3.0A SBR
SURFACE-MOUNT SCHOTTKY BARRIER RECTIFIER

Product Summary (@ T_A = +25°C)

V_{RRM} (V)	I_O (A)	$V_{F\ (Max)}$ (V)	$I_{R\ (Max)}$ (µA)
150	3	0.82	30

Features

- Patented SBR® Technology Provides an Avalanche Capability Five Times Larger than Schottky Diodes Ensuring More Rugged and Reliable End Applications
- Lower Reverse Leakage Ensuring Greater Stability at Higher Temperatures
- Low-Forward Voltage (V_F) Minimizes Conduction Losses and Improving Efficiency
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The SBR3150SBQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**
  https://www.diodes.com/quality/product-definitions/

Description and Applications

The SBR3150SBQ is a 3A 150V single rectifier packaged in the low profile SMB 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
- Recirculating diodes

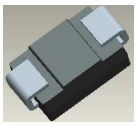
Mechanical Data

- Package: SMB
- Package Material: Molded Plastic, UL Flammability Rating 94V-0
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Moisture Sensitivity: Level 1 per J-STD-020
- Max Soldering Temperature +260°C for 30 secs as per JEDEC J-STD-020
- Weight: 0.096 grams (Approximate)

SMB



Top View



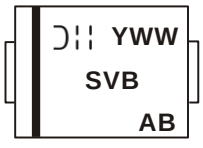
Bottom View

Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
SBR3150SBQ-13	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



= Manufacturer's Marking
SVB = Product Type Marking Code
YWW = Date Code Marking
Y = Last Digit of Year (ex: 5 for 2025)
WW = Week Code (01 to 53)
AB = Foundry and Assembly Code

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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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	150	V
Average Rectified Output Current	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 Ambient (Note 5)	$R_{\theta JA}$	60	°C/W
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{\theta JC}$	20	°C/W
Operating and Storage Temperature Range (Note 6)	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	—	0.75	0.82	V	I_F = 3A, T_J = +25°C
		—	0.61	0.67		I_F = 3A, T_J = +125°C
Leakage Current	I_R	— —	2 0.4	30 5	μA mA	V_R = 150V, T_J = +25°C V_R = 150V, T_J = +125°C
Total Capacitance	C_T	—	87	—	pF	V_R = 4V, f = 1MHz
Reverse-Recovery Time	t_{RR}	—	9	—	ns	I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A

Notes: 5. Device mounted on FR-4 substrate, 0.4"*0.5", 2oz, single-sided, PC boards with 0.2"*0.25" copper pad.
6. The heat generated must be less than thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{\theta JA}$.

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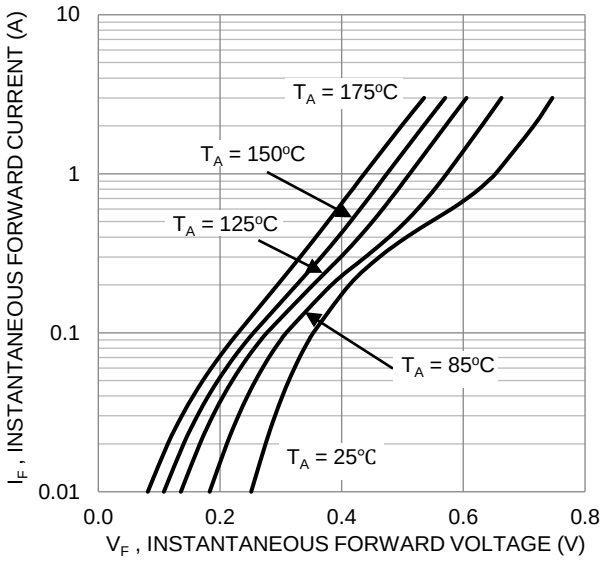


