

**TRENCH SCHOTTKY BARRIER RECTIFIER
SMA**
Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _{F(MAX)} (V)	I _{R(MAX)} (mA)
60	1	0.60	0.2

Applications

For use in low-voltage, high-frequency inverters, freewheeling, DC-DC converters, and polarity applications.

- SMPS
- AC-DC
- DC-DC converters
- Freewheeling diodes
- Reverse polarity protections
- Blocking diodes

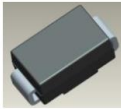
Features and Benefits

- Low Leakage Current
- Soft, Fast Switching Capability
- +150°C Operating Junction Temperature
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com/quality/product-definitions/) or your local Diodes representative.**

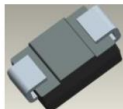
Mechanical Data

- Package: SMA
- Package Material: Molded Plastic, “Green” Molding Compound. UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 (63)
- Polarity Indicator: Cathode Band
- Weight: 0.064 grams (Approximate)

SMA



Top View

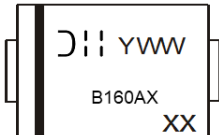


Bottom View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
B160AX-13	SMA	5,000	Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information (Note 5)


B160AX = Product Type Marking Code
 ⑆⑆⑆ = Manufacturer's Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 3 for 2023)
 WW = Week Code 01 to 52
 XX = Foundry and Assembly Site

Note: 5. Device has a cathode band (as shown) and may also have a cathode notch.

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _R RM	60	V
Working Peak Reverse Voltage	V _R WM		
DC Blocking Voltage	V _R M		
Average Rectified Output Current	I _O	1	A
Non-Repetitive Peak Forward Surge Current 1ms Single Half Sine Wave Superimposed on Rated Load	I _{FSM}	20	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient (Note 6)	R _{θJA}	80	°C/W
Thermal Resistance Junction to Case (Note 6)	R _{θJC}	30	
Operating and Storage Temperature Range (Note 6)	T _J , T _{STG}	-55 to +150	°C

Note: 6. Device mounted on FR-4 substrate, 0.4" x 0.5", 2oz, single-sided PC boards with 0.2" x 0.25" copper pad. The heat generated must be less than the thermal conductivity from junction to case: $dP_D / dT_J < 1 / R_{\theta JC}$ or junction to ambient: $dP_D / dT_J < 1 / R_{\theta JA}$.

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V _F	0.50	0.60	V	I _F = 1.0A, T _J = +25°C
		0.45	—		I _F = 1.0A, T _J = +125°C
Leakage Current (Note 7)	I _R	6	200	μA mA	V _R = 60V, T _J = +25°C
		0.5	22		V _R = 60V, T _J = +100°C

Note: 7. Short duration pulse test used to minimize self-heating effect.

