

Features

- Designed as Bypass Diodes for Solar Panels
- Selectively Rated for 200°C Maximum Junction Temperature for High Thermal Reliability
- Patented Super Barrier Rectifier Technology
- High Forward Surge Capability
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- **Lead Free Finish, RoHS Compliant (Note 1)**

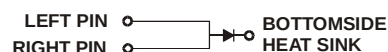
Mechanical Data

- Case: POWERDI5
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 
- Weight: 0.093 grams (approximate)

POWERDI5

Top View

Bottom View



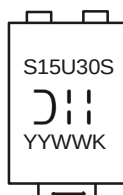
Note: Pins Left & Right must be electrically connected at the printed circuit board.

Ordering Information (Note 2)

Part Number	Case	Packaging
SBR15U30SP5-13	POWERDI5	5000/Tape & Reel

Notes: 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



S15U30S = Product Type Marking Code
 = Manufacturers' Code Marking
 K = Factory Designator
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 11 for 2011)
 WW = Week code (01 - 53)

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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	V _{RRM}	30	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
RMS Reverse Voltage	V _{R(RMS)}	21	V
Average Rectified Output Current	I _O	15	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	280	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance	R _{θJA}	26	°C/W
Thermal Resistance Junction to Ambient (Note 3)			
Operating Temperature Range	V _R ≤ 80% V _{RRM}	-65 to +150	°C
	V _R ≤ 50% V _{RRM}	≤180	
	DC Forward Mode	≤200	
Storage Temperature Range	T _{STG}	-65 to +175	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (Per Leg)	V _F	-	-	0.49 0.42	V	I _F = 15A, T _J = 25°C I _F = 15A, T _J = 125°C
Leakage Current (Note 4)	I _R	-	-	0.5 100	mA	V _R = 30V, T _J = 25°C V _R = 30V, T _J = 125°C

Notes: 3. Polyimide, 2oz. Copper 16x minimum recommended pad layout per <http://www.diodes.com>
 4. Short duration pulse test used to minimize self-heating effect.

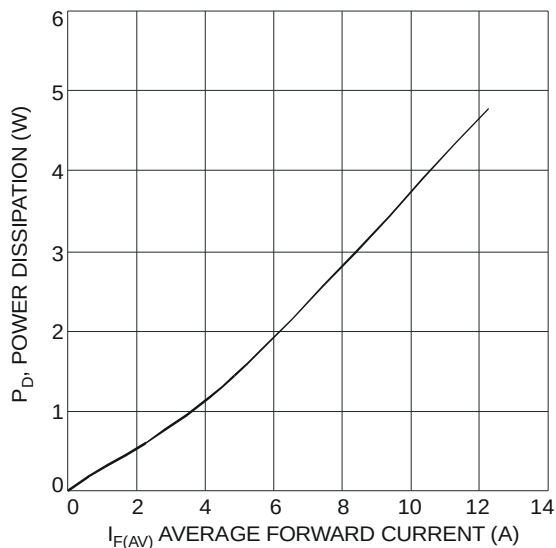


Fig. 1 Forward Power Dissipation

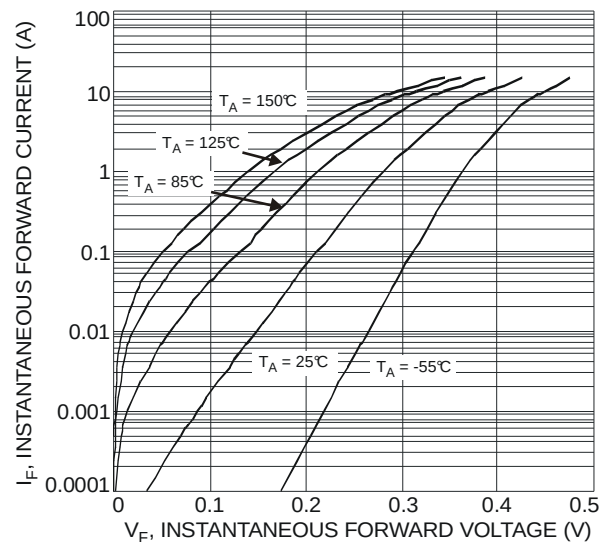


Fig. 2 Typical Forward Characteristics

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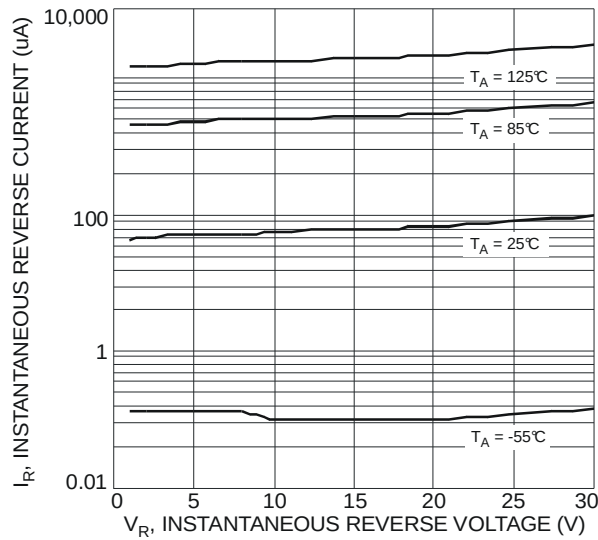


