



2.0A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER

Product Summary (@ +25°C)

| B270Q | | | |
|----------------------|--------------------|------------------------|-------------------------|
| V _{RRM} (V) | I _O (A) | V _F Max (V) | I _R Max (μA) |
| 70 | 2.0 | 0.79 | 7 |

B280Q

| V _{RRM} (V) | I _O (A) | V _F Max (V) | I _R Max (μΑ) |
|----------------------|--------------------|------------------------|-------------------------|
| 80 | 2.0 | 0.79 | 7 |

B290Q

| V _{RRM} (V) | I _O (A) | V _F Max (V) | I _R Max (μA) |
|----------------------|--------------------|------------------------|-------------------------|
| 90 | 2.0 | 0.79 | 7 |

B2100Q

| V _{RRM} (V) | I _O (A) | V _F Max (V) | I _R Max (μA) |
|----------------------|--------------------|------------------------|-------------------------|
| 100 | 2.0 | 0.79 | 7 |

Description and Applications

This Schottky Barrier Rectifier is designed to meet the general requirements of commercial applications. It is ideally suited for use as a:

- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

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 Application
- High Temperature Soldering: +260°C/10 second at Terminal
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

Mechanical Data

- Case: 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: 0.093 grams (Approximate)



Top View



Bottom View

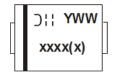
Ordering Information (Note 5)

| Part Number | Compliance | Case | Packaging |
|-------------|------------|------|-------------------|
| B2xxxQ-13-F | Automotive | SMB | 3,000/Tape & Reel |

Notes:

- 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied
- 2. See http://www.diodes.com/quality/lead_free.html 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/quality/product_compliance_definitions/.
- $5.\ For\ packaging\ details,\ go\ to\ our\ website\ at\ http"//www.diodes.com/products/packages.html.$

Marking Information



XXXX = Product Type Marking Code, ex: B290 (SMB Package)

>|| = Manufacturers' Code Marking

YWW = Date Code Marking

Y = Last Digit of Year (ex: 16 for 2016)

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 capacitance load, derate current by 20%.

| Characteristic | Symbol | B270Q | B280Q | B290Q | B2100Q | Unit |
|---|--|-------|-------|-------|--------|------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 70 | 80 | 90 | 100 | > |
| RMS Reverse Voltage | V _{R(RMS)} | 49 | 56 | 63 | 70 | V |
| Average Rectified Output Current @ T _T = +125°C | lo | | 2 | .0 | | Α |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | | 5 | 0 | | Α |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Typical Thermal Resistance Junction to Terminal (Note 6) | $R_{	heta JT}$ | 15 | °C/W |
| Operating and Storage Temperature Range | $T_{J_1}T_{STG}$ | -65 to +150 | °C |

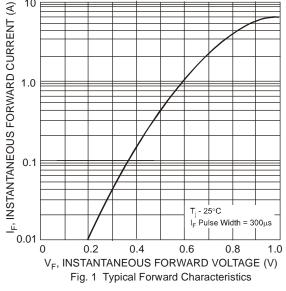
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

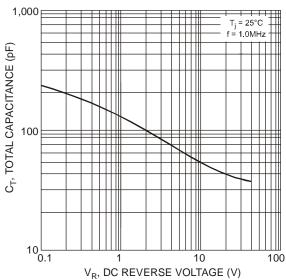
| Characteristic | Symbol | Min | Тур | Max | Unit | Test Condition |
|--------------------------|----------------|-----|-----|--------------|----------|---|
| Forward Voltage Drop | V _F | _ | _ | 0.79 0.69 | V | I _F = 2.0A, T _A = +25°C I _F = 2.0A, T _A = +100°C |
| Leakage Current (Note 7) | I _R | _ | _ | 7.0 2.0 | μA mA | @ Rated V_R , $T_A = +25^{\circ}C$ @ Rated V_R , $T_A = +100^{\circ}C$ |
| Total Capacitance | C _T | _ | _ | 75 | pF | $V_R = 4V, f = 1MHz$ |

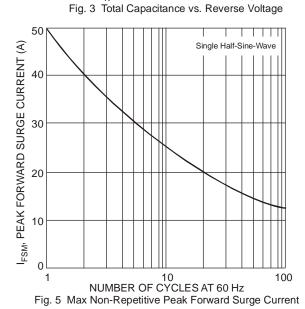
Notes:

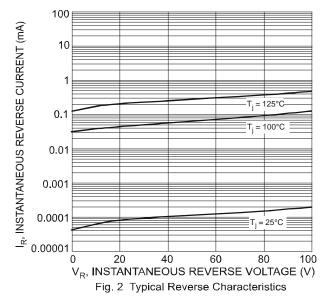
- Valid provided that terminals are kept at ambient temperature.
 Short duration pulse test used to minimize self-heating effect.

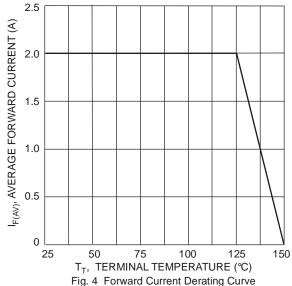








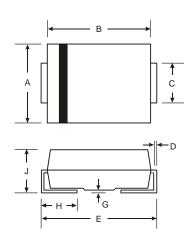






Package Outline Dimensions

Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.

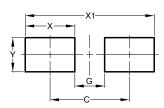


SMB

| SMB | | | | |
|---------|----------|-------|--|--|
| Dim | Min | Max | | |
| Α | 3.30 | 3.94 | | |
| В | 4.06 | 4.57 | | |
| C | 1.96 | 2.21 | | |
| D | 0.15 | 0.31 | | |
| Е | 5.00 | 5.59 | | |
| G | 0.05 | 0.20 | | |
| Н | 0.76 | 1.52 | | |
| J | 2.00 | 2.50 | | |
| All Din | nensions | in mm | | |

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.



SMB

| Dimensions | Value (in mm) |
|------------|---------------|
| С | 4.30 |
| G | 1.80 |
| Х | 2.50 |
| X1 | 6.80 |
| Y | 2.30 |



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