

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: B290Q-13-F
Manufacturer: Diodes Incorporated
Package: DO-214AA, SMB
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/diodes-incorporated/b290q-13-f.html>

Request a Quote:

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Scan for product page

Contact Information

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Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

Product Summary (@ T_A = +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 (μA)
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 diodes
- Re-circulating diodes
- Switching diodes

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)**
- **The B270Q - B2100Q are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

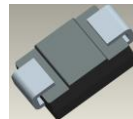
<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: SMB
- Package 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 Ⓔ
- Polarity: Cathode Band
- Weight: 0.093 grams (Approximate)



Top View



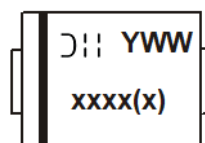
Bottom View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
B2xxQ-13-F	SMB	3,000	Tape & Reel
B2xxxQ-13-F	SMB	3,000	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



DII = Manufacturer's Code Marking

YWW = Date Code Marking

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

Y = Last Digit of Year (ex: 3 for 2023)

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	B270Q	B280Q	B290Q	B2100Q	Unit
Peak Repetitive Reverse Voltage	V _{RRM}					
Working Peak Reverse Voltage	V _{RWM}	70	80	90	100	V
DC Blocking Voltage	V _R					
RMS Reverse Voltage	V _{R(RMS)}	49	56	63	70	V
Average Rectified Output Current @ T _T = +125°C	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	Value	Unit
Typical Thermal Resistance Junction to Terminal (Note 5)	R _{θJT}	15	°C/W
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	—	—	0.79 0.69	V	I _F = 2.0A, T _A = +25°C I _F = 2.0A, T _A = +100°C
Leakage Current (Note 6)	I _R	—	—	7.0 2.0	μA mA	@ Rated V _R , T _A = +25°C @ Rated V _R , T _A = +100°C
Total Capacitance	C _T	—	75	—	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.

