

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-B1xR 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 1 A with a choice of repetitive peak reverse voltage of 20 V up to 100 V.



Absolute Maximum Ratings (@ $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	CD214A-						Unit
		B120R	B120LR	B140R	B140LR	B160R	B1100R	
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	20	20	40	40	60	100	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}	-55 to +125				-55 to +150		$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150						$^\circ\text{C}$

Electrical Characteristics (@ $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Condition or Model	Min.	Typ.	Max.	Unit	
Maximum Instantaneous Forward Voltage @ 1 A (NOTE 1)	V_F	CD214A-B120LR CD214A-B140LR		0.37	0.38	V	
		CD214A-B120R CD214A-B140R		0.47	0.50		
		CD214A-B160R		0.60	0.70		
		CD214A-B1100R		0.76	0.85		
DC Reverse Current	I_R	$V_R = V_{RRM}$	CD214A-B120LR CD214A-B140LR		0.35	1.0	mA
			CD214A-B120R CD214A-B140R CD214A-B160R CD214A-B1100R		0.02	0.2	mA
Typical Junction Capacitance	C_J	$V_R = 4\text{ V}, f = 1.0\text{ MHz}$		110		pF	
Typical Thermal Resistance (NOTE 2)	Junction to Ambient	$R_{\theta JA}$	CD214A-B120R CD214A-B140R CD214A-B160R CD214A-B1100R		88	$^\circ\text{C/W}$	
			CD214A-B120LR CD214A-B140LR		55		
	Junction to Lead	$R_{\theta JL}$	CD214A-B120R CD214A-B140R CD214A-B160R CD214A-B1100R		28		
			CD214A-B120LR CD214A-B140LR		17		

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.

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

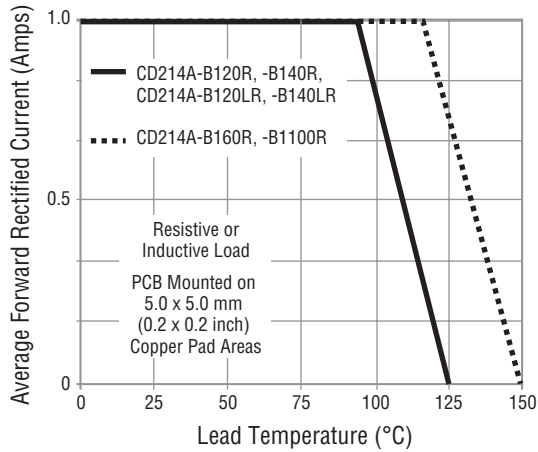
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

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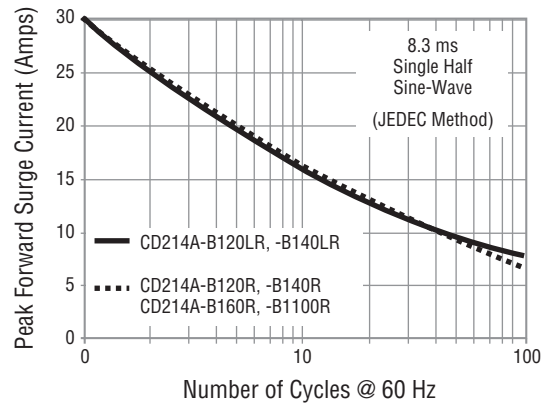


Performance Graphs

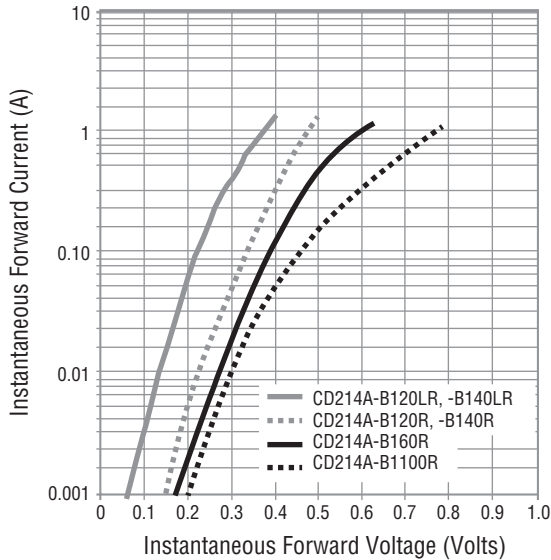
Forward Current Derating Curve



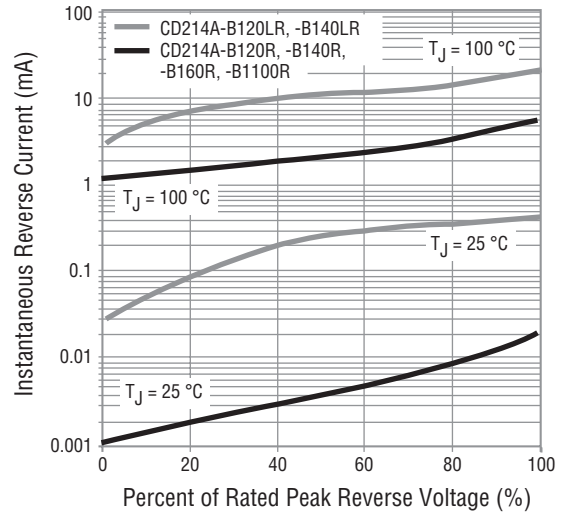
Maximum Peak Forward Surge Current



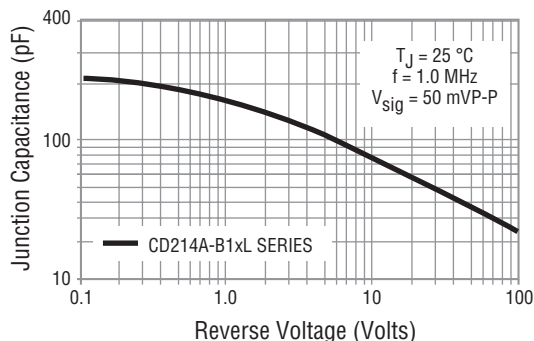
Typical Instantaneous Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance

