

*RoHS COMPLIANT



BOURNS®

Features

- Lead free
- RoHS compliant*
- Low profile package
- 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.

CD1607-B140 / B140L 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 1607 (Mini-SMA) size format, which offer PCB real estate savings and are considerably smaller than competitive parts. The Schottky Rectifier Diodes offer a forward current of 1 A with a repetitive peak reverse voltage of 40 V.

Bourns® Chip Diodes conform to JEDEC standards, easy to handle on standard pick and place equipment and their flat configuration makes roll away much more difficult.

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CD1607-		Unit
		B140	B140L	
Forward Voltage (Max.) (I _f = 1 A)	V _F	0.5	0.4	V
Typical Junction Capacitance*	C _T	110	110	pF
Reverse Current (Max.) at Rated V _R	I _R	0.5	1.0	mA

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

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

Parameter	Symbol	CD1607-		Unit
		B140	B140L	
Repetitive Peak Reverse Voltage	V _{RRM}	40	40	V
Reverse Voltage	V _R	40	40	V
Maximum RMS Voltage	V _{RMS}	28	28	V
Avg. Forward Current	I _O	1		A
Forward Current, Surge Peak (60 Hz, 1 cycle)	I _{surge}	* 0 3		A
Typical Thermal Resistance**	R _{θJL}	0 2		W / °C
Storage Temperature	T _{STG}	0 5 1 + o t 5 5 -		C °
Junction Temperature	T _J	5 2 1 + o t 5 5 -		C °

** Thermal resistance junction to lead.

* Condition: 8.3 ms single half sine-wave superimposed on rate load (JEDEC method).

How To Order

CD 1607 - B 1 40 L LF

Common Code _____
Chip Diode

Package _____
• 1607 = Mini-SMA

Model _____
B = Schottky Barrier Series

Average Forward Current (I_O) Code _____
1 = 1 A (Code x 1000 mA = Average Forward Current)

Reverse Voltage (V_R) Code _____
40 = 40 V

Forward Voltage Suffix _____
L = Low Forward Voltage V_f

Terminations _____
LF = 100 % Sn (lead free)

*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.

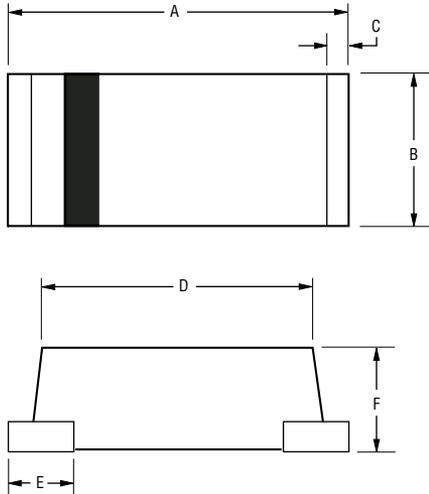
The products described herein and this document are subject to specific disclaimers as set forth on the last page of this document, and at www.bourns.com/legal/disclaimer.pdf.

Applications

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

CD1607-B140 / B140L Schottky Barrier Rectifier Chip Diode **BOURNS®**

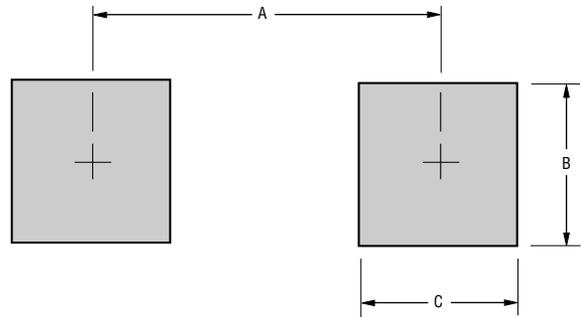
Product Dimensions



Dimension	Mini-SMA
A	$\frac{3.70 - 4.10}{(0.146 - 0.161)}$
B	$\frac{1.40 - 1.80}{(0.055 - 0.071)}$
C	$\frac{0.30}{(0.012)}$ TYP.
D	$\frac{2.40 - 2.80}{(0.094 - 0.110)}$
E	2 PLCS. $\frac{0.90}{(0.035)}$ TYP.
F	$\frac{1.40 - 1.60}{(0.055 - 0.063)}$

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

Recommended Pad Layout



Dimension	Mini-SMA
A (Max.)	$\frac{3.50}{(0.138)}$
B (Min.)	$\frac{1.50}{(0.059)}$
C (Min.)	$\frac{1.50}{(0.059)}$

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

Physical Specifications

Case.....1607 Molded plastic
 PolarityColor band denotes cathode end
 Terminals.....Solderable per MIL-STD-750, Method 206
 WeightApproximately 0.04 grams

