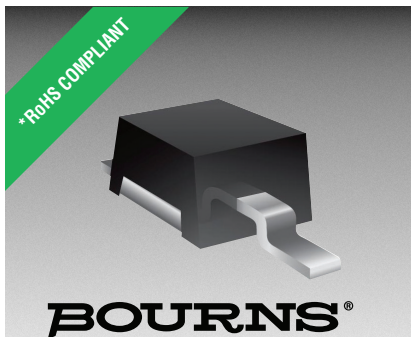




Features

- RoHS compliant*
- Low profile
- Surface mount
- Very low forward voltage drop



This series is currently available, but not recommended for new designs. The [Model CD123D-B Series](#) is the recommended replacement.

CD216A-B120L~B140 MITE 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 DO-216AA size chip package formats, which offer PCB real estate savings and are considerably smaller than competitive parts. The Schottky Barrier Rectifier Diodes offer a forward current of 1 A with a choice of repetitive peak reverse voltage of 20 V up to 40 V.

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

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

Parameter	Symbol	CD216-				Unit
		B120L	B120R	B130L	B140	
Forward Voltage (Max.) ($I_F = 1\text{ A}$)	V_F	0.45	0.53	0.38	0.55	V
Typical Junction Capacitance**	C_T	90	75	70	60	pF
Reverse Current (Max.) (@ Rated V_R)	I_R	400	10	410	500	μA

**Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.

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

Parameter	Symbol	CD216-				Unit
		B120L	B120R	B130L	B140	
Repetitive Peak Reverse Voltage	V_{RRM}	20	20	30	40	V
DC Blocking Voltage	V_{DC}	20	20	30	40	V
RMS Voltage	V_{RMS}	14	14	21	28	V
Average Forward Current @ $T_L = 130^\circ\text{C}$	I_O	1				A
Peak Forward Surge Current***	I_{FSM}	50	50	50	40	A
Max. Instantaneous Forward Voltage**** @ $I_F = 0.1\text{ A}$ @ $I_F = 1.0\text{ A}$ @ $I_F = 2.0\text{ A}$ @ $I_F = 3.0\text{ A}$	V_F	0.34 0.45 0.65	0.455 0.53 0.595	0.30 0.38 0.52	0.36 0.55 0.85	V
Max. Instantaneous Reverse Current @ $V_R = 40\text{ V}$ @ $V_R = 30\text{ V}$ @ $V_R = 20\text{ V}$ @ $V_R = 10\text{ V}$ @ $V_R = 5\text{ V}$	I_R	0.4 0.1	0.0100 0.0010 0.0005	0.41 0.13 0.05	0.50 0.15	mA
Thermal Resistance Junction to Lead (Anode) Junction to Tab (Cathode) Junction to Ambient	$R_{\theta JL}$ $R_{\theta JTAB}$ $R_{\theta JA}$	35 20 250				$^\circ\text{C/W}$
Storage Temperature	T_{STG}	-55 to +150				$^\circ\text{C}$
Junction Temperature	T_J	-55 to +125				$^\circ\text{C}$

***Surge Current 8.3 ms single phase, half sine wave, 60 Hz (JEDEC Method).

****Pulse Test; Pulse Width = 300 μs , Duty Cycle = 2 %.

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific disclaimers as set forth on the last page of this document, and at www.bourns.com/legal/disclaimer.pdf.

