



Features

- Lead free
- RoHS compliant*
- Reverse voltage from 20 to 60 V
- Forward current of 1 A
- High current capability

- For use in low voltage high frequency inverters, free wheeling and polarity protection applications

CD214B-B120 ~ B160 Schottky Barrier Rectifier Chip Diode

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Schottky Rectifier Diodes for rectification applications, in compact chip package DO-214AA (SMB) size format, which offer PCB real estate savings and are considerably smaller than most competitive parts. The Schottky Rectifier Diodes offer a forward current of 1 A with a choice of repetitive peak reverse voltage of 20 V up to 60 V.

Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and the flat configuration minimizes roll away.

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

Parameter	Symbol	CD214B-					Unit		
		B120	B130	B140	B150	B160			
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	20	30	40	50	60	V		
Maximum RMS Voltage	V_{RMS}	14	21	28	35	42	V		
Maximum DC Blocking Voltage	V_{DC}	20	30	40	50	60	V		
Maximum Average Forward Rectified Current ¹	$I_{(AV)}$	1					A		
DC Reverse Current @ Rated DC Blocking Voltage (@ $T_A = 25^\circ\text{C}$)	I_R	0.5					mA		
DC Reverse Current @ Rated DC Blocking Voltage (@ $T_A = 100^\circ\text{C}$)	I_R	10					mA		
Typical Junction Capacitance ²	C_J	110					pF		
Maximum Instantaneous Forward Voltage @ 1 A	V_F	0.5		0.7		V			
Typical Thermal Resistance ³	$R_{\theta JA}$	22					$^\circ\text{C}/\text{W}$		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30					A		

Notes:

1 See Forward Derating Curve.

2 Measured at 1 MHz and an applied reverse voltage of 4.0 V.

3 Thermal resistance from junction to ambient and from junction to lead P.C.B. mounted on 0.2 x 0.2 " (5.0 x 5.0 mm) copper pad areas.

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

Parameter	Symbol	CD214B-					Unit	
		B120	B130	B140	B150	B160		
Operating Temperature Range	T_J	-55 to +125		-55 to +150		$^\circ\text{C}$		
Storage Temperature Range	T_{STG}	-55 to +150		$^\circ\text{C}$		$^\circ\text{C}$		

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex

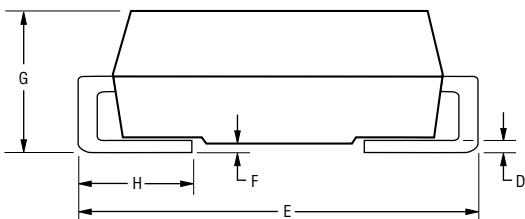
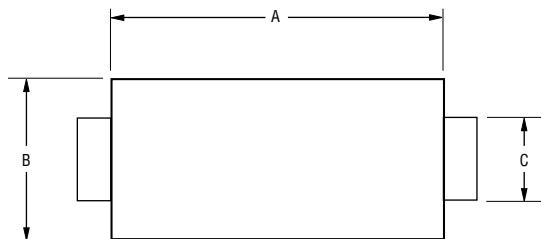
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

CD214B-B120 ~ B160 Schottky Barrier Rectifier Chip Diode

BOURNS®

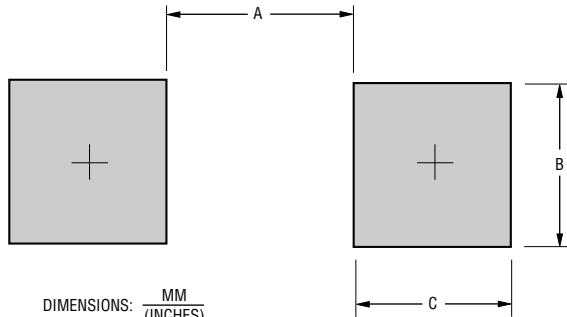
Product Dimensions



Dimension	SMB (DO-214AA)
A	<u>4.06 - 4.57</u> (0.160 - 0.180)
B	<u>3.30 - 3.94</u> (0.130 - 0.155)
C	<u>1.96 - 2.21</u> (0.078 - 0.087)
D	<u>0.15 - 0.31</u> (0.006 - 0.112)
E	<u>5.21 - 5.59</u> (0.205 - 0.220)
F	<u>0.05 - 0.20</u> (0.002 - 0.008)
G	<u>2.01 - 2.62</u> (0.080 - 0.103)
H	<u>0.76 - 1.52</u> (0.030 - 0.060)

DIMENSIONS: MM
(INCHES)

Recommended Pad Layout



DIMENSIONS: MM
(INCHES)