Typical Part Marking

CD1607-B140I4
 CD1607-B140LI4

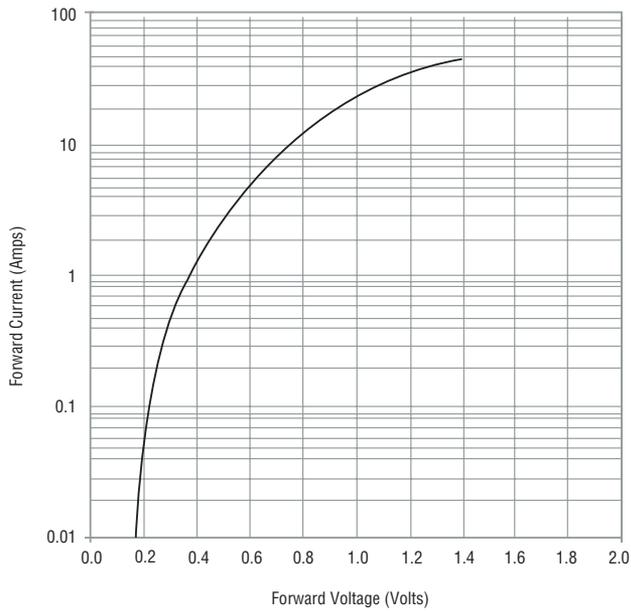
Specifications are subject to change without notice.
 The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
 Users should verify actual device performance in their specific applications.