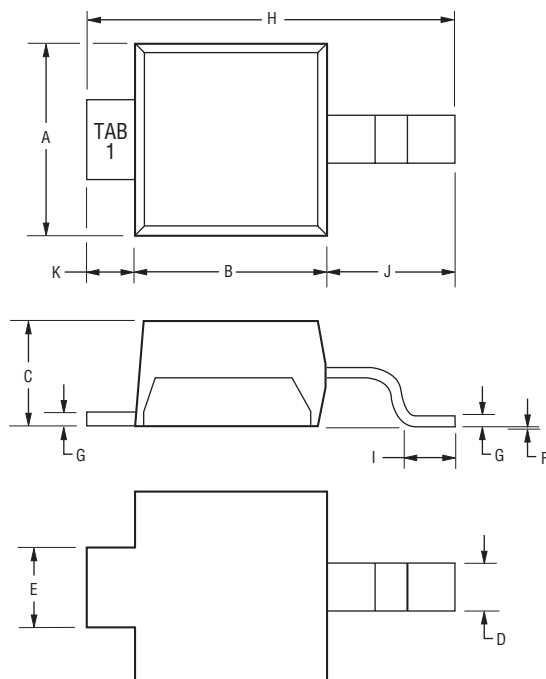
Applications

- Cellular phones
- PDAs
- Desktop PCs and notebooks
- Digital cameras
- MP3 players

CD216A-B120L~B140 MITE Chip Diode

BOURNS®

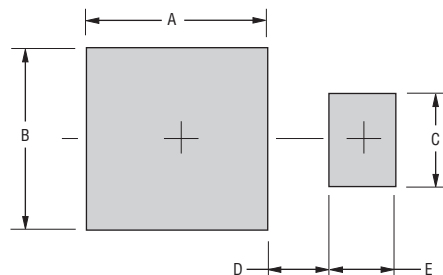
Product Dimensions



Dimension	DO-216AA
A	$\frac{1.75 - 2.05}{(0.069 - 0.081)}$
B	$\frac{1.80 - 2.20}{(0.071 - 0.087)}$
C	$\frac{0.95 - 1.15}{(0.037 - 0.045)}$
D	$\frac{0.42 - 0.68}{(0.017 - 0.027)}$
E	$\frac{0.70 - 1.00}{(0.028 - 0.039)}$
F	$\frac{0.05 - 0.10}{(0.002 - 0.004)}$
G	$\frac{0.10 - 0.25}{(0.004 - 0.010)}$
H	$\frac{3.65 - 3.95}{(0.144 - 0.156)}$
I	$\frac{0.40 - 0.70}{(0.016 - 0.028)}$
J	$\frac{1.10 - 1.50}{(0.043 - 0.059)}$
K	$\frac{0.20 - 0.80}{(0.008 - 0.060)}$

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

Recommended Pad Layout



Dimension	DO-216AA
A	$\frac{2.67}{(0.105)}$
B	$\frac{2.54}{(0.100)}$
C	$\frac{1.27}{(0.050)}$
D	$\frac{0.625}{(0.025)}$
E	$\frac{0.762}{(0.030)}$

Physical Specifications

Case JEDEC 20-216AA Molded plastic
 Polarity..... Cathode designated by TAB 1
 Weight Approximately 0.016 grams
 Mounting Position..... One way

Typical Part Marking

CD216A-B120L B2L
 CD216A-B120R B2E
 CD216A-B130L B3L
 CD216A-B140 B4S

How to Order

CD 216A - B 1 20 L LF

Common Code
 Chip Diode
 Package
 • 216A = DO-216AA
 Model
 B = Schottky Barrier Series
 Average Forward Current (IO) Code
 1 = 1 A (Code x 1000 mA = Average Forward Current)
 Reverse Voltage (VR) Code
 20 = 20 V
 30 = 30 V
 40 = 40 V
 Forward Voltage Suffix
 L = Low Forward Voltage Vf (CD216-B120L, CD216-B130L)
 R = Low Leakage Current IR (CD216-B120R)
 Terminations
 LF = 100 % Sn (RoHS Compliant)