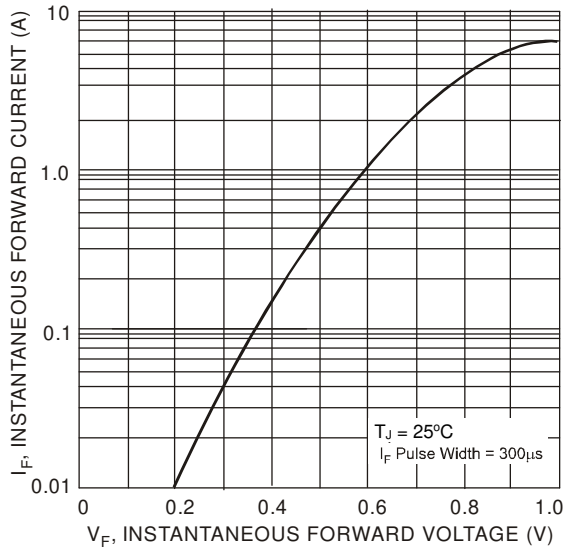


Fig. 1 Typical Forward Characteristics

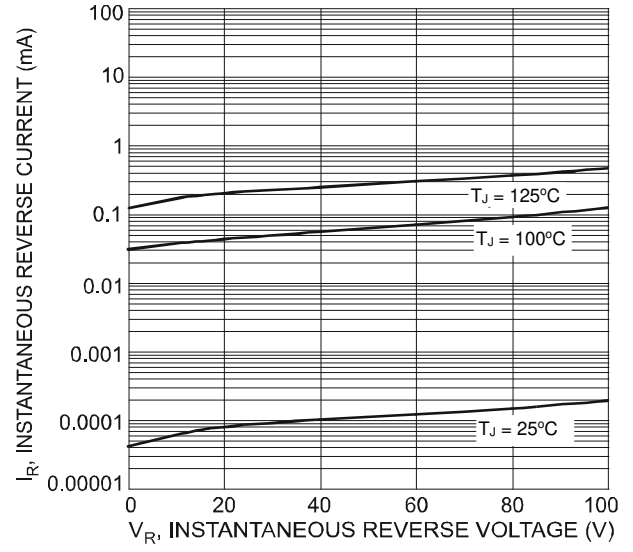


Fig. 2 Typical Reverse Characteristics

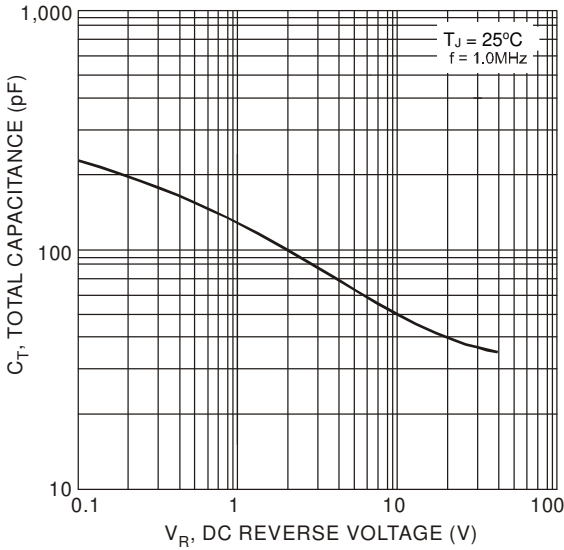


Fig. 3 Total Capacitance vs. Reverse Voltage

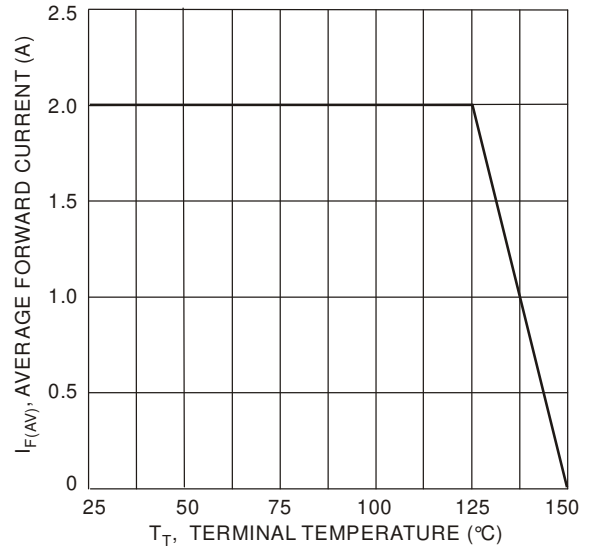


Fig. 4 Forward Current Derating Curve

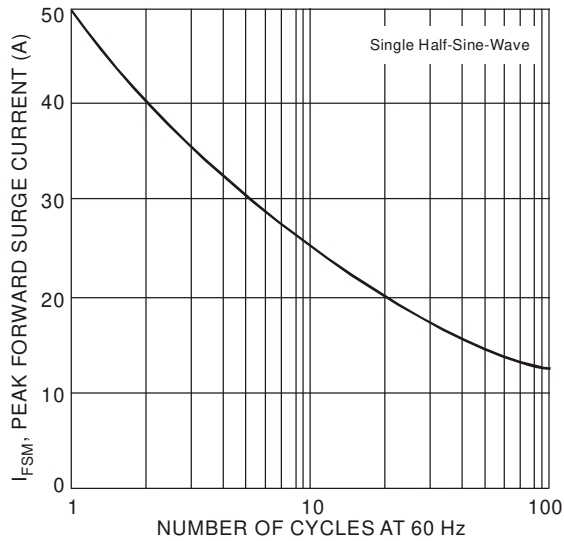
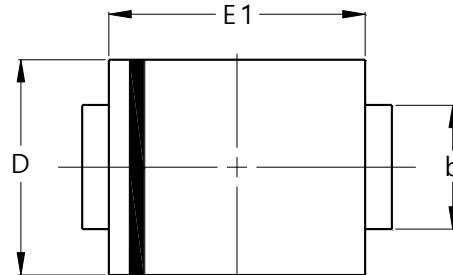


Fig. 5 Max Non-Repetitive Peak Forward Surge Current

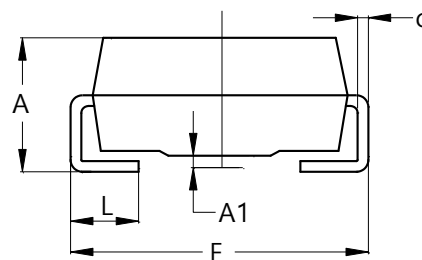
Package Outline Dimensions

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

SMB



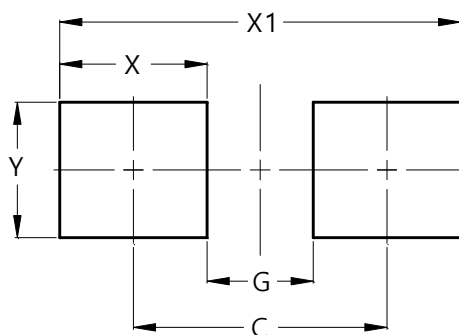
SMB		
Dim	Min	Max
A	2.00	2.50
A1	0.05	0.20
b	1.96	2.21
c	0.15	0.31
D	3.30	3.94
E	5.00	5.59
E1	4.06	4.57
L	0.76	1.52
All Dimensions in mm		



Suggested Pad Layout

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

SMB



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

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