CD1607-B140 / B140L Schottky Barrier Rectifier Chip Diode

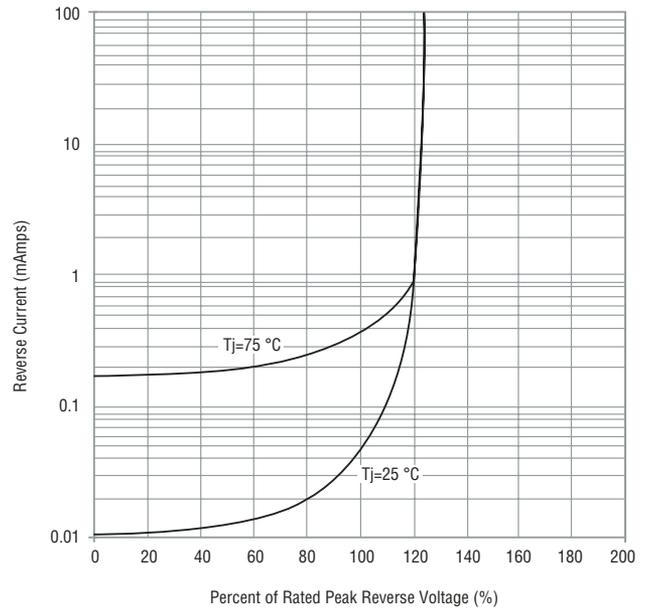


Rating and Characteristic Curves: CD1607-B140

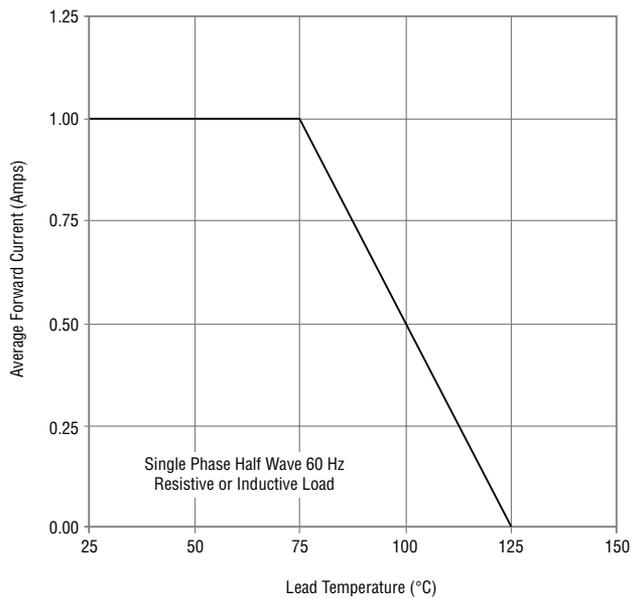
Forward Characteristics



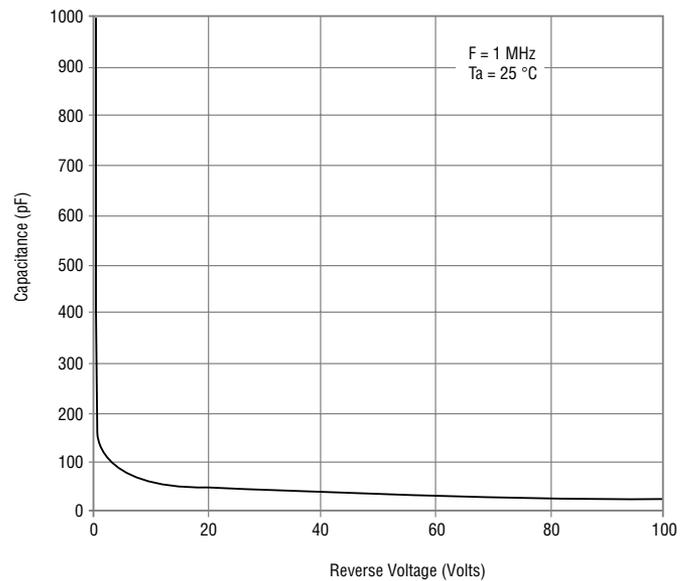
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



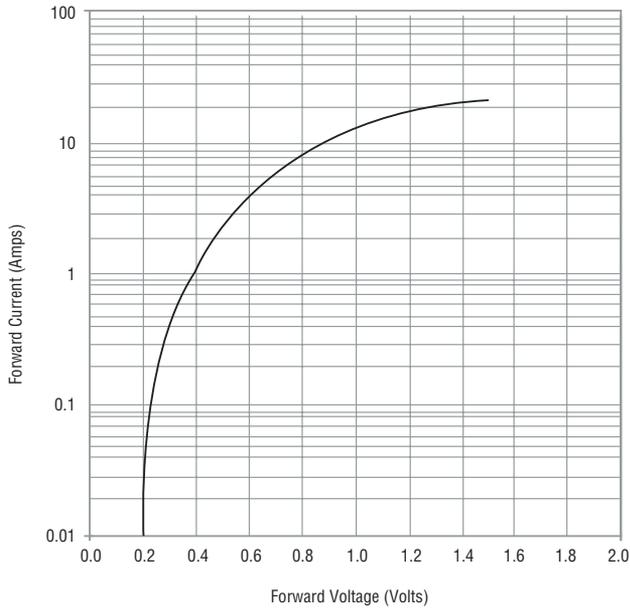
Specifications are subject to change without notice.
 The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
 Users should verify actual device performance in their specific applications.