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

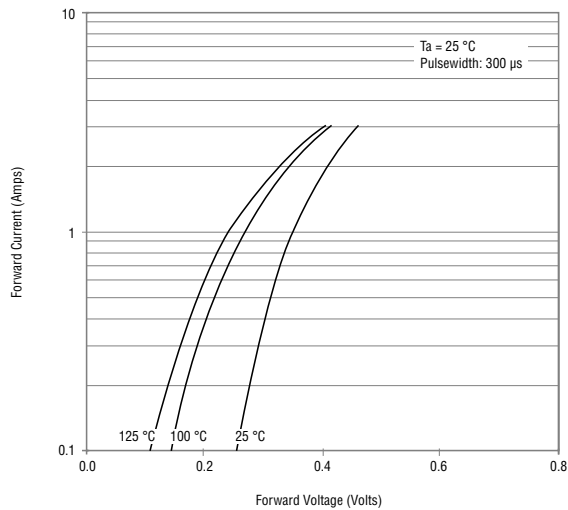
The products described herein and this document are subject to specific disclaimers as set forth on the last page of this document, and at www.bourns.com/legal/disclaimer.pdf.

CD216A-B120L~B140 MITE Chip Diode

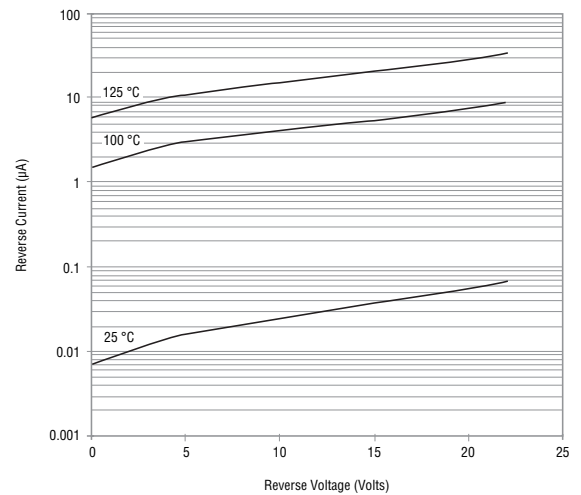
BOURNS®

Rating & Characteristic Curves: CD216A-B120L

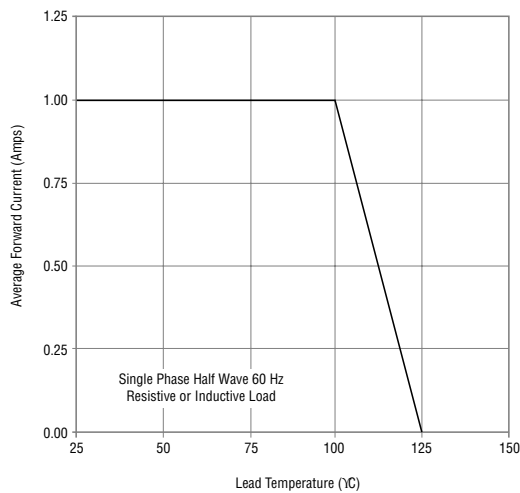
Forward Characteristics



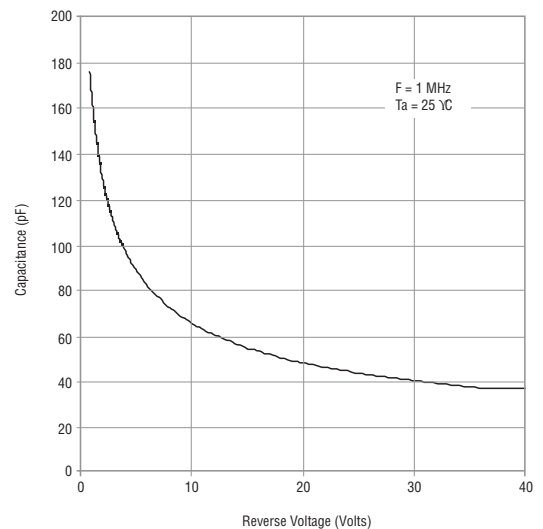
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

