NEW PRODUCT

DSR8U600

