



**THE DATASHEET OF
B380Q-13-F**



Product Summary

DIODES™ B370Q/B380Q/B390Q/B3100Q

V _{RRM} (V)	I _O (A)	V _{F max} (V)	I _{R max} (mA)
70/80/90/100	3.0	0.79	0.5

Description and Applications

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

- Polarity protection diodes
- Re-circulating diodes
- Switching diodes

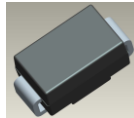
Features and Benefits

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Surge Overload Rating to 100A Peak
- For Use in Low Voltage, 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)**
- **The B370Q - B3100Q are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

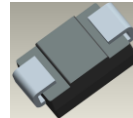
<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: SMC
- 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 (E3)
- Polarity: Cathode Band
- Weight: 0.21 grams (Approximate)



Top View



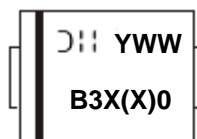
Bottom View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
B370Q-13-F	SMC	3000	Tape & Reel
B380Q-13-F	SMC	3000	Tape & Reel
B390Q-13-F	SMC	3000	Tape & Reel
B3100Q-13-F	SMC	3000	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



B3X0 = Product Type Marking Code, ex: B380 (SMC Package)
 B3XX0 = Product Type Marking Code, ex: B3100 (SMC Package)

DII = Manufacturers' Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 2 for 2022)
 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	B370Q	B380Q	B390Q	B3100Q	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 = +90°C	I _O	3.0				A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load	I _{FSM}	100				A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Terminal	R _{θJT}	10	°C/W
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 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	V	I _F = 3.0A, T _A = +25°C
		—	—	0.69		I _F = 3.0A, T _A = +100°C
Leakage Current (Note 5)	I _R	—	—	0.5	mA	@ Rated V _R , T _A = +25°C
		—	—	20		@ Rated V _R , T _A = +100°C
Total Capacitance	C _T	—	100	—	pF	V _R = 4V, f = 1MHz

Note: 5. Short duration pulse test used to minimize self-heating effect.