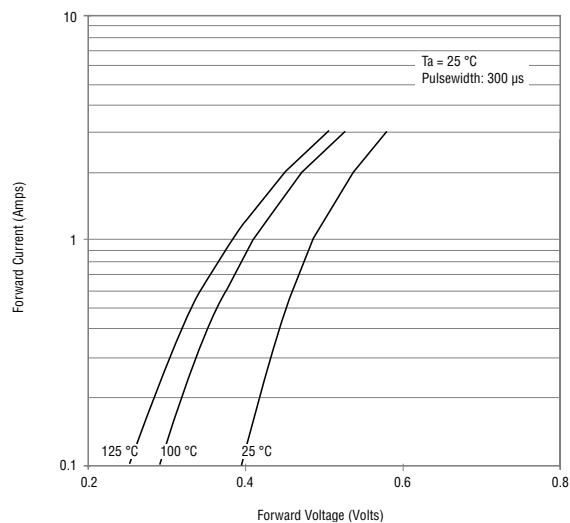
The products described herein and this document are subject to specific disclaimers as set forth on the last page of this document, and at www.bourns.com/legal/disclaimer.pdf.

CD216A-B120L~B140 MITE Chip Diode

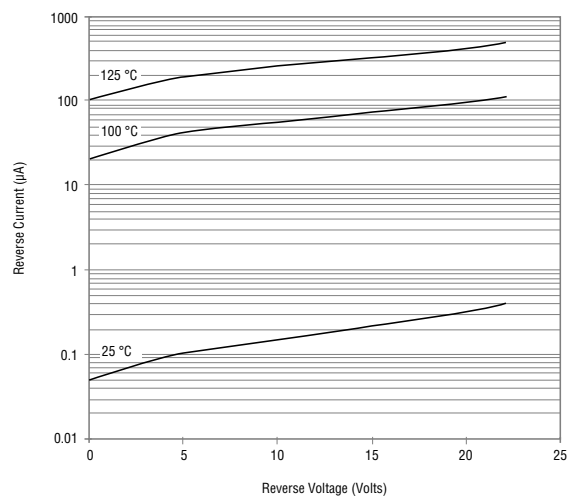
BOURNS®

Rating & Characteristic Curves: CD216A-B120R

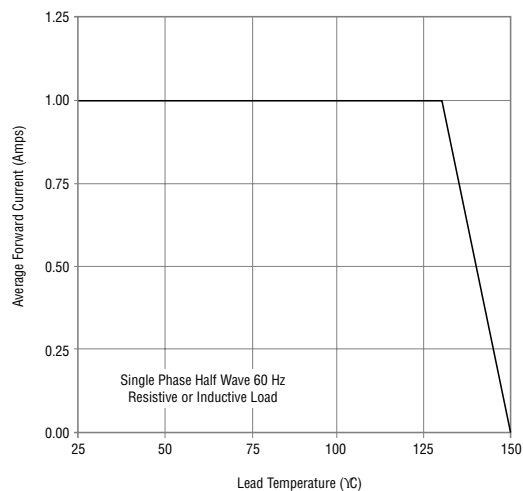
Forward Characteristics



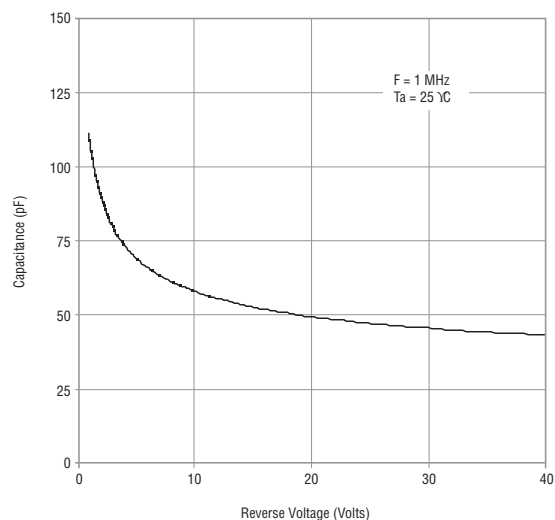
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

