Product Summary

V_{RRM} (V)	I_O (A)	V_F Max (V) @ +25°C	I_R Max (mA) +25°C
60	2	0.51	0.15

Features and Benefits

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Patented Interlocking Clip Design for High Surge Current Capacity
- Patented Super Barrier Rectifier SBR® Technology
- **Qualified to AEC-Q101 Standards for High Reliability**
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An Automotive-Compliant Part is Available Under Separate Datasheet (SBR2U60S1FQ)**

Description and Applications

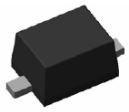
The SBR2U60S1F is a single rectifier packaged in SOD123F(Standard). Offering low V_F, low power loss and high efficiency, this device is ideal for use in general rectification applications as a:

- Boost Diode
- Blocking Diode

Mechanical Data

- Case: SOD123F (Standard)
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Weight: 0.015 grams (Approximate)

SOD123F (Standard)



Top View

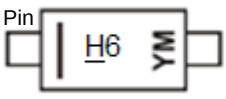
Ordering Information (Note 4)

Part Number	Case	Packaging
SBR2U60S1F-7	SOD123F (Standard)	3,000/Tape & Reel

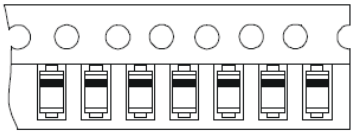
Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. 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

Cathode Pin



H6 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: F = 2018)
M = Month (ex: 9 = September)
Bar Denotes Cathode Pin



Date Code Key

Year	2013	2014	2015	2016	2017	2018	2019	2020
Code	A	B	C	D	E	F	G	H

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

SBR is a registered trademark of Diodes Incorporated.

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	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	60	V
Average Rectified Output Current	I_O	2	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	35	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5) Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JC}$ $R_{\theta JA}$	30 88	°C/W
Operating and Storage Temperature Range	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
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	60	—	—	V	I_R = 1.0mA
Forward Voltage Drop	V_F	— — —	0.37 0.44 0.42	0.46 0.51 —	V	I_F = 1A, T_J = +25°C I_F = 2A, T_J = +25°C I_F = 2A, T_J = +125°C
Leakage Current (Note 6)	I_R	— — —	20 50 6.5	— 150 —	μA μA mA	V_R = 10V, T_J = +25°C V_R = 60V, T_J = +25°C V_R = 60V, T_J = +125°C
Total Capacitance	C_T	—	75	—	pF	V_R = 10V, f = 1MHz
Reverse Recovery Time	t_{RR}	—	11	—	ns	I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A

Notes: 5. Device mounted on FR-4 substrate, 1.0"*1.0", 2oz, single-sided, PC boards with 0.2"*0.25" copper pad.
6. Short duration pulse test used to minimize self-heating effect.

