

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

Description and Applications

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

- Boost diodes
- Blocking diodes

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
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.
<https://www.diodes.com/quality/product-definitions/>
- An automotive-compliant part is available under a separate datasheet ([SBR2U60S1FQ](#))

Mechanical Data

- Package: SOD123F
- Package 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 
- Polarity: Cathode Band
- Weight: 0.015 grams (Approximate)

SOD123F



Top View

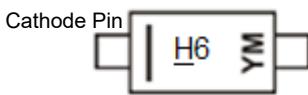
Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
SBR2U60S1F-7	SOD123F	3,000	Tape & Reel

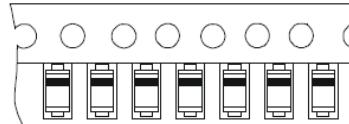
Notes:

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



H6 = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: M = 2025)
 M = Month (ex: 9 = September)
 Bar Denotes Cathode Pin



Date Code Key

Year	2015	-	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Code	C	-	M	N	P	R	S	T	U	V	W	X
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

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SBR2U60S1F

Document number: DS38449 Rev. 5 - 2

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www.diodes.com

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Maximum Ratings (@ $T_A = +25^\circ\text{C}$, 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	V_{RRM}		
Working Peak Reverse Voltage	V_{RWM}	60	V
DC Blocking Voltage	V_{RM}		
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

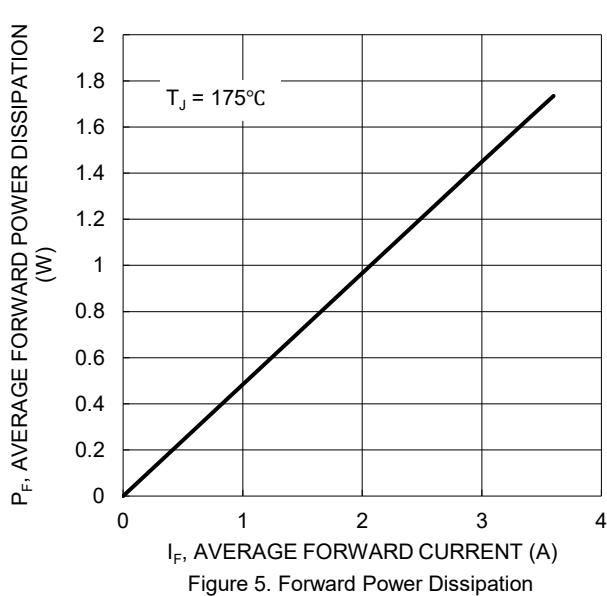
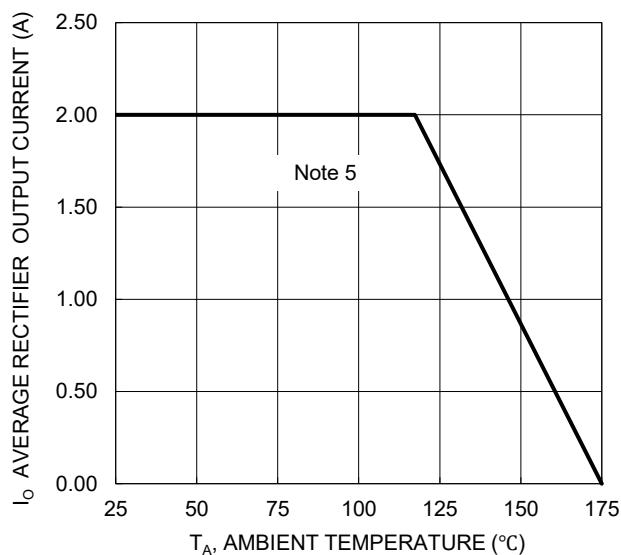
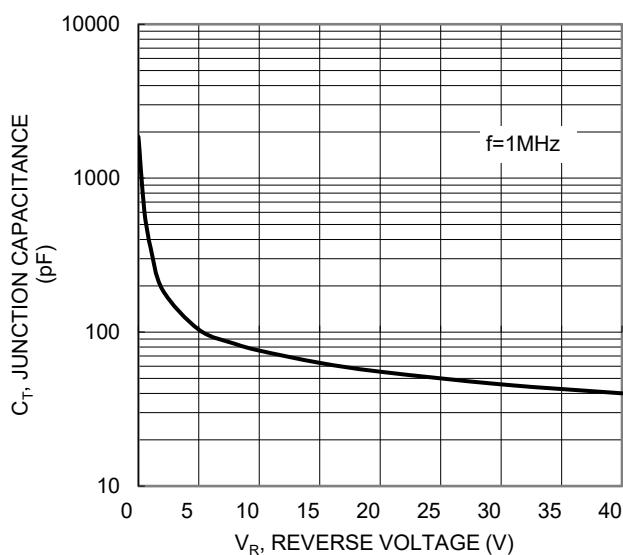
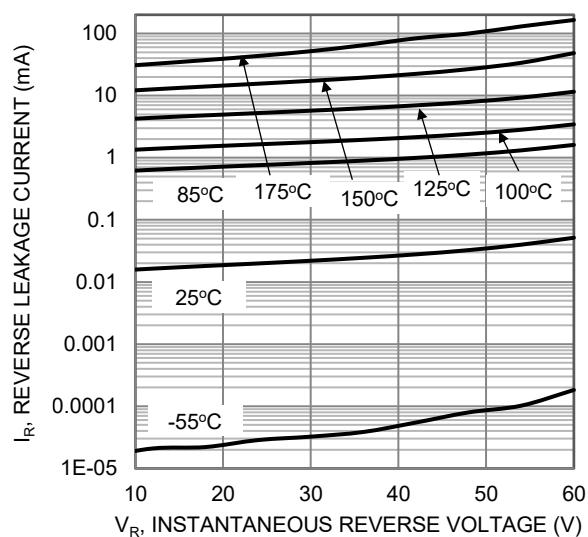
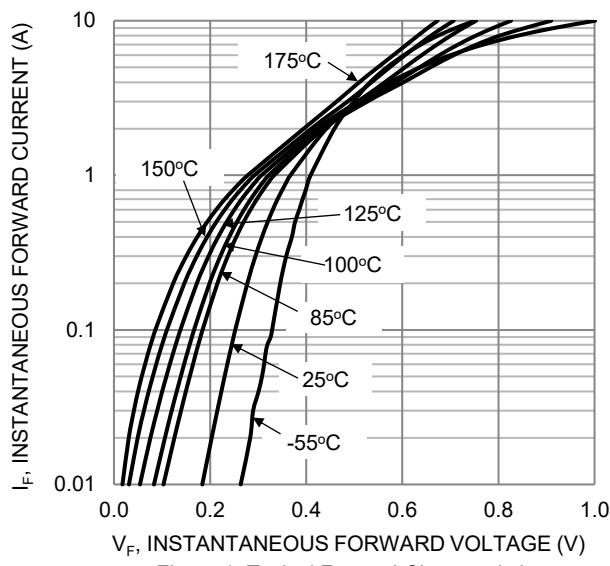
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	30	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	88	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	$^\circ\text{C}$