Figure 1. Typical Forward Characteristics

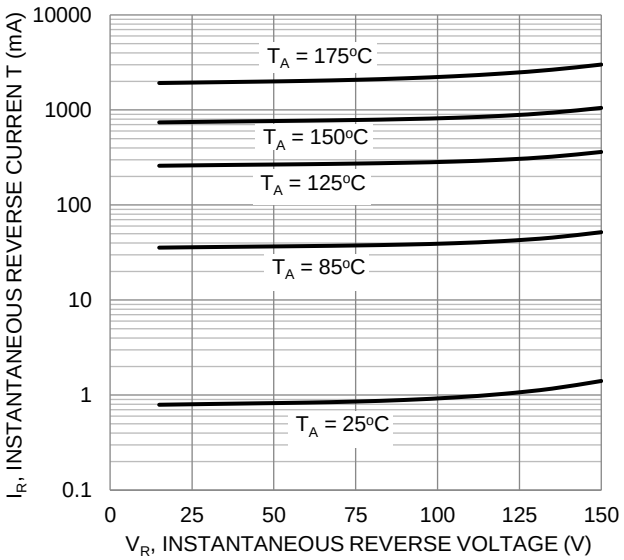


Figure 2. Typical Reverse Characteristics

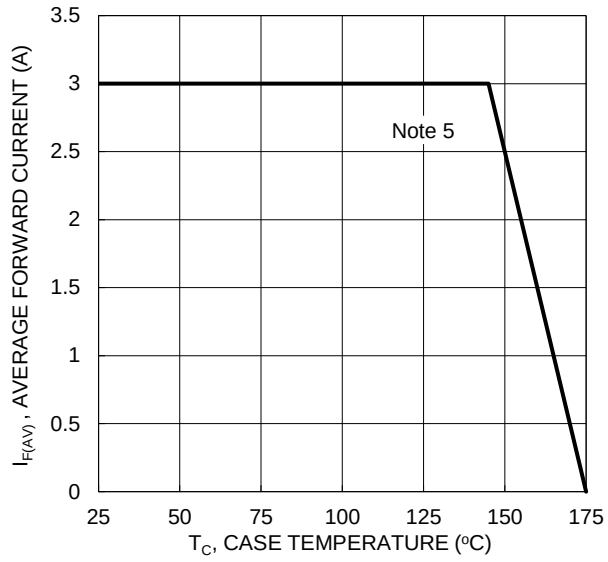


Figure 3. Forward Current Derating Curve

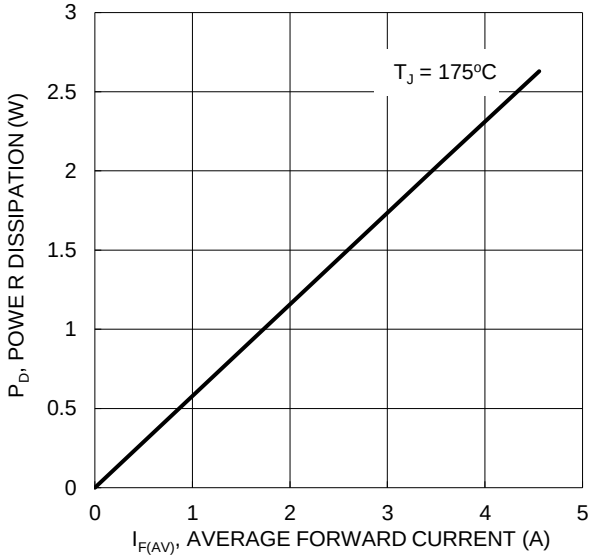


Figure 4. Forward Power Dissipation

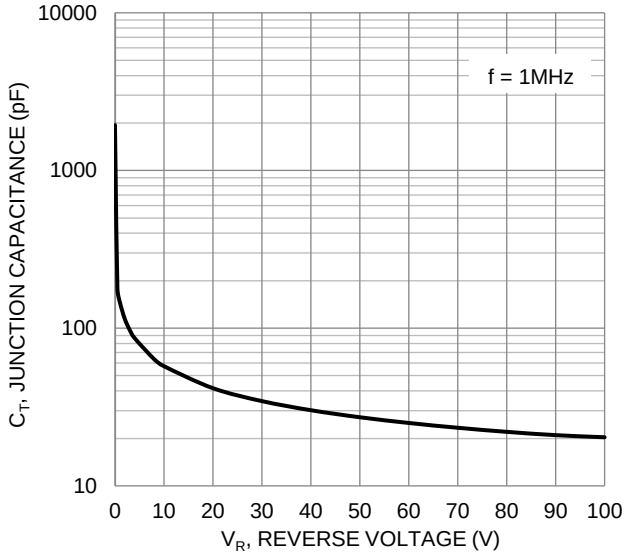


Figure 5. Typical Junction Capacitance

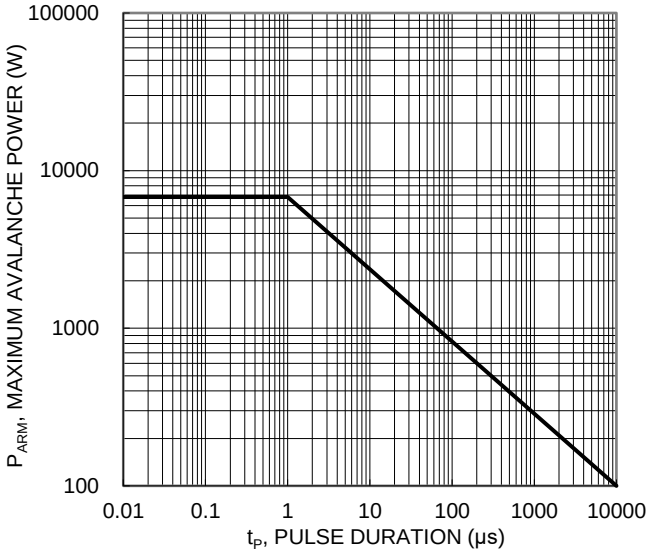


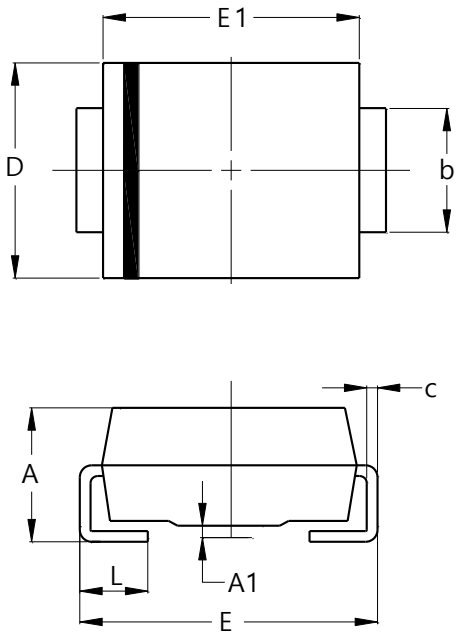
Figure 6. Maximun Avalanche Power Curve

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Package Outline Dimensions

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

SMB

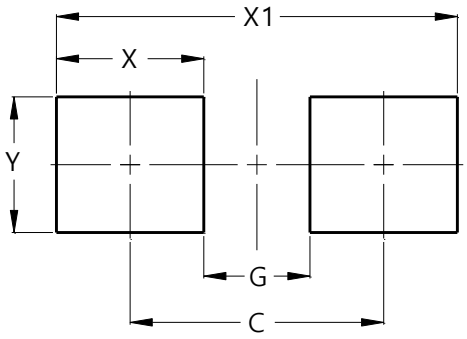


SMB		
Dim	**Min**	**Max**
A	2.00	2.50
A1	0.05	0.20
b	1.96	2.21
c	0.15	0.31
D	3.30	3.94
E	5.00	5.59
E1	4.06	4.57
L	0.76	1.52
All Dimensions in mm		

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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