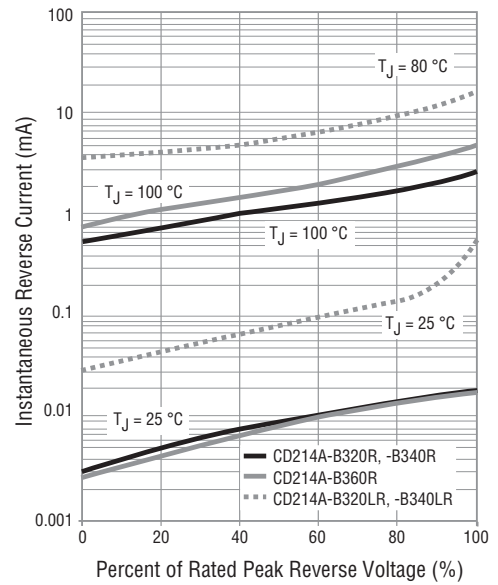
Maximum Peak Forward Surge Current



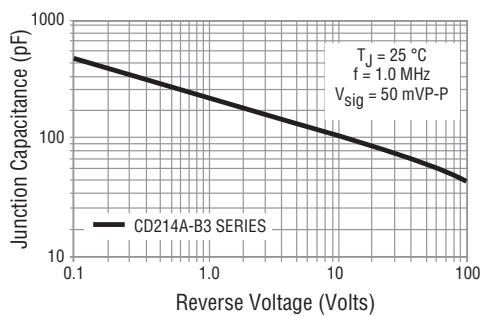
Typical Instantaneous Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance

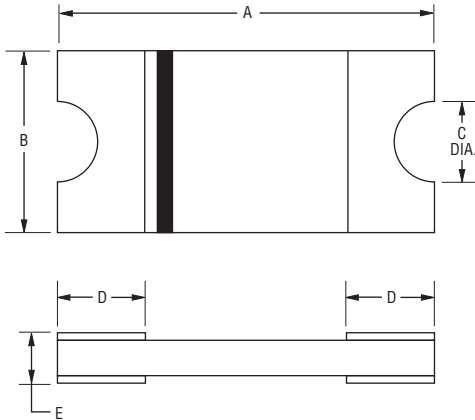


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CD214A-B3xR Series Schottky Barrier Rectifier Chip Diode



Product Dimensions



Dimension	CD214A-B3 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	$\frac{0.96 + 0.20 / - 0.10}{(0.038 + 0.008 / - 0.004)}$

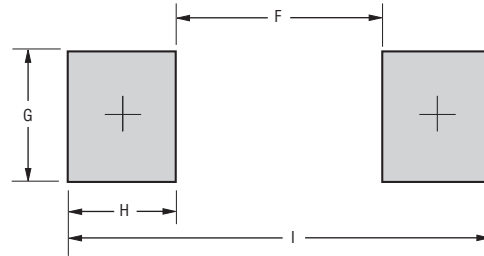
DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

How to Order

CD 214A - B 3 20 L R

- Common Code _____
- CD = Chip Diode
- Package _____
- 214A = SMA/DO-214AC Compatible
- Model _____
- B = Schottky Barrier Series
- Maximum Average Forward Rectified Current _____
- 3 = 3 A
- Maximum Repetitive Peak Reverse Voltage _____
- 20 = 20 V
- 40 = 40 V
- 60 = 60 V
- Forward Voltage Suffix _____
- L = Low Forward Voltage

Recommended Pad Layout



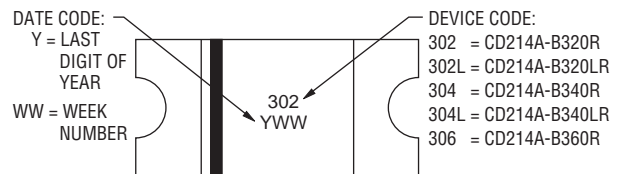
Dimension	CD214A-B3 Series
F	$\frac{2.60}{(0.102)}$ MAX.
G	$\frac{1.47}{(0.058)}$ MIN.
H	$\frac{1.27}{(0.050)}$ MIN.
I	$\frac{5.14}{(0.202)}$ REF.

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

Environmental Specifications

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

Typical Part Marking



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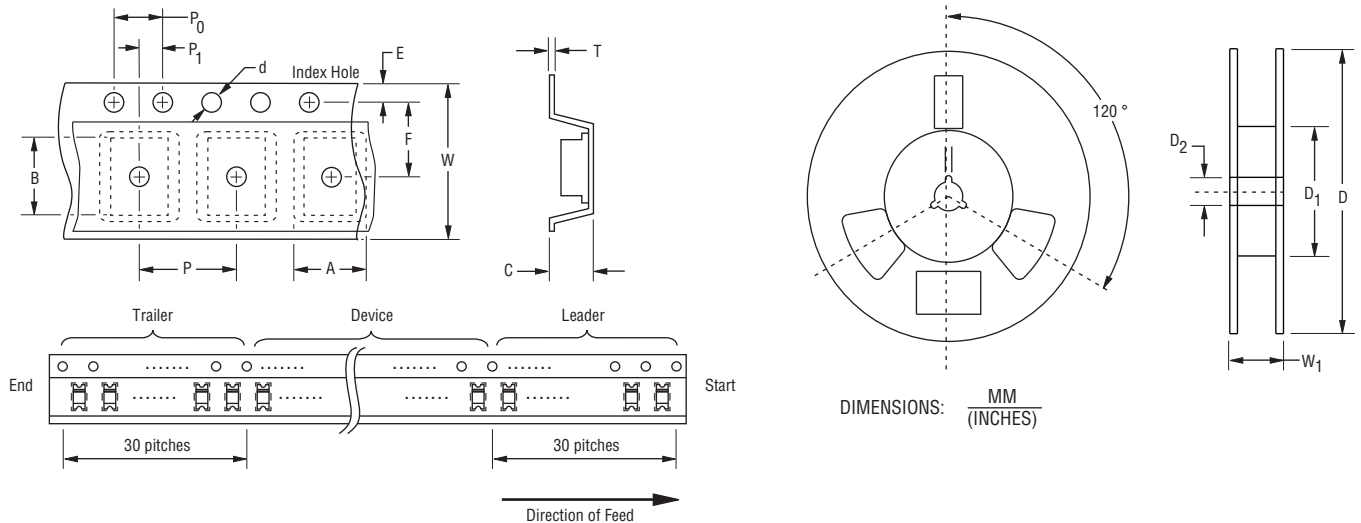
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CD214A-B3xR Series Schottky Barrier Rectifier Chip Diode

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Packaging Information

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



Item	Symbol	CD214A-B3 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

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