

2.0A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER

Product Summary (@ +25°C)

Device	V _{RRM} (V)	I _O (A)	V _F Max (V)	I _R Max (μA)
B270AE/BE	70	2.0	0.79	7
B280AE/BE	80	2.0	0.79	7
B290AE/BE	90	2.0	0.79	7
B2100AE/BE	100	2.0	0.79	7

Applications

- Polarity Protection Diode
- Re-Circulating Diode
- Blocking Diode
- DC-DC
- AC-DC

Features and Benefits

- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- For Use in Low Voltage Drop, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

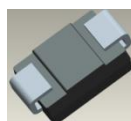
Mechanical Data

- Case: SMA and SMB
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Classification 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 **Ⓔ3**
- Polarity: Cathode Band
- Weight: SMA-0.063 grams (Approximate)
SMB-0.093 grams (Approximate)

SMA / SMB



Top View



Bottom View

Ordering Information (Note 4)

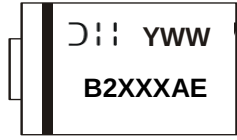
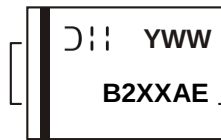
Part Number	Case	Packaging
B2XXAE-13	SMA	5,000/Tape & Reel
B2XXXAE-13	SMA	5,000/Tape & Reel
B2XXBE-13	SMB	3,000/Tape & Reel
B2XXXBE-13	SMB	3,000/Tape & Reel

*x = Device type, e.g. B280AE-13 (SMA package); B2100BE-13 (SMB package).

- 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 http://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/>.

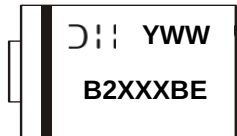
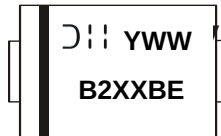
Marking Information

SMA



B2XXAE or B2XXXAE = Product Type Marking Code, ex: B270AE (SMA Package)
 ⌐⌐⌐ = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 8 for 2018)
 WW = Week Code (01 to 53)

SMB



B2XXBE or B2XXXBE = Product Type Marking Code, ex: B270BE (SMB Package)
 ⌐⌐⌐ = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 8 for 2018)
 WW = Week Code (01 to 53)

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	B270AE B270BE	B280AE B280BE	B290AE B290BE	B2100AE B2100BE	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	70	80	90	100	V
Working Peak Reverse Voltage	V _{RWM}					
DC Blocking Voltage	V _R					
Average Rectified Output Current	I _O	2.0				A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	50				A

Thermal Characteristics

Characteristic	Symbol	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	°C/W
	SMA	110
	SMB	100
Typical Thermal Resistance Junction to Case (Note 5)	R _{θJC}	°C/W
	SMA	65
	SMB	50
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150 °C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V _F	—	0.74	0.79	V	I _F = 2.0A, T _A = +25°C
		—	0.60	—		I _F = 2.0A, T _A = +125°C
Leakage Current (Note 6)	I _R	—	—	7	μA	@ Rated V _R , T _A = +25°C
		—	0.4	—	mA	@ Rated V _R , T _A = +125°C
Typical Capacitance	C _T	—	70	—	pF	V _R = 4V, f = 1MHz

Notes: 5. Valid provided that terminals are kept at ambient temperature.
 6. Short duration pulse test used to minimize self-heating effect.