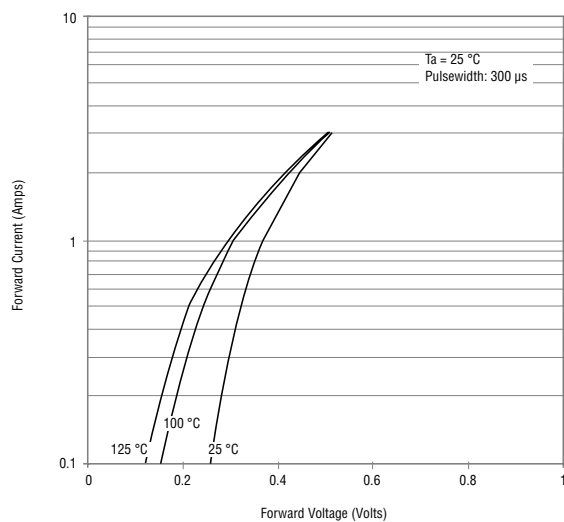
The products described herein and this document are subject to specific disclaimers as set forth on the last page of this document, and at www.bourns.com/legal/disclaimer.pdf.

CD216A-B120L~B140 MITE Chip Diode

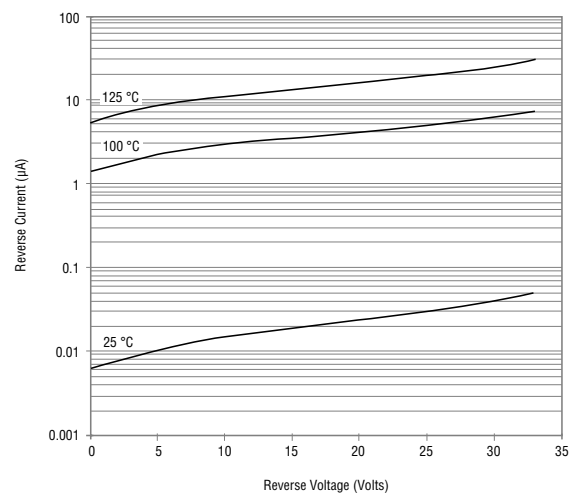
BOURNS®

Rating & Characteristic Curves: CD216A-B130L

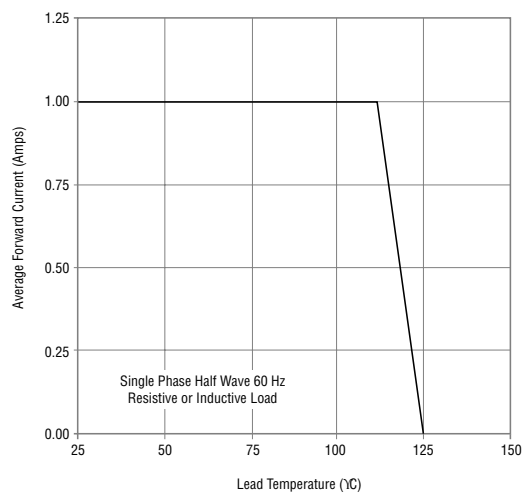
Forward Characteristics



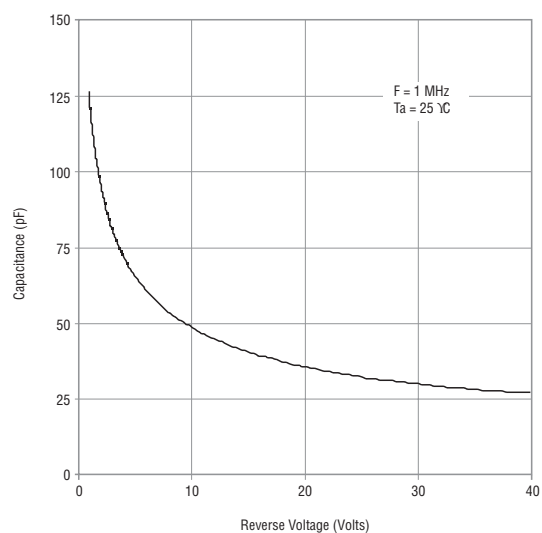
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