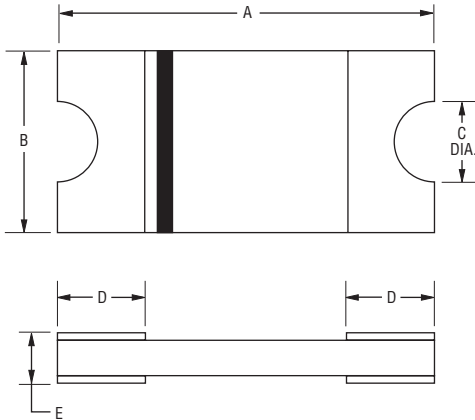


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Product Dimensions



Dimension	CD214A-B1 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 1 20 L R

Common Code _____
 CD = Chip Diode

Package _____
 214A = SMA/DO-214AC Compatible

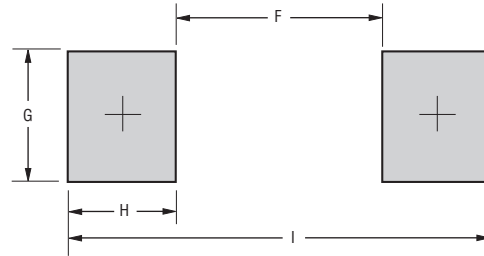
Model _____
 B = Schottky Barrier Series

Maximum Average Forward Rectified Current _____
 1 = 1 A

Maximum Repetitive Peak Reverse Voltage _____
 20 = 20 V
 40 = 40 V
 60 = 60 V
 100 = 100 V

Forward Voltage Suffix _____
 L = Low Forward Voltage

Recommended Pad Layout



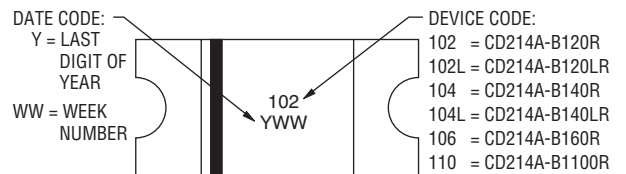
Dimension	CD214A-B1 Series
F	$\frac{2.60}{(0.102)}$ MAX.
G	$\frac{1.47}{(0.058)}$ MIN.
H	$\frac{1.27}{(0.050)}$ MIN.
I	$\frac{5.14}{(0.202)}$ REF.

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

Environmental Specifications

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

Typical Part Marking



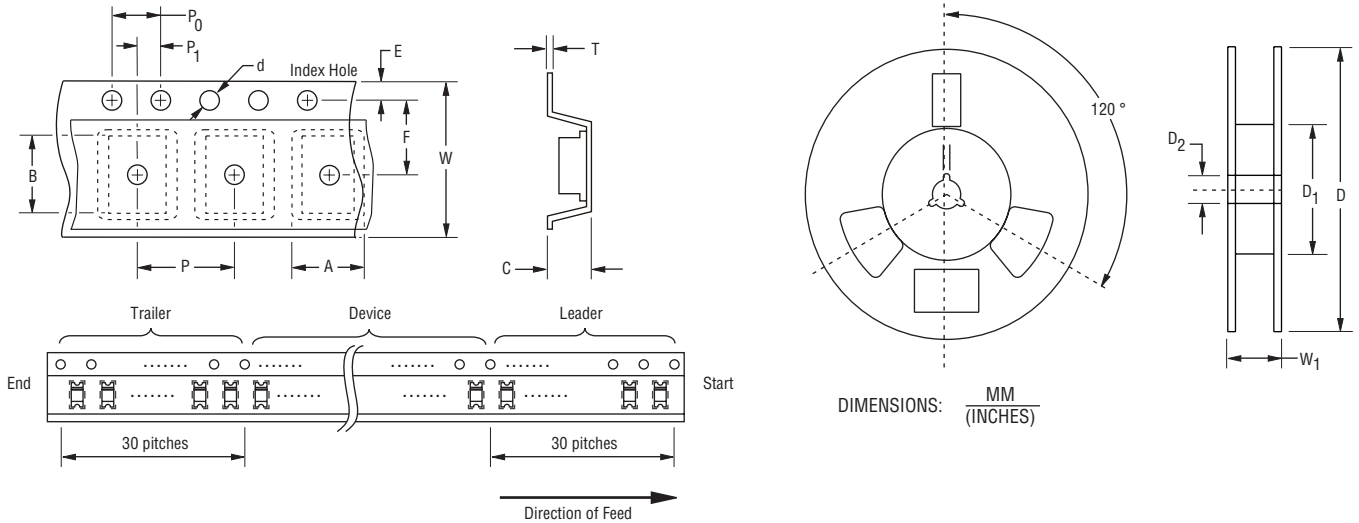
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Packaging Information

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



Item	Symbol	CD214A-B1 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

BOURNS®

Asia-Pacific:

Tel: +886-2 2562-4117
Email: asiacus@bourns.com

Europe:

Tel: +36 88 520 390
Email: eurocus@bourns.com

The Americas:

Tel: +1-951 781-5500
Email: americus@bourns.com

www.bourns.com

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