Dimension	SMB (DO-214AA)
A (Max.)	<u>2.69</u> (0.106)
B (Min.)	<u>2.10</u> (0.083)
C (Min.)	<u>1.27</u> (0.050)

Physical Specifications

Case Molded plastic
 Polarity Indicated by cathode band
 Weight 0.003 ounces / 0.093 grams

Typical Part Marking

CD214B-B120 **B 120B**
 CD214B-B130 **B 130B**
 CD214B-B140 **B 140B**
 CD214B-B150 **B 150B**
 CD214B-B160 **B 160B**

How To Order

CD 214B - B 1 30 LF

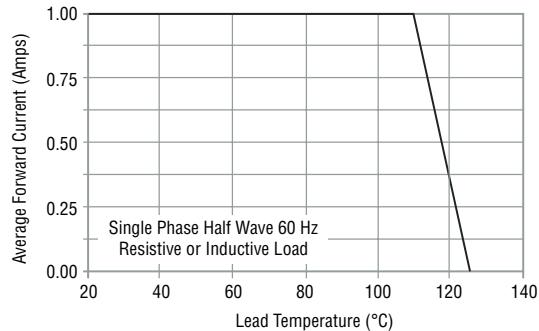
Common Code _____
 Chip Diode _____
 Package _____
 • 214B = SMB/DO-214AA
 Model _____
 B = Schottky Barrier Series
 Average Forward Current (I_F) Code
 1 = 1 A (Code x 1000 mA = Average Forward Current)
 Reverse Voltage (V_R) Code _____
 20 = 20 V
 30 = 30 V
 40 = 40 V
 50 = 50 V
 60 = 60 V
 Terminations _____
 LF = 100 % Sn (lead free)

