3.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Product Summary (@+25°C)

B340BQ

V_{RRM} (V)	I_O (A)	V_F Max (V)	I_R Max (mA)
40	3.0	0.5	0.5

B350BQ/B360BQ

V_{RRM} (V)	I_O (A)	V_F Max (V)	I_R Max (mA)
50/60	3.0	0.7	0.5

Features and Benefits

- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 125A 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 B340BQ-B360BQ 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/

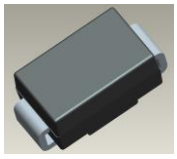
Description and Applications

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

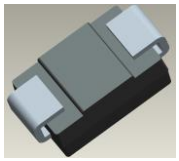
- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

Mechanical Data

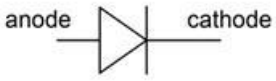
- Case: SMB
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: Cathode Band
- Weight: 0.093 grams (Approximate)



Top View



Bottom View

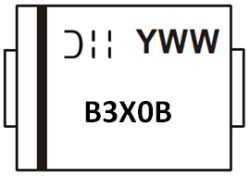


Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
B340BQ-13-F	Automotive	SMB	3000/Tape & Reel
B350BQ-13-F	Automotive	SMB	3000/Tape & Reel
B360BQ-13-F	Automotive	SMB	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



B3X0B = Product Type Marking Code, ex: B340BQ
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 1 for 2021)
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	B340BQ	B350BQ	B360BQ	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	50	60	V
Average Rectified Output Current @ T_T =+100°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 (Note 5)	$R_{\theta JT}$	25	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	95	°C/W
Operating Temperature Range	T_J	-55 to +150	°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 B340BQ B350BQ/B360BQ	V_F	— —	— —	0.50 0.70	V	I_F = 3.0A, T_A = +25°C
Leakage Current (Note 6)	I_R	— —	— —	0.5 20	mA	@ Rated V_R, T_A = +25°C @ Rated V_R, T_A = +100°C
Total Capacitance	C_T	—	—	200	pF	V_R = 4V, f = 1MHz

Notes: 5. Thermal Resistance: Junction to terminal, unit mounted on glass epoxy substrate with 2x3mm copper pad.
6. Short duration pulse test used to minimize self-heating effect.