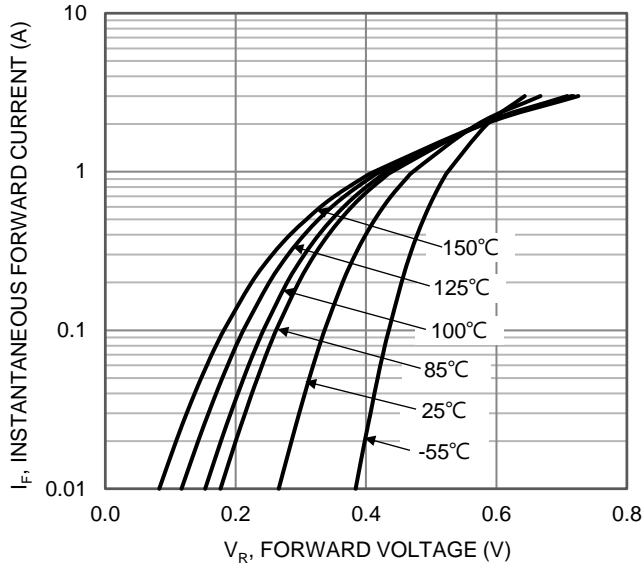


Figure 1. Typical Forward Characteristics

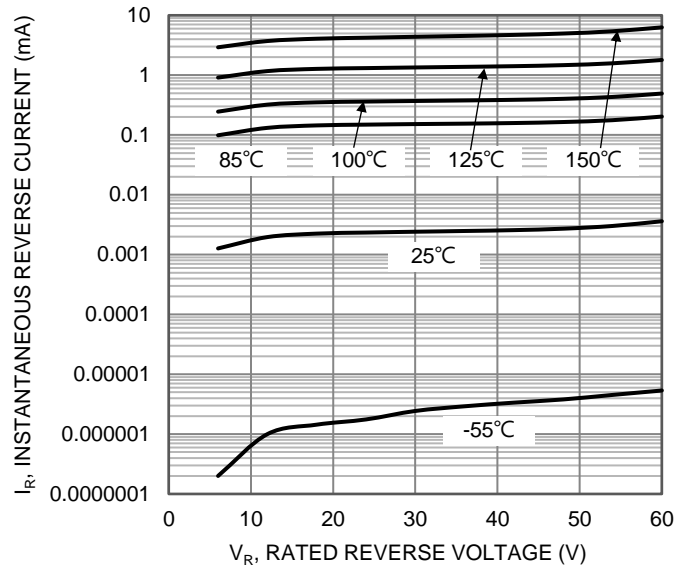


Figure 2. Typical Reverse Characteristics

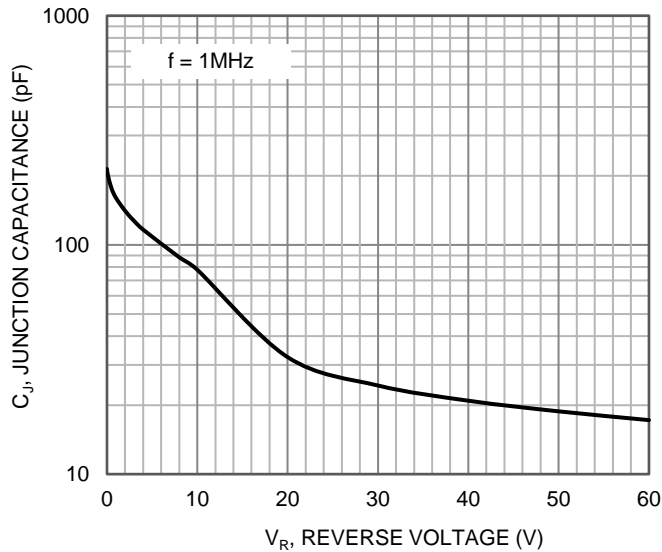


Figure 3. Junction Capacitance vs. Reverse Voltage

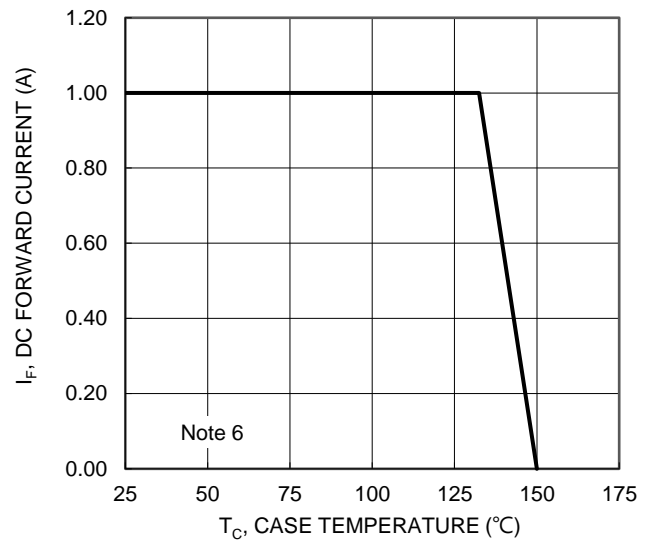
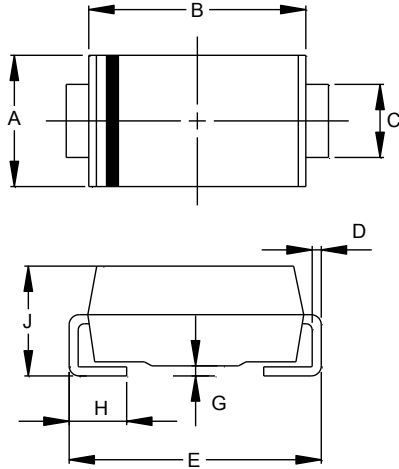


Figure 4. DC Forward Current Derating

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMA

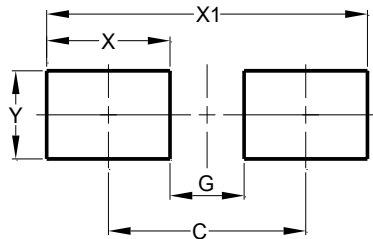


SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMA



Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

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