B240AX

2A
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)
40	2	0.50	0.25

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 or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

Description and Applications

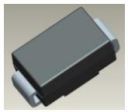
For use in low-voltage, high-frequency inverters, freewheeling, DC-DC converters, and polarity applications.

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

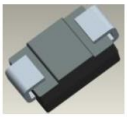
Mechanical Data

- 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 e3
- Polarity Indicator: Cathode Band
- Weight: 0.064 grams (Approximate)

SMA



Top View



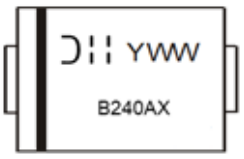
Bottom View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
B240AX-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)



B240AX = 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)

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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	40	V
Average Rectified Output Current	I_O	2	A
Non-Repetitive Peak Forward Surge Current 1ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	35	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient (Note 6) Thermal Resistance Junction to Case (Note 6)	$R_{\theta JA}$ $R_{\theta JC}$	80 30	°C/W
Operating and Storage Temperature Range	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	0.43 0.37	0.50 —	V	I_F = 2.0A, T_J = +25°C I_F = 2.0A, T_J = +125C
Leakage Current (Note 7)	I_R	25 —	250 20	µA mA	V_R = 40V, T_J = +25°C V_R = 40V, T_J = +100°C
Junction Capacitance	C_J	220	—	pF	V_R = 4V, f = 1MHz

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

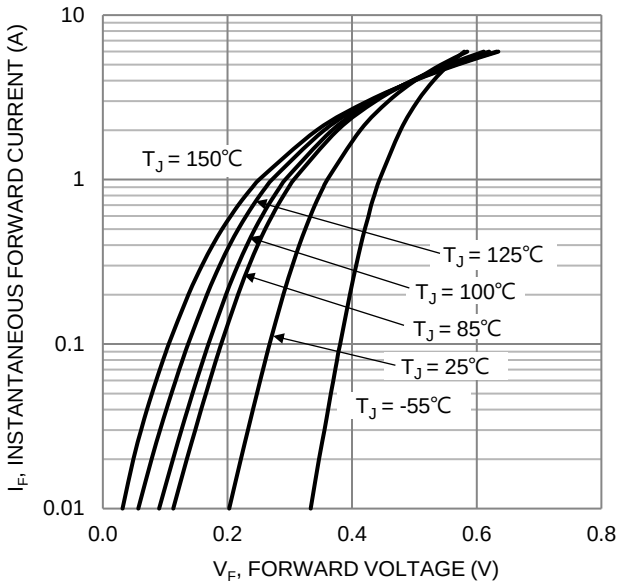


Figure 1. Typical Forward Characteristics

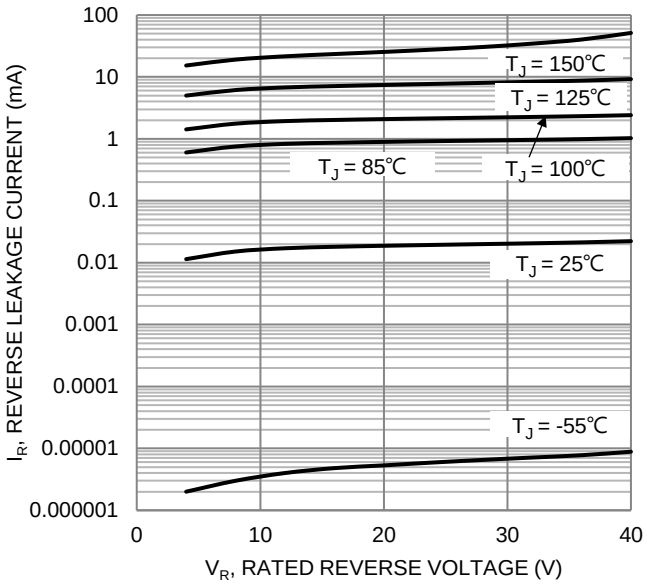


Figure 2. Typical Reverse Characteristics

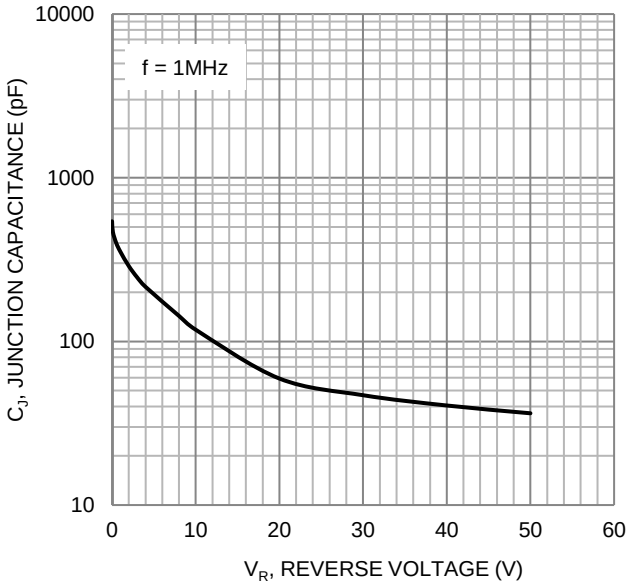


Figure 3. Junction Capacitance vs. Reverse

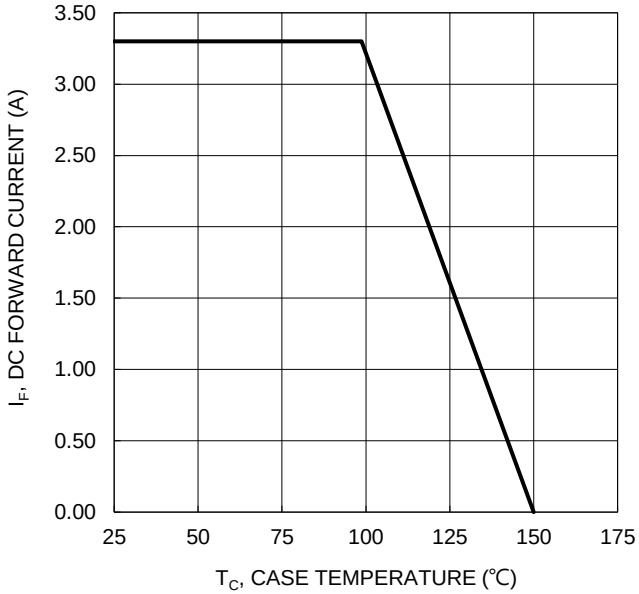
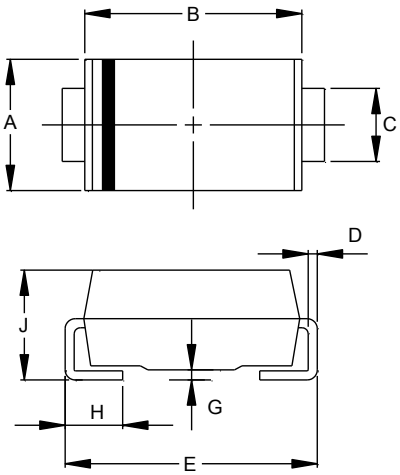


Figure 4. DC Forward Current Derating

Package Outline Dimensions

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

SMA

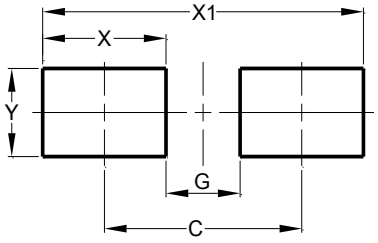


SMA		
Dim	**Min**	**Max**
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

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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