Fig. 3 Typical Reverse Characteristics

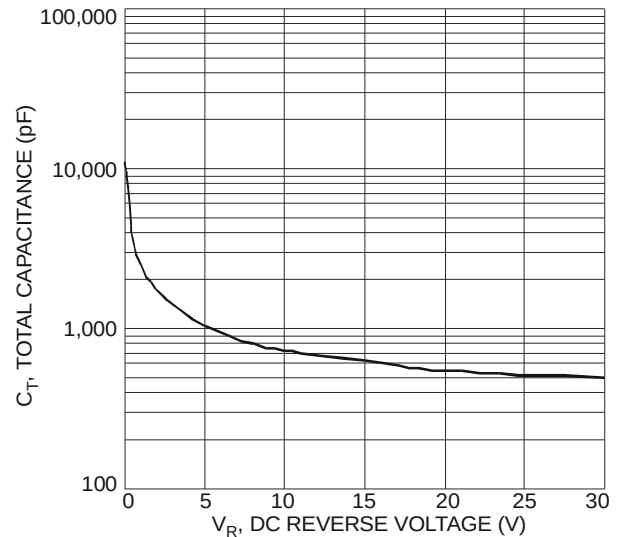


Fig. 4 Total Capacitance vs. Reverse Voltage

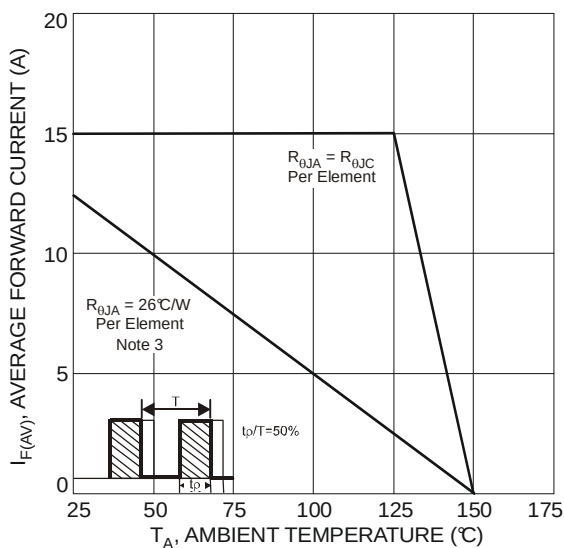


Fig. 5 Forward Current Derating Curve

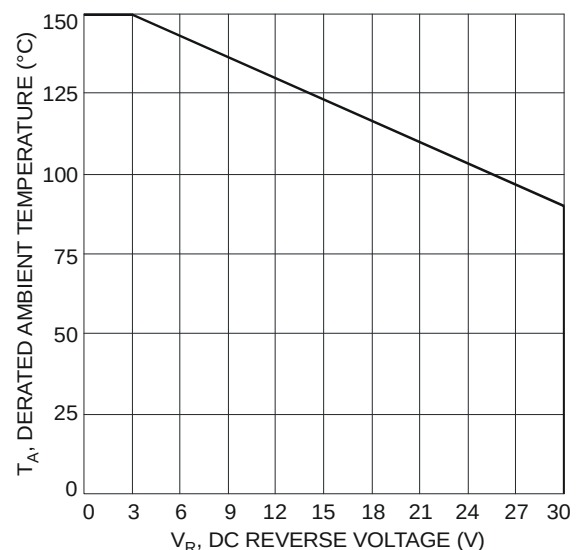
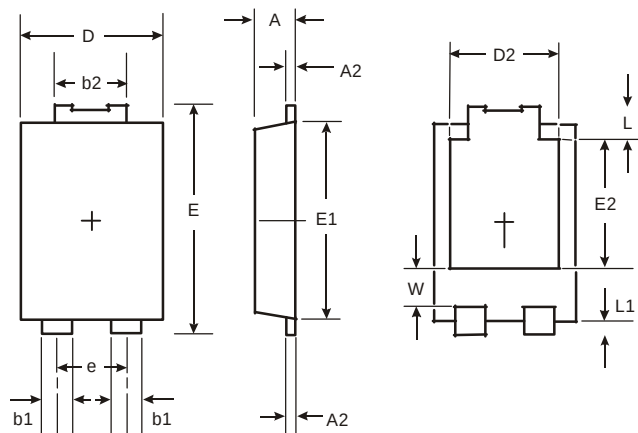


Fig. 6 Operating Temperature Derating

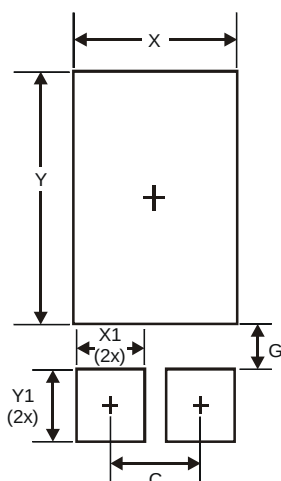
Package Outline Dimensions



POWERDI5		
Dim	Min	Max
A	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	
E	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		

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Suggested Pad Layout



Dimensions	Value (in mm)
C	1.840
G	0.852
X	3.360
X1	1.390
Y	4.860
Y1	1.400

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