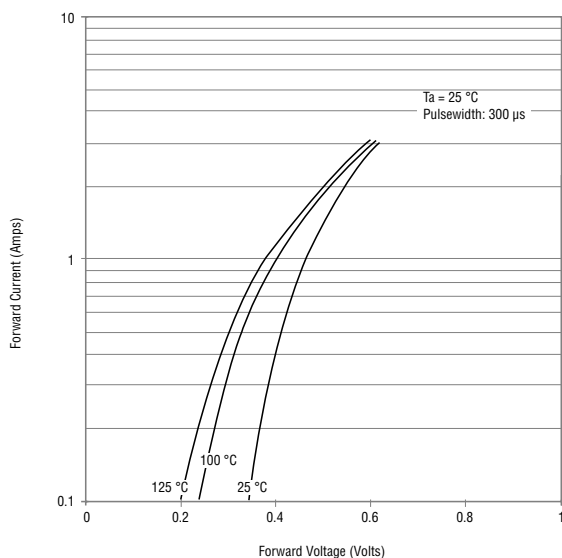
The products described herein and this document are subject to specific disclaimers as set forth on the last page of this document, and at www.bourns.com/legal/disclaimer.pdf.

CD216A-B120L~B140 MITE Chip Diode

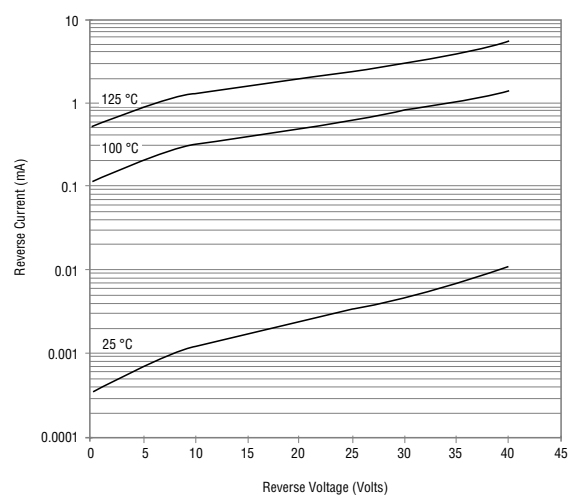
BOURNS®

Rating & Characteristic Curves: CD216A-B140

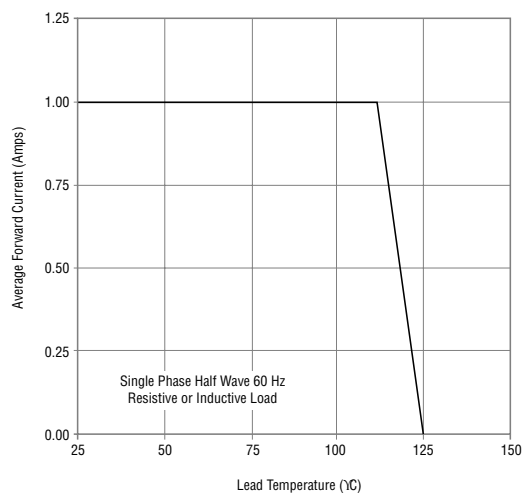
Forward Characteristics



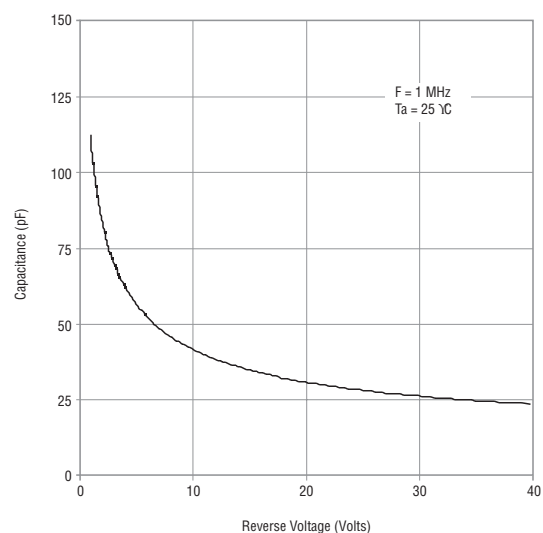
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

