



SBR3U60P1

3A SBR SUPER BARRIER RECTIFIER POWERDI

Product Summary

V _{RRM} (V)	I _O (A)	I _O (A) V _F Max (V)			
60	3	0.65	100		

Description

The SBR3U60P1 is a single rectifier in the PowerDI[®]123 package, offering excellent high-temperature stability and low forward voltage.

Applications

- Bridge Diodes
- Flyback Diodes
- Blocking Diodes

Notes:

Reverse Protection Diodes

Features and Benefits

- Ultra Low Forward Voltage Drop
- Low Reverse Leakage Current
- Patented Super Barrier Rectifier SBR[®] Technology
- Patented Interlocking Clip Design for High Surge Current Capacity
- Soft, Fast Switching Capability
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- An Automotive-Compliant Part is Available Under Separate Datasheet (<u>SBR3U60P1Q</u>)

Mechanical Data

- Case: PowerDI123
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity Indicator: Cathode Band
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 🞉
- Weight: 0.018 grams (Approximate)

PowerDI123



Top View

Device Symbol

Ordering Information (Note 4)

			A 1 1
Part Number	Compliance	Case	Packaging
SBR3U60P1-7	AEC-Q101	POWERDI123	3,000/Tape & Reel
SBR3U60P1-13	AEC-Q101	POWERDI123	10,000/Tape & Reel

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

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 http://www.diodes.com/products/packages.html.

and Lead-free.



Marking Information



3U6 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: F = 2018) M = Month (ex: 9 = September)

Date Code Key

Year	201	8	2019		2020	20	21	2022		2023	2	2024
Code	F		G		Н			J		K		L
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D

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
RMS Reverse Voltage	V _{R(RMS)}	42	V
Average Rectified Output Current	lo	3.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	80	А
Repetitive Peak Avalanche Energy (1µs, +25°C)	P _{ARM}	2,100	W

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Soldering (Note 5) Thermal Resistance Junction to Ambient (Note 6)	R _{0JS} R _{0JA}	5 125	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	VF			0.650	V	$I_F = 3.0A, T_J = +25^{\circ}C$
Leakage Current (Note 7)	I _R			100	μA	$V_{R} = 60V, T_{J} = +25^{\circ}C$

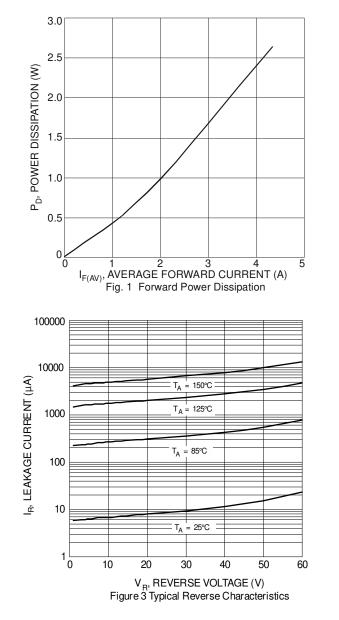
Notes: 5. Theoretical $R_{\theta,JS}$ calculated from the top center of the die straight down to the PCB cathode tab solder junction.

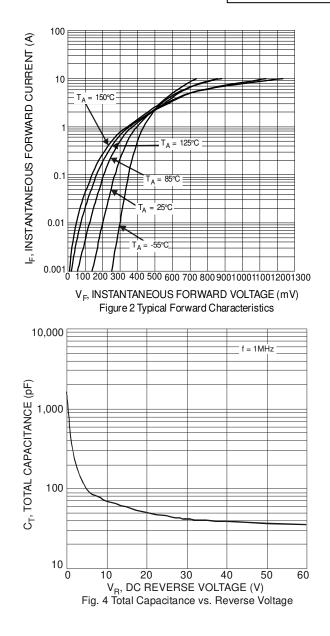
6. FR-4 PCB, 2 oz. copper, minimum recommended pad layout per http://www.diodes.com/package-outlines.html.

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

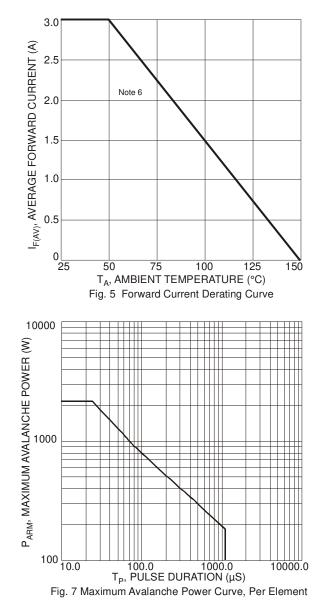


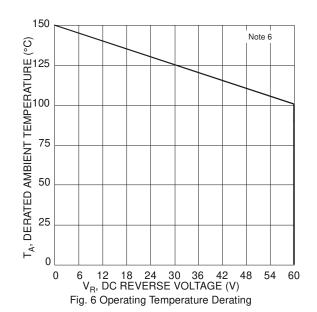
SBR3U60P1







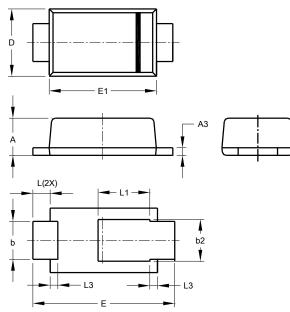






Package Outline Dimensions

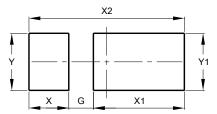
Please see http://www.diodes.com/package-outlines.html for the latest version.



POWERDI123						
Dim	Min	Max	Тур			
Α	0.93	1.00	0.98			
A3	0.15	0.25	0.20			
b	0.85	1.25	1.00			
b2	1.025	1.125	1.10			
D	1.63	1.93	1.78			
E	3.50	3.90	3.70			
E1	2.60	3.00	2.80			
L	0.40	0.50	0.45			
L1	1.25	1.40	1.35			
L3	0.125	0.275	0.20			
All Dimensions in mm						

Suggested Pad Layout

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



PowerDI123

Dimensions	Value (in mm)
G	0.65
X	1.05
X1	2.40
X2	4.10
Y	1.50
Y1	1.50

PowerDI123



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