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	60	—	—	V	$I_R = 1.0\text{mA}$
Forward Voltage Drop	V_F	—	0.37	0.46	V	$I_F = 1\text{A}, T_J = +25^\circ\text{C}$
		—	0.44	0.51		$I_F = 2\text{A}, T_J = +25^\circ\text{C}$
		—	0.42	—		$I_F = 2\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	I_R	—	20	—	μA	$V_R = 10\text{V}, T_J = +25^\circ\text{C}$
		—	50	150	μA	$V_R = 60\text{V}, T_J = +25^\circ\text{C}$
		—	11.5	—	mA	$V_R = 60\text{V}, T_J = +125^\circ\text{C}$
Total Capacitance	C_T	—	75	—	pF	$V_R = 10\text{V}, f = 1\text{MHz}$
Reverse-Recovery Time	t_{RR}	—	11	—	ns	$I_F = 0.5\text{A}, I_R = 1\text{A}, I_{RR} = 0.25\text{A}$

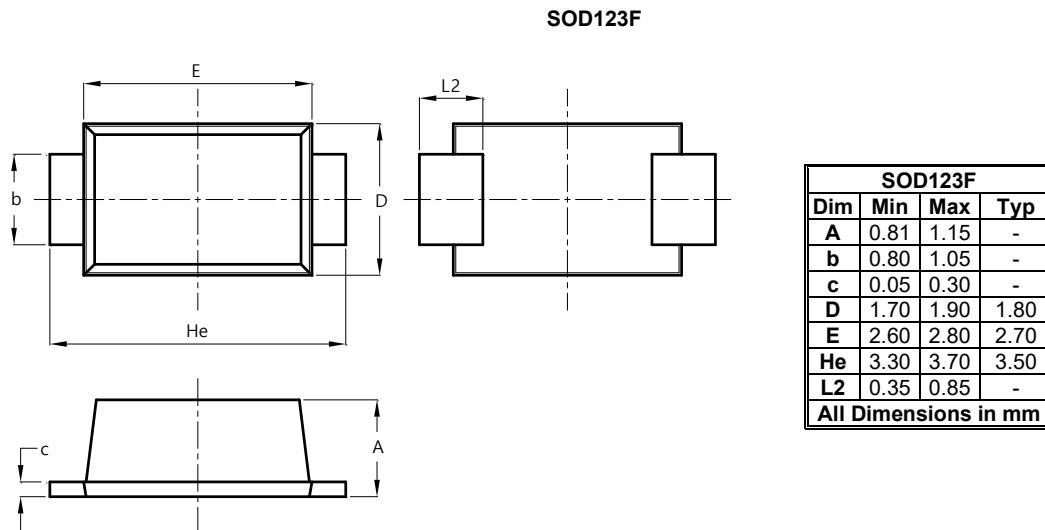
Notes: 5. Device mounted on FR-4 substrate, 1.0" x 1.0", 2oz, single-sided, PC boards with 0.2" x 0.25" copper pad.

6. Short duration pulse test used to minimize self-heating effect.



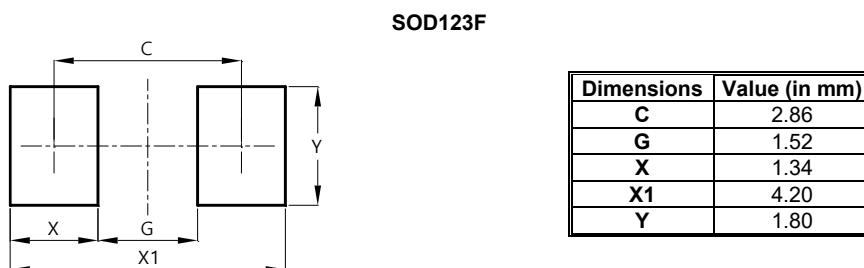
Package Outline Dimensions

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



Suggested Pad Layout

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



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