

2.0A HIGH-VOLTAGE SCHOTTKY BARRIER RECTIFIER

Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _{F(MAX)} (V)	I _{R(MAX)} (μA)
100	2	0.79	8

Features and Benefits

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Surge Overload Rating to 50A Peak
- For Use in Low-Voltage, High-Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- High Temperature Soldering: +260°C/10 Seconds at Terminal
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The B2100AQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF16949 certified facilities.**

<https://www.diodes.com/quality/product-definitions/>

Description and Applications

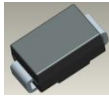
The B2100AQ is a single rectifier packaged in the low-profile SMA package. Providing low V_F and excellent high temperature stability this device is ideal for use in general rectification applications such as:

- Boost diodes
- Blocking diodes

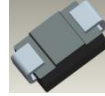
Mechanical Data

- Package: SMA
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.064 grams (Approximate)

SMA



Top View



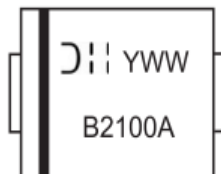
Bottom View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
B2100AQ-13	SMA	5000	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



B2100A = Product Type Marking Code
 D11 = Manufacturer's Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 4 for 2024)
 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	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	100	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current	I _O	2.0	A
RMS Reverse Voltage	V _{R(RMS)}	70	V
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load	I _{FSM}	50	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	100	°C/W
Thermal Resistance Junction to Ambient (Note 6)	R _{θJA}	75	°C/W
Thermal Resistance Junction to Case (Note 5)	R _{θJC}	40	°C/W
Thermal Resistance Junction to Case (Note 6)	R _{θJC}	30	°C/W
Operating and Storage Temperature Range (Note 7)	T _J , T _{STG}	-55 to +175	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V _F	—	—	0.79	V	I _F = 2.0A, T _A = +25°C
		—	—	0.66	V	I _F = 2.0A, T _A = +125°C
Peak Reverse Current at Rated DC Blocking Voltage (Note 8)	I _{RM}	—	0.6	8	μA	V _R = 100V, T _A = +25°C
		—	0.5	1.5	mA	V _R = 100V, T _A = +125°C
Typical Total Capacitance	C _T	—	75	—	pF	V _R = 4V, f = 1MHz

- Notes:
5. Device mounted on FR-4 substrate, 1" x 1", 2oz, single-sided, PC boards with 0.1" x 0.15" copper pad.
 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.
 7. 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: $dP_D / dT_J < 1 / R_{\theta JA}$.
 8. Short duration pulse test used to minimize self-heating effect.

