



SBR15A30SP5

15A SBR® SUPER BARRIER RECTIFIER POWERDI®5

Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _{F(MAX)} (V) @ +25°C	I _{R(MAX)} (mA) @ +25°C
30	15	0.59	0.1

Description

Packaged in the compact thermally efficient POWERDI5 package, the SBR15A30SP5 provides very low V_F and excellent reverse leakage stability at high temperatures. It is ideal for use as a rectification, freewheeling or polarity protection diode.

Applications

- Solar Panels
- DC-DC Converters
- **AC-DC Adaptors**

Features and Benefits

- Low forward voltage drop (V_F) helps minimize power losses
- Excellent stability at higher temperatures
- Thermally efficient package for cooler running applications
- Less than 1.1mm package profile ideal for thin applications
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

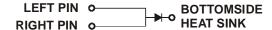
- Case: POWERDI5
- Case Material: Molded Plastic, "Green" Molding compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram Below
- Weight: 0.093 grams (approximate)

POWERDI5



Top View

Bottom View



Note: Pins Left & Right must be electrically connected at the printed circuit board.

Ordering Information

Part Number	Case	Packaging
SBR15A30SP5-13	POWERDI5	5000/Tape & Reel

Notes:

- 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.

Marking Information



S15A30S = Product Type Marking Code YYWW = Date Code Marking YY = Last Two Digits of Year (ex: 14 = 2014) K = Factory Designator



Maximum Ratings (@ $T_A = +25^{\circ}C$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM}	30	V
Average Rectified Output Current	lo	15	А
Non-Repetitive Peak Forward Surge Current 8.3mS	I _{FSM}	136	Α
Non-Repetitive Avalanche Energy (T _J = +25°C, I _{AS} = 10A, L = 10mH)	E _{AS}	460	mJ
Repetitive Peak Avalanche Energy (1µs, +25°C)	P _{ARM}	2700	W

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 4)	$R_{\theta JA}$	100	°C/W
Typical Thermal Resistance Junction to Case (Notes 4, 6	R _{θJC}	25	°C/W
Typical Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	20	°C/W
Typical Thermal Resistance Junction to Case (Notes 5, 6	R _{θJC}	3	°C/W
Operating Temperature Range VR ≤ 80% VRR VR ≤ 50% VRR DC Forward Mode (Note	M T _J	-65 to +150 ≤180 ≤200	°C
Storage Temperature Range	T _{STG}	-65 to +150	°C

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

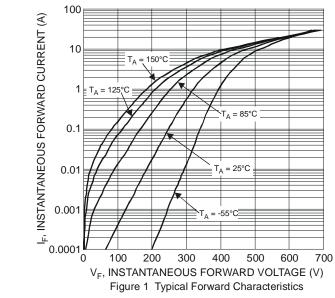
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
	V _F		0.42	0.52	>	I _F =7.5A, T _J = +25°C
Forward Valtage Dran		_	0.38	_		I _F =7.5A, T _J = +125°C
Forward Voltage Drop		_	0.54	0.59		I _F =15A, T _J = +25°C
			0.51			I _F =15A, T _J = +125°C
Laskana Cumant (Nata C)			0.03	0.1	A	V _R = 30V , T _J = +25°C
Leakage Current (Note 6)	IR	_	13	_	mA	$V_R = 30V$, $T_J = +125$ °C
Junction Capacitance	C _T		300	_	pF	V _R = 15V , T _J = +25°C

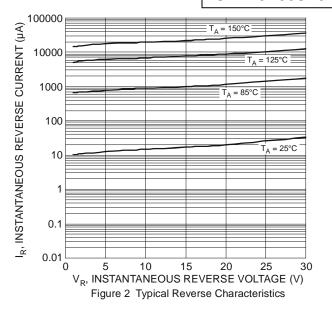
Notes:

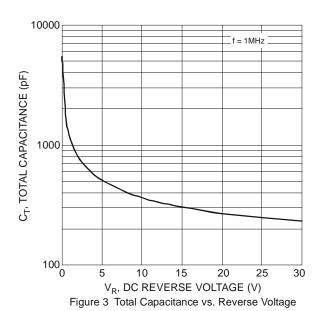
- 4. Device mounted on FR4 PCB with minimum recommended pad layout per http://www.diodes.com.
- 5. Device mounted on FR4 PCB with 1inch pad layout and additional HK2 (45mm x 20mm x12mm).
- 6. Short duration pulse test used to minimize self-heating effect.
- 7. Max junction temperature guaranteed for 2 hours.

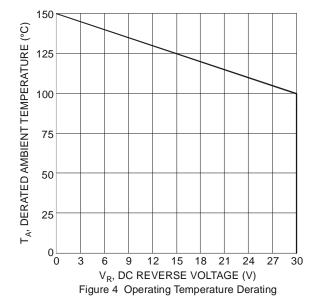




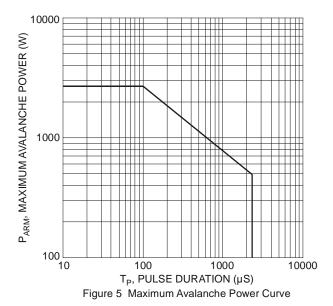


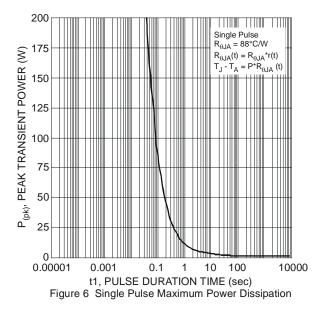


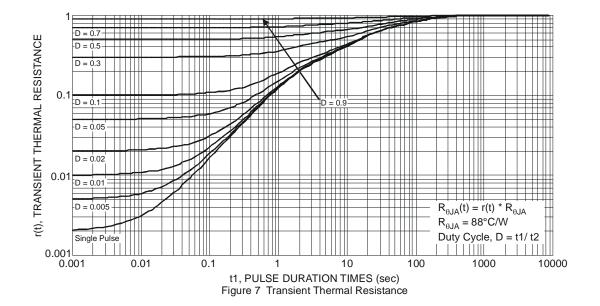








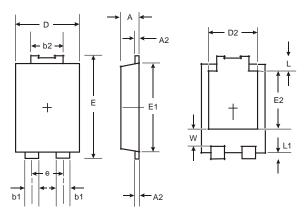






Package Outline Dimensions

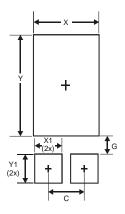
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



POWERDI [®] 5				
Dim	Min	Max		
Α	1.05	1.15		
A2	0.33	0.43		
b1	0.80	0.99		
b2	1.70	1.88		
D	3.90	4.05		
D2	3.054 Typ			
Е	6.40	6.60		
e	1.84 Typ			
E1	5.30	5.45		
E2	3.549 Typ			
L	0.75	0.95		
L1	0.50	0.65		
W	1.10	1.41		
All Dimensions in mm				

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
C	1.840
G	0.852
Х	3.360
X1	1.390
Y	4.860
V1	1.400



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