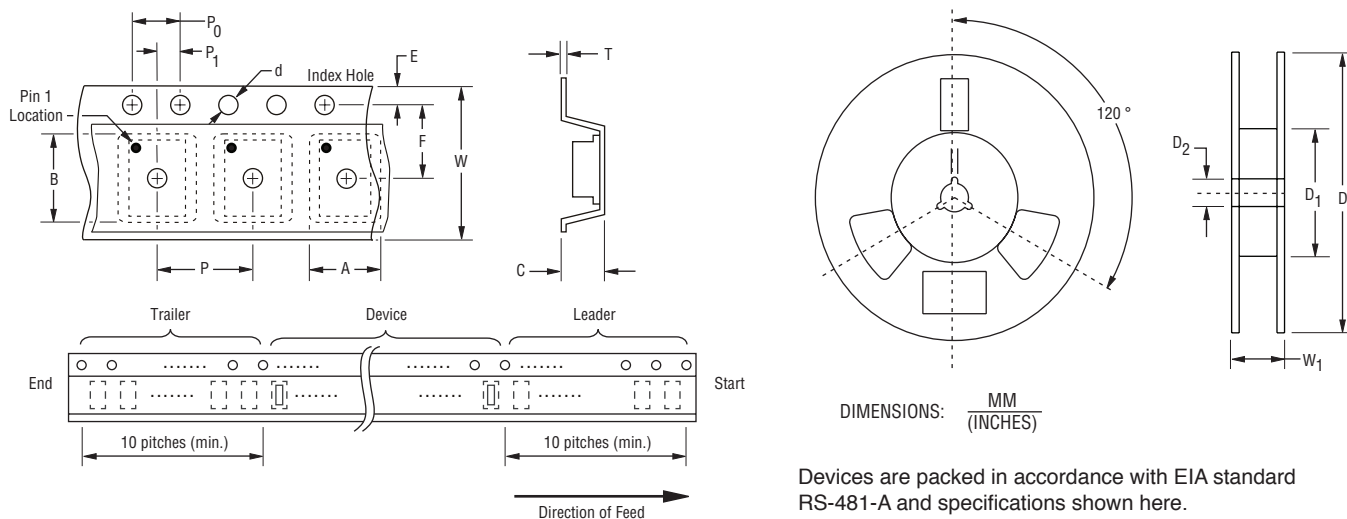
The products described herein and this document are subject to specific disclaimers as set forth on the last page of this document, and at www.bourns.com/legal/disclaimer.pdf.

CD216A-B120L~B140 MITE Chip Diode

BOURNS®

Packaging Information

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



Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	DO-216AA
Carrier Width	A	2.90 ± 0.10 (0.114 ± 0.004)
Carrier Length	B	5.30 ± 0.10 (0.209 ± 0.004)
Carrier Depth	C	1.37 ± 0.10 (0.054 ± 0.004)
Sprocket Hole	d	1.55 ± 0.05 (0.061 ± 0.002)
Reel Outside Diameter	D	178 (7.008)
Reel Inner Diameter	D ₁	75.0 (2.953) MIN.
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	0.40 ± 0.10 (0.016 ± 0.004)
Tape Width	W	12.00 ± 0.20 (0.472 ± 0.008)
Reel Width	W ₁	18.4 (0.724) MAX.
Quantity per Reel	--	3,000

REV. 10/17

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific disclaimers as set forth on the last page of this document, and at www.bourns.com/legal/disclaimer.pdf.

Legal Disclaimer Notice

BOURNS®

This legal disclaimer applies to purchasers and users of Bourns® products manufactured by or on behalf of Bourns, Inc. and its affiliates (collectively, "Bourns").