CD214B-B120 ~ B160 Schottky Barrier Rectifier Chip Diode

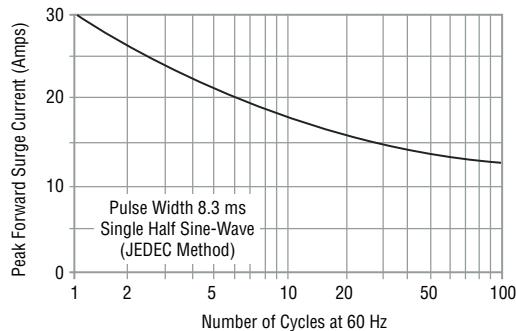
BOURNS®

Rating and Characteristic Curves

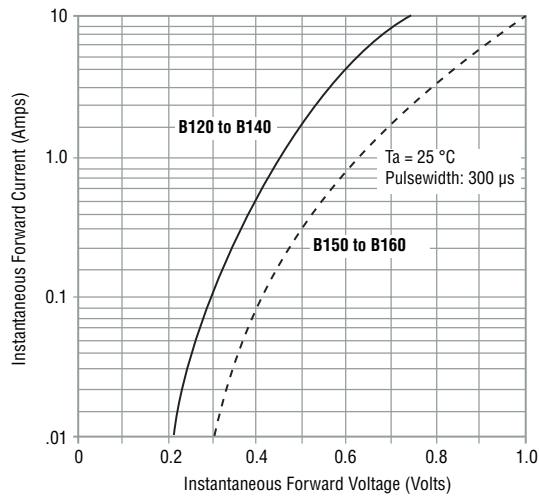
Forward Current Derating Curve



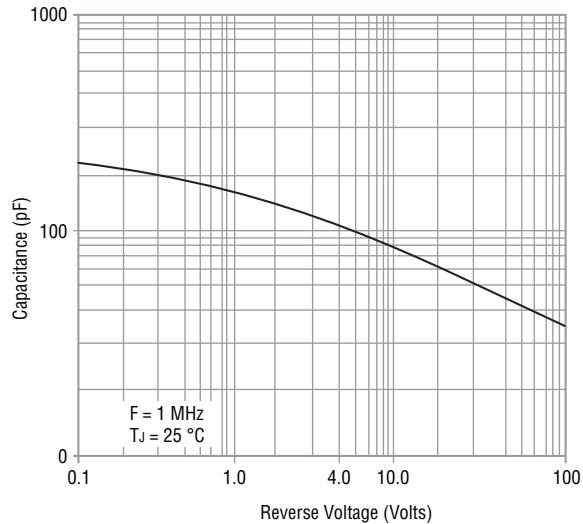
Maximum Non-Repetitive Surge Current



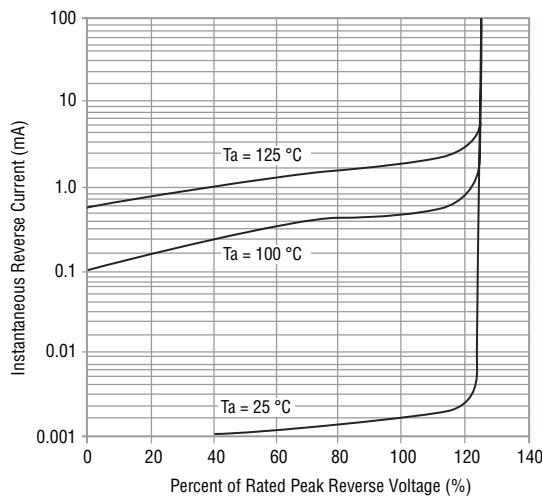
Typical Forward Characteristics



Typical Junction Capacitance



Typical Reverse Characteristics



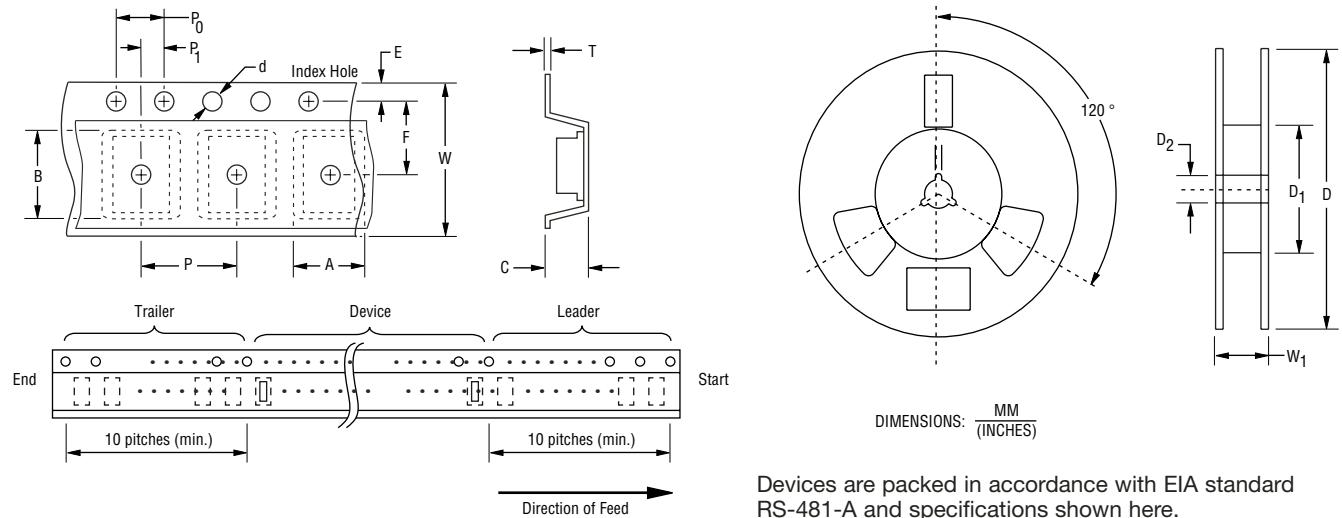
*RoHS Directive 2002/95/EC Jan 27 2003 including Annex
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

CD214B-B120 ~ B160 Schottky Barrier Rectifier Chip Diode

BOURNS®

Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).



Item	Symbol	SMB (DO-214AA)
Carrier Width	A	4.94 ± 0.10 (0.194 - 0.004)
Carrier Length	B	5.57 ± 0.10 (0.219 - 0.004)
Carrier Depth	C	2.36 ± 0.10 (0.093 - 0.004)
Sprocket Hole	d	1.55 ± 0.05 (0.061 - 0.002)
Reel Outside Diameter	D	330 (12.992)
Reel Inner Diameter	D ₁	50.0 MIN. (1.969)
Feed Hole Diameter	D ₂	13.0 ± 0.20 (0.512 - 0.008)
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 - 0.004))
Punch Hole Position	F	5.50 ± 0.05 (0.217 - 0.002)
Punch Hole Pitch	P	4.00 ± 0.10 (0.157 - 0.004)
Sprocket Hole Pitch	P ₀	4.00 ± 0.10 (0.157 - 0.004)
Embossment Center	P ₁	2.00 ± 0.05 (0.079 - 0.002)
Overall Tape Thickness	T	0.30 ± 0.10 (0.012 - 0.004)
Tape Width	W	12.00 ± 0.20 (0.472 - 0.008)
Reel Width	W ₁	18.4 MAX. (0.724)
Quantity per Reel	--	3,000

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex

Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.