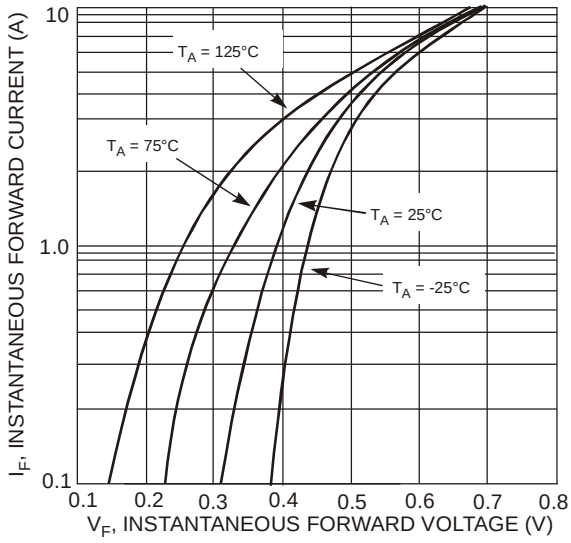


Figure 1 Typical Forward Characteristics – B340BQ

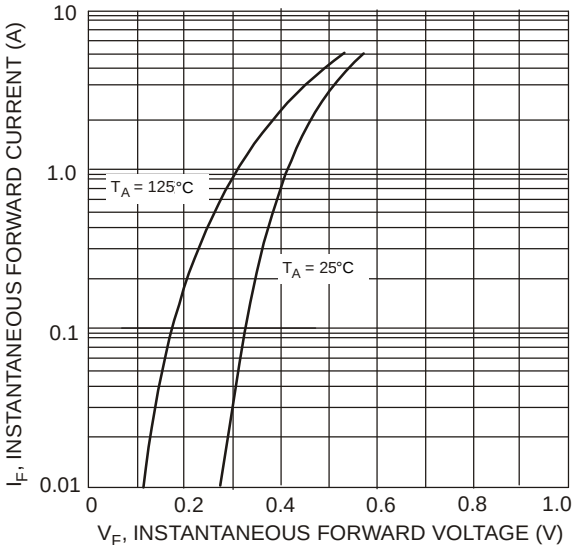


Figure 2 Typical Forward Characteristics – B350BQ/ B360BQ

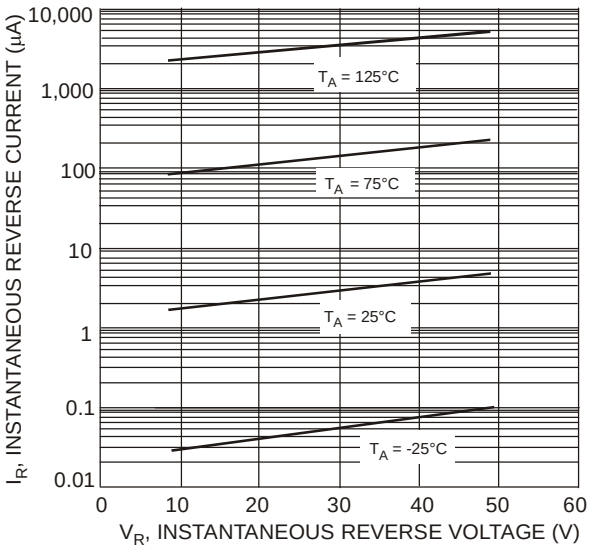


Figure 3 Typical Reverse Characteristics – B340BQ

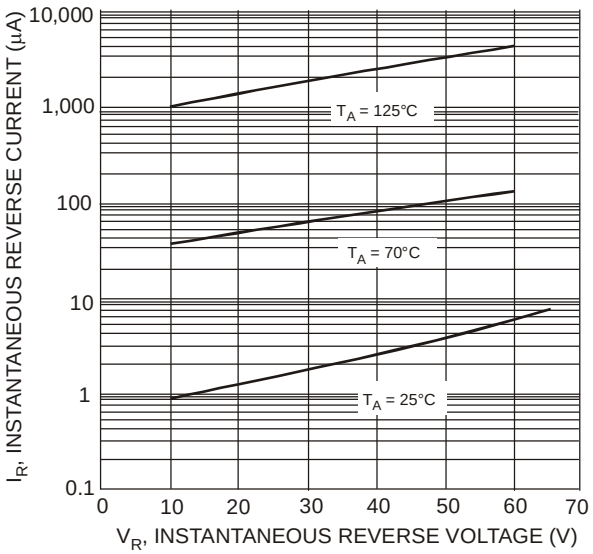


Figure 4 Typical Reverse Characteristics – B350BQ/B360BQ

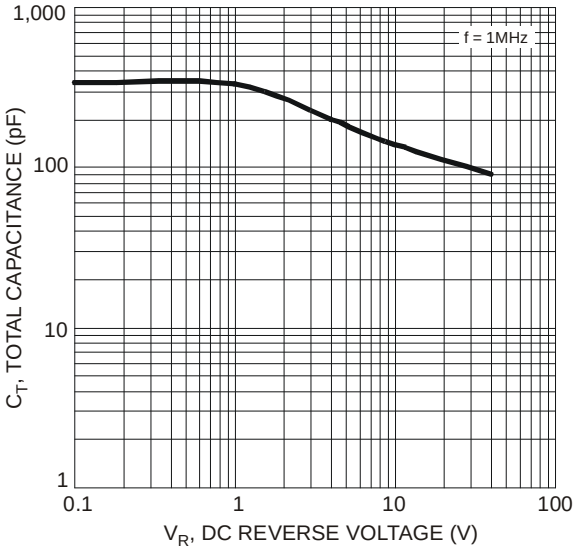


Figure 5 Total Capacitance vs. Reverse Voltage

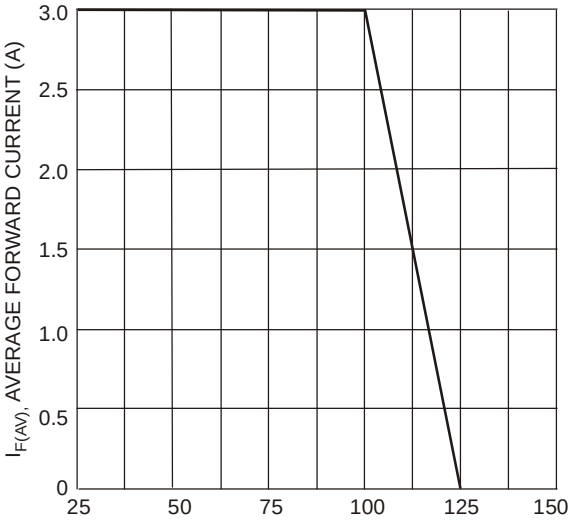