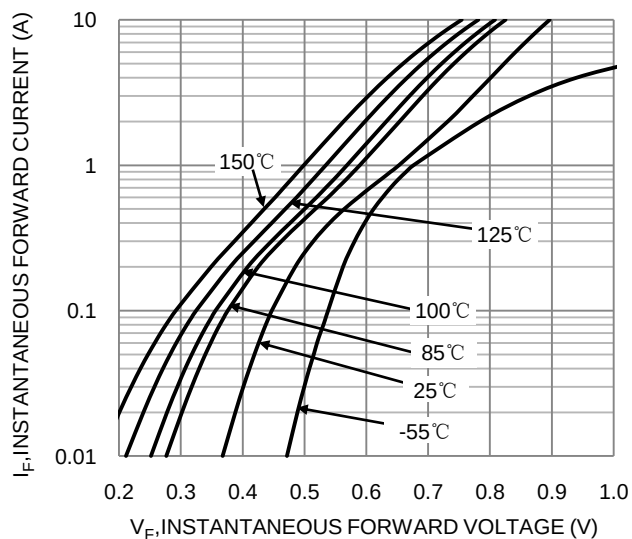


Figure 1. Typical Forward Characteristics

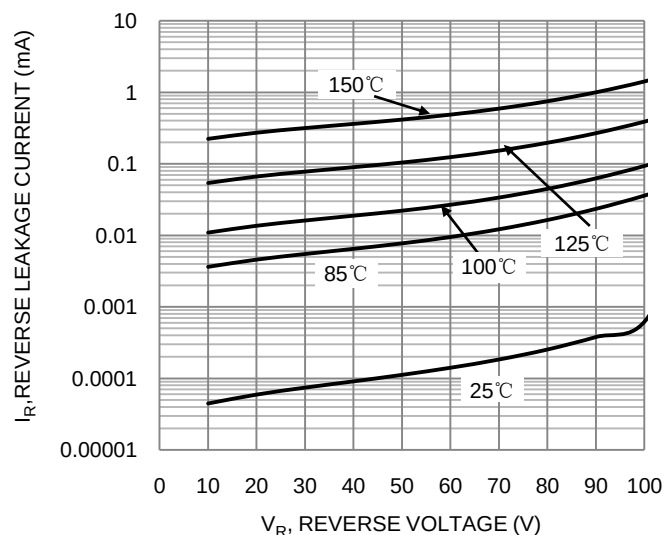


Figure 2. Typical Reverse Characteristics

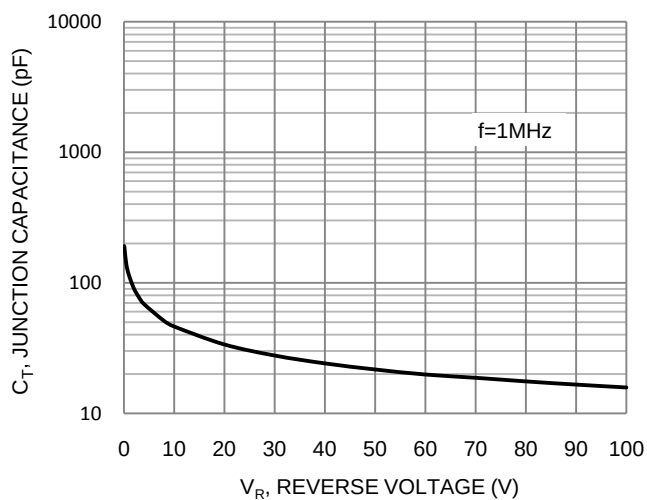


Figure 3. Typical Junction Capacitance

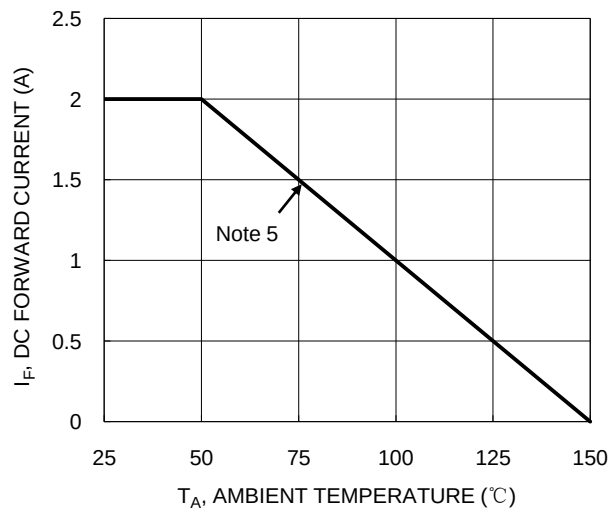
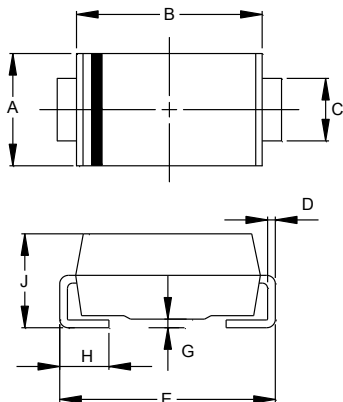


Figure 4. DC Forward Current Derating

Package Outline Dimensions

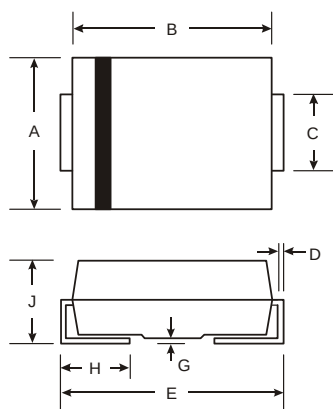
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

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		

SMB

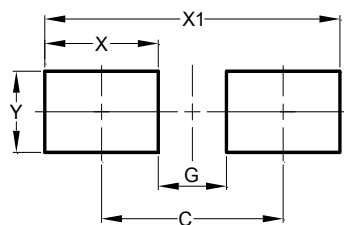


SMB		
Dim	Min	Max
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout

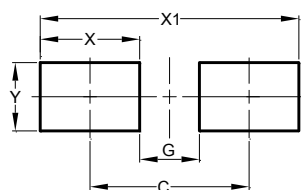
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SMA



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

SMB



Dimensions	Value (in mm)
C	4.30
G	1.80
X	2.50
X1	6.80
Y	2.30

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