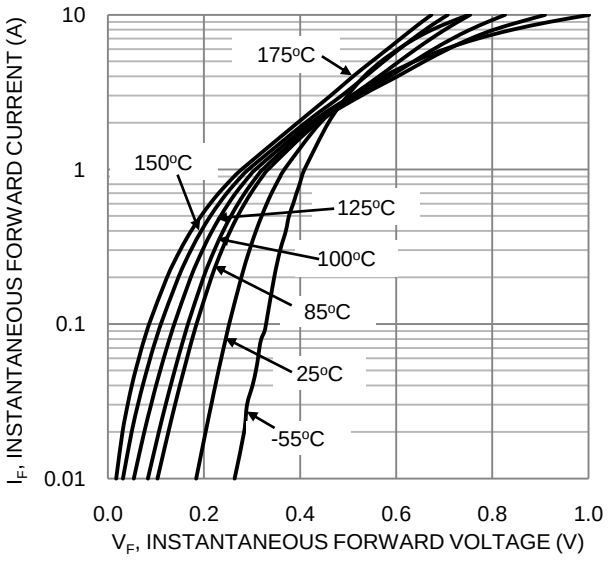


Figure 1. Typical Forward Characteristics

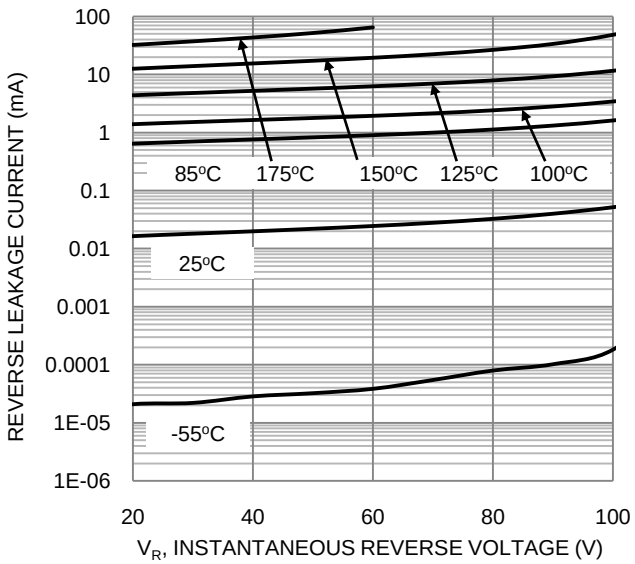


Figure 2. Typical Reverse Characteristics

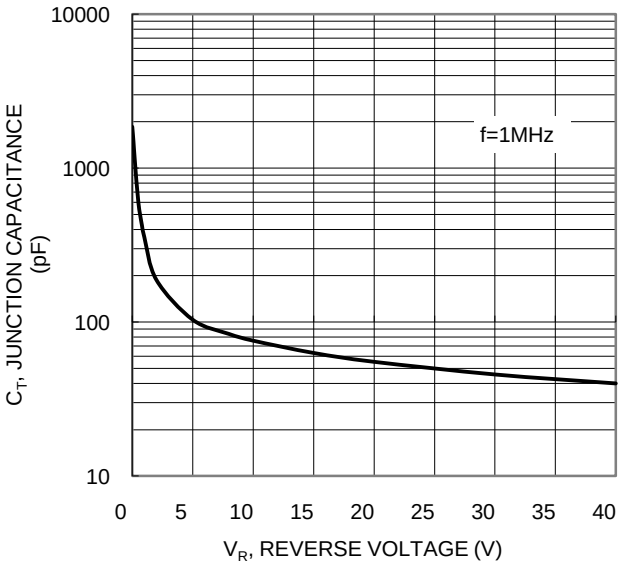


Figure 3. Typical Junction Capacitance

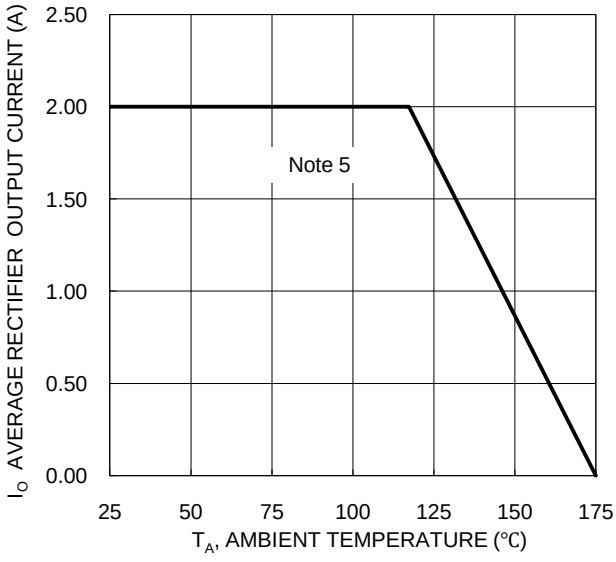


Figure 4. DC Forward Current Derating

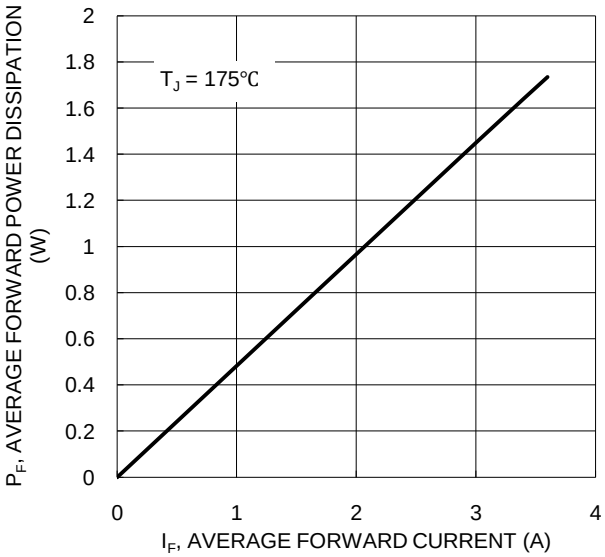
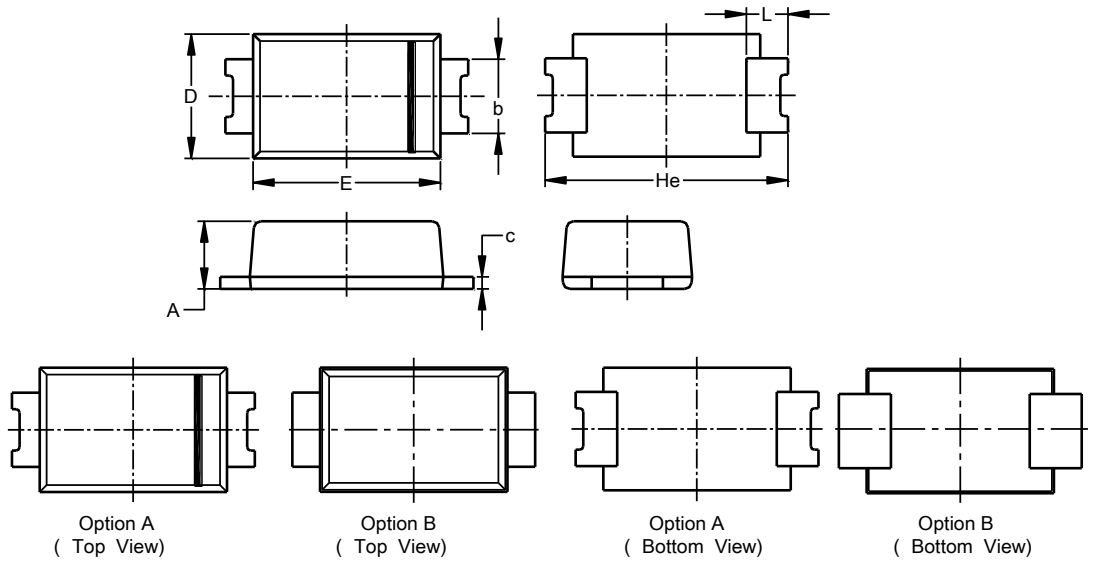


Figure 5. Forward Power Dissipation

Package Outline Dimensions

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

SOD123F (Standard)

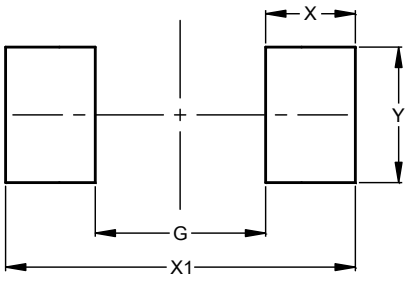


SOD123F (Standard)			
Dim	**Min**	**Max**	**Typ**
A	0.81	1.15	-
b	0.80	1.35	-
c	0.05	0.30	-
D	1.70	1.90	1.80
E	2.60	2.80	2.70
He	3.30	3.70	3.50
L	0.35	0.85	-
All Dimensions in mm			

Suggested Pad Layout

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

SOD123F (Standard)



Dimensions	Value (in mm)
G	1.90
X	1.00
X1	3.90
Y	1.50

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