Figure 6 Forward Current Derating Curve

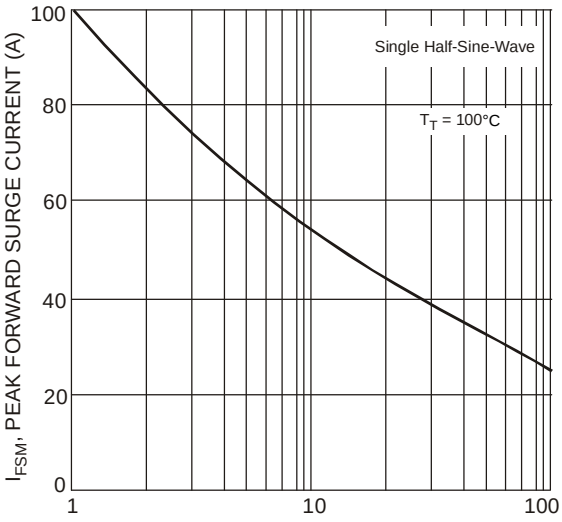
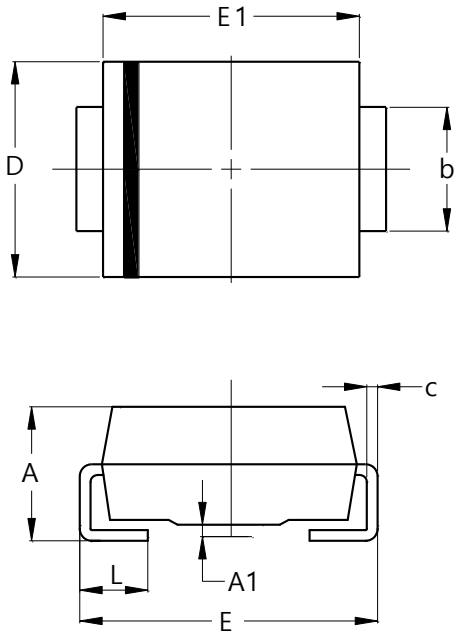


Figure 7 Max Non-Repetitive Peak Forward Surge Current

Package Outline Dimensions

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

SMB

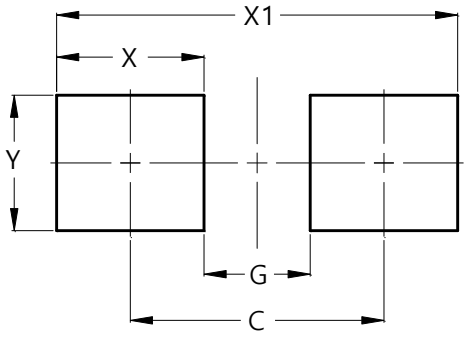


SMB		
Dim	**Min**	**Max**
A	2.00	2.50
A1	0.05	0.20
b	1.96	2.21
c	0.15	0.31
D	3.30	3.94
E	5.00	5.59
E1	4.06	4.57
L	0.76	1.52
All Dimensions in mm		

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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