CD1607-B140 / B140L Schottky Barrier Rectifier Chip Diode

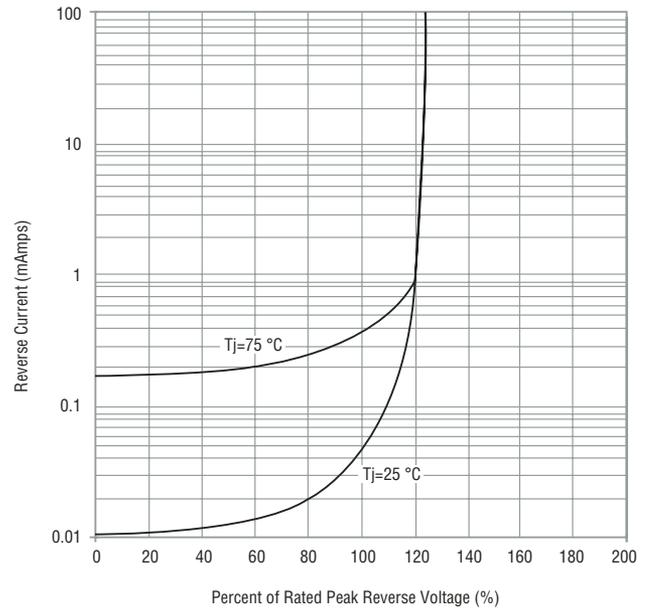


Rating and Characteristic Curves: CD1607-B140L

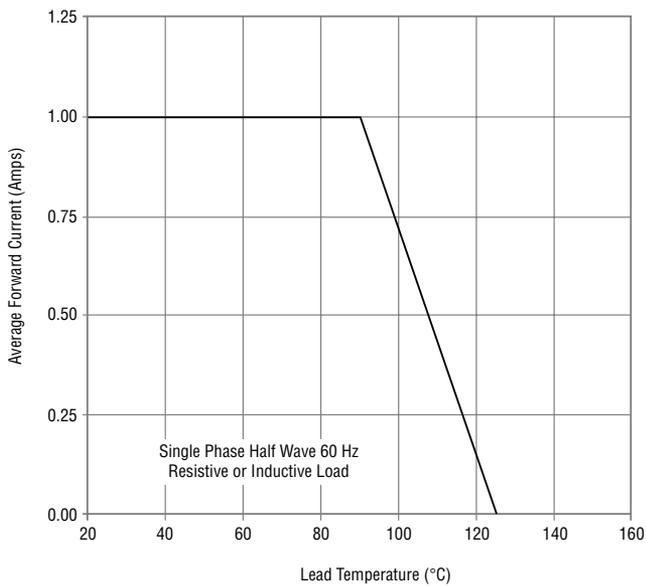
Forward Characteristics



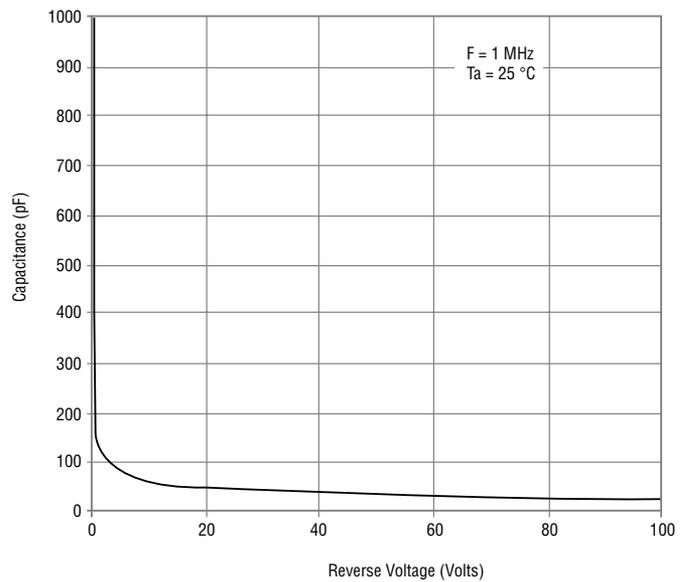
Reverse Characteristics



Derating Curve



Capacitance Between Terminals



Specifications are subject to change without notice.

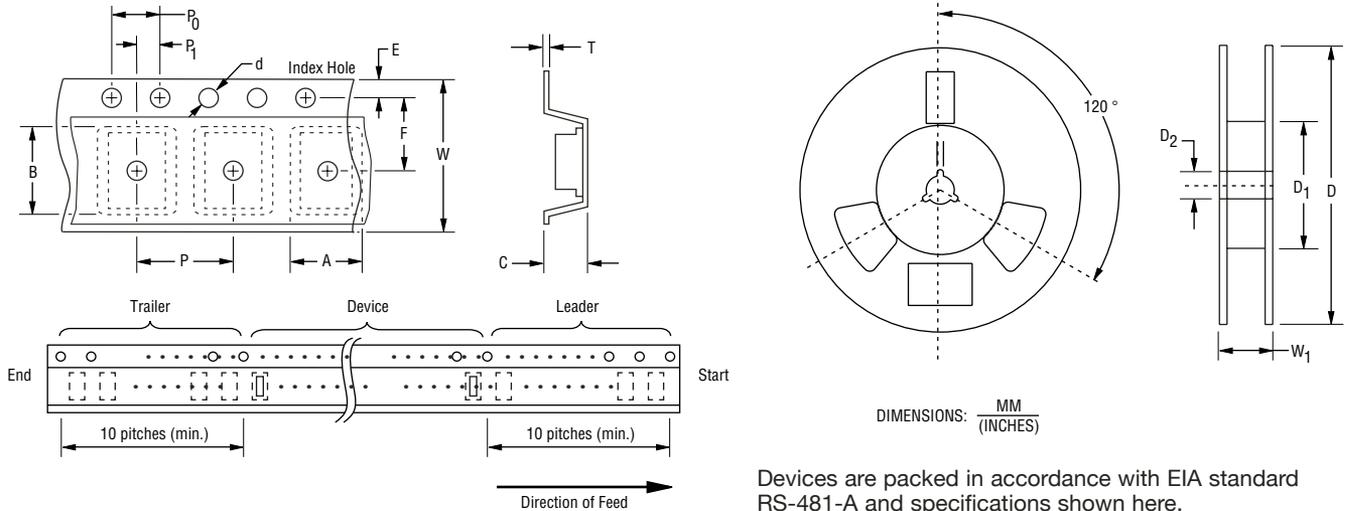
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

CD1607-B140 / B140L Schottky Barrier Rectifier Chip Diode

BOURNS®

Packaging Information

The product will be 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	1607
Carrier Width	A	$\frac{1.90 \pm 0.10}{(0.075 - 0.004)}$
Carrier Length	B	$\frac{4.30 \pm 0.10}{(0.169 - 0.004)}$
Carrier Depth	C	$\frac{1.80 \pm 0.10}{(0.071 - 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 - 0.002)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$
Reel Inner Diameter	D ₁	$\frac{80.0}{(3.150)}$ MIN.
Feed Hole Diameter	D ₂	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.10}{(0.008 - 0.004)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$
Reel Width	W ₁	$\frac{13.5}{(0.531)}$ MAX.
Quantity per Reel	--	2,500

REV. 10/17

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.

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>