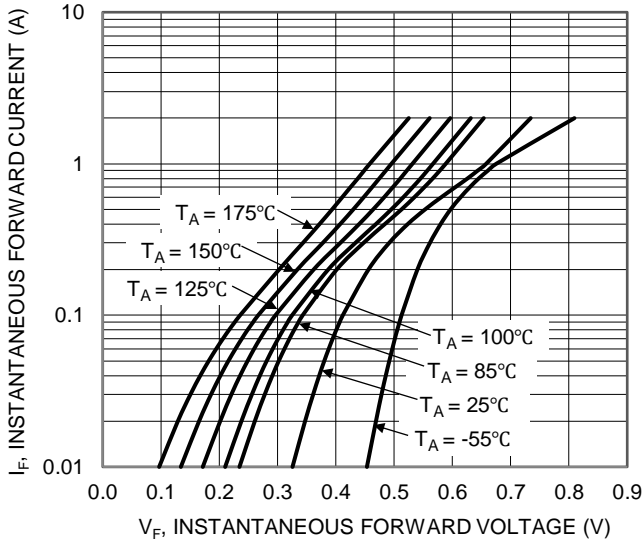


Figure 1. Typical Forward Characteristics

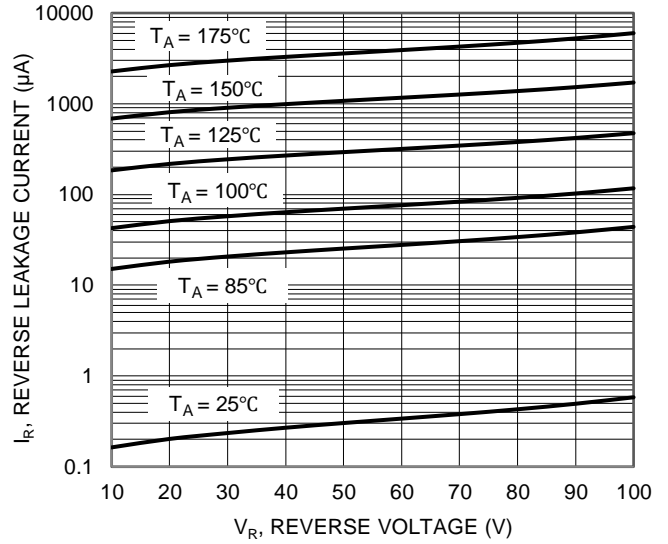


Figure 2. Typical Reverse Characteristics

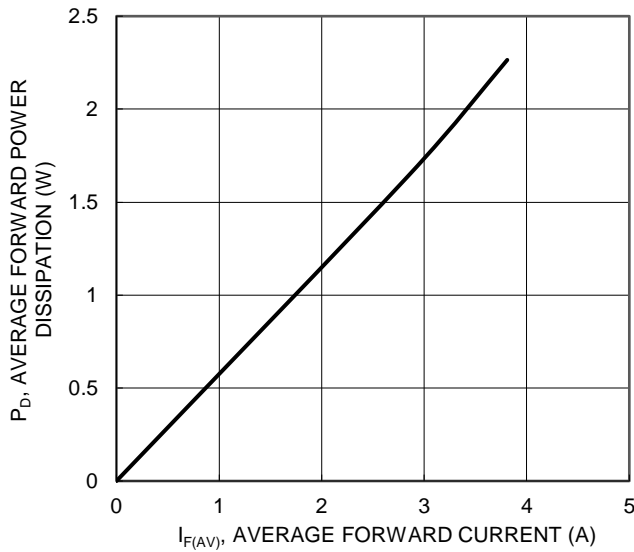


Figure 3. Forward Power Dissipation

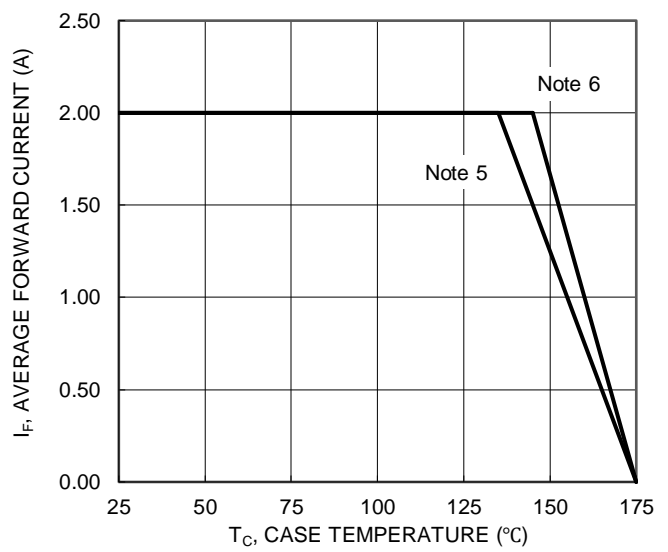


Figure 4. Forward Current Derating

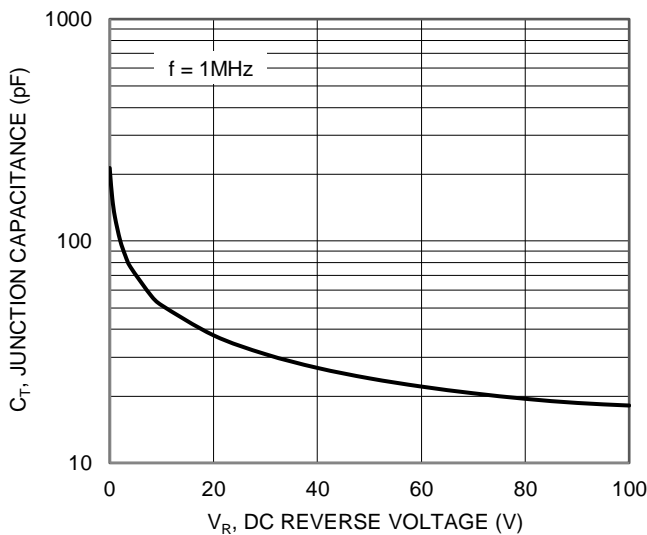
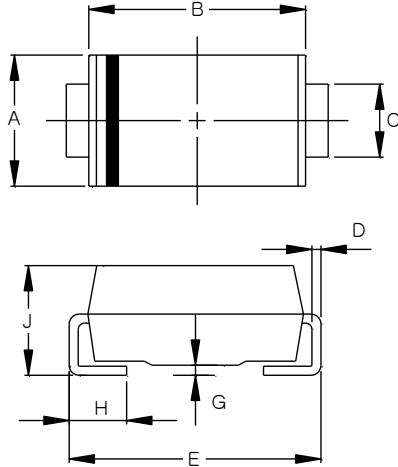


Figure 5. Typical Junction Capacitance

Package Outline Dimensions

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

SMA

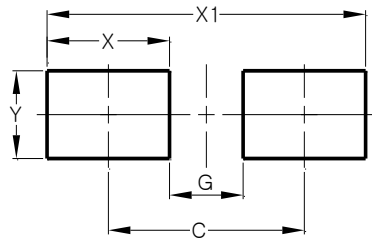


SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

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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