Unless otherwise expressly indicated in writing, Bourns® products and data sheets relating thereto are subject to change without notice. Users should check for and obtain the latest relevant information before placing orders and should verify that such information is current and complete.

The characteristics and parameters of a Bourns® product set forth in its data sheet are based on laboratory conditions, and statements regarding the suitability of products for certain types of applications are based on Bourns' knowledge of typical requirements in generic applications. The characteristics and parameters of a Bourns® product in a user application may vary from the data sheet characteristics and parameters due to a combination of the Bourns® product with other components in the user's application or due to the environment of the user application itself. Such characteristics and parameters also can and do vary in different applications and actual performance may vary over time. Users should always verify actual performance of the Bourns® product in their specific devices and applications, and make their own independent judgments about how much additional test margin to design in to compensate for differences between laboratory and real world conditions.

Unless Bourns has explicitly designated an individual Bourns® product as meeting the requirements of a particular industry standard (e.g., ISO/TS 16949) or a particular qualification (e.g., UL listed or recognized), Bourns is not responsible for any failure of an individual Bourns® product to meet requirements of such industry standard or such particular qualification. Users of Bourns® products are responsible for ensuring compliance with safety-related requirements and standards applicable to their applications.

Bourns® products are not recommended, authorized or intended for use in nuclear, lifesaving, life-critical or life-sustaining applications, nor in any other applications where failure or malfunction may result in personal injury, death, or severe property or environmental damage. Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any Bourns® products in such unauthorized applications is at the user's sole risk. Life-critical applications include devices identified by the U.S. Food and Drug Administration as Class III devices and generally equivalent classifications outside of the United States.

Bourns® standard products that are designed and tested for use in automotive applications will be described on the applicable data sheets as compliant with the applicable AEC-Q standard. Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any other Bourns® standard products in an automotive application is not recommended, authorized or intended and will be at the user's sole risk.

Bourns® standard products are not tested to comply with United States Federal Aviation Administration standards generally or any other generally equivalent governmental organization standard applicable to products designed or manufactured for use in aircraft or space applications. Bourns® standard products that are designed and tested for use in aircraft or space applications will be described on the applicable data sheets as compliant with the RTCA DO-160 standard. Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any other Bourns® standard product in an aircraft or space application is not recommended, authorized or intended and will be at the user's sole risk.

The use and level of testing applicable to Bourns® custom products shall be negotiated on a case-by-case basis by Bourns and the user for which such Bourns® custom products are specially designed. Absent a written agreement between Bourns and the user regarding the use and level of such testing, the provisions above applicable to Bourns® standard products shall also apply to such Bourns® custom products.

Users shall not sell, transfer, export or re-export any Bourns® products or technology for use in activities which involve the design, development, production, use or stockpiling of nuclear, chemical or biological weapons or missiles, nor shall they use Bourns® products or technology in any facility which engages in activities relating to such devices. The foregoing restrictions apply to all uses and applications that violate national or international prohibitions, including embargos or international regulations. Further, Bourns® products, technology or technical data may not under any circumstance be exported or re-exported to countries subject to international sanctions or embargoes, and Bourns® products may not, without prior authorization from Bourns and/or the U.S. Government, be resold, transferred, or re-exported to any party not eligible to receive U.S. commodities, software, and technical data.

To the maximum extent permitted by applicable law, Bourns disclaims (i) any and all liability arising out of the application or use of any Bourns® standard product, (ii) any and all liability, including, without limitation, special, punitive, consequential or incidental damages, and (iii) any and all implied warranties, including implied warranties of fitness for particular purpose, non-infringement and merchantability.

For your convenience, copies of this Legal Disclaimer Notice with German, Spanish, Japanese, Traditional Chinese and Simplified Chinese bilingual versions are available at:

Web Page: <http://www.bourns.com/legal/disclaimers-terms-and-policies>

PDF: <http://www.bourns.com/docs/Legal/disclaimer.pdf>