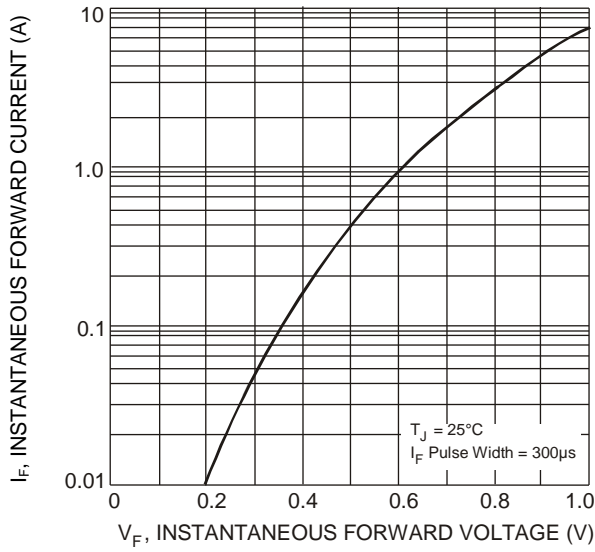


Fig. 1 Typical Forward Characteristics

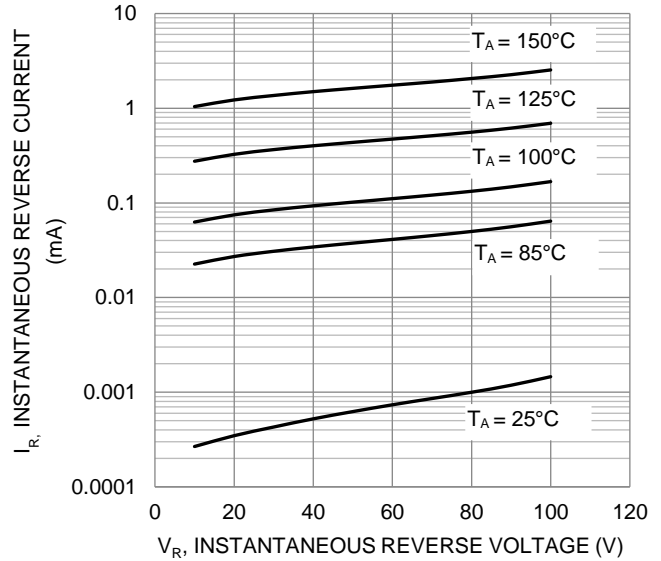


Fig. 2 Typical Reverse Characteristics

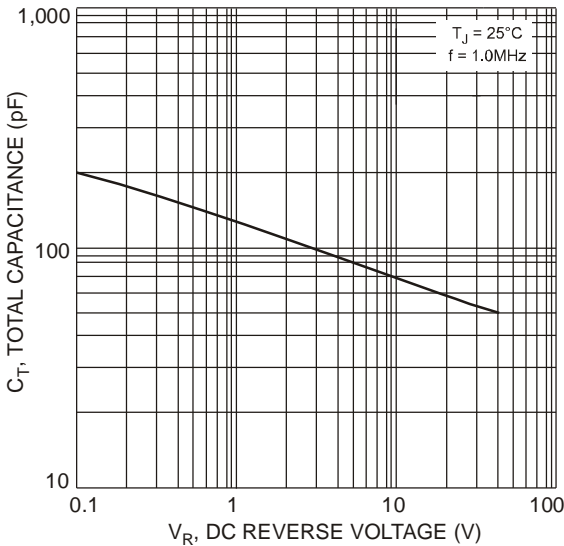


Fig. 3 Total Capacitance vs. Reverse Voltage

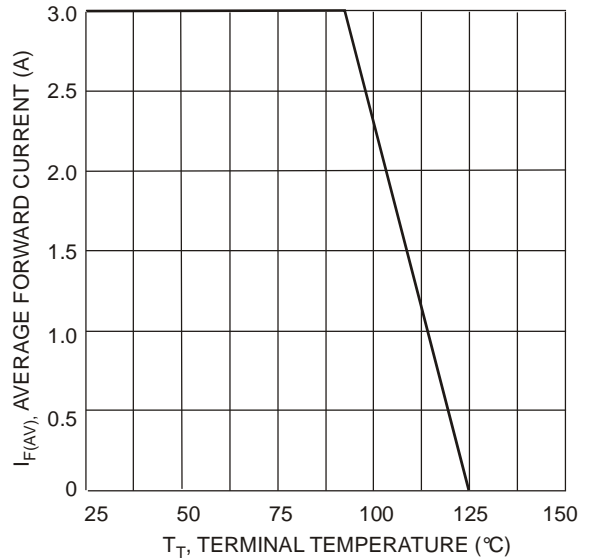


Fig. 4 Forward Current Derating Curve

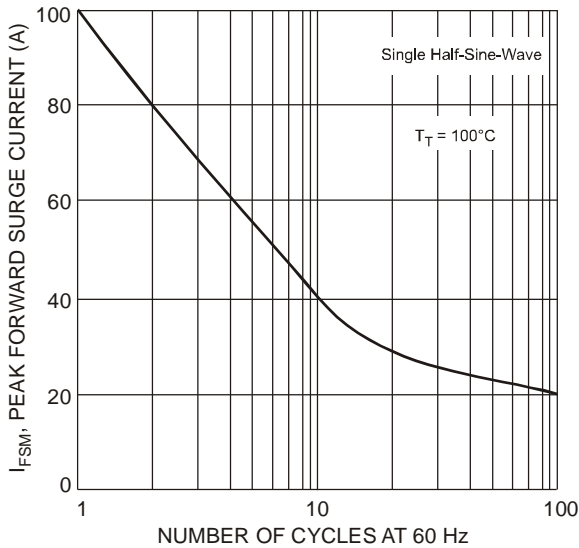
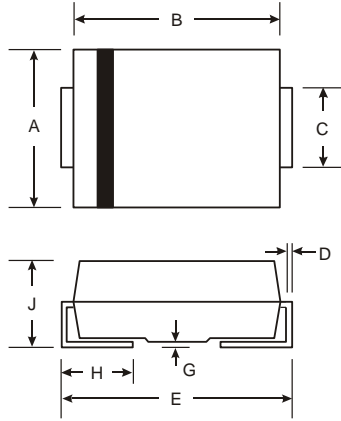


Fig. 5 Max Non-Repetitive Peak Forward Surge Current

Package Outline Dimensions

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

SMC

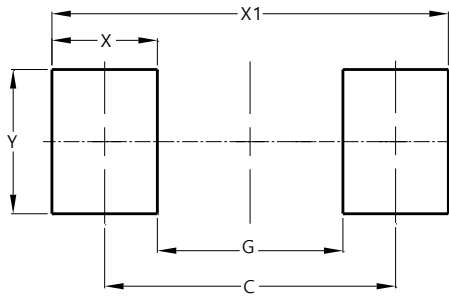


SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout

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

SMC



Dimensions	Value (in mm)
C	6.90
G	4.40
X	2.50
X1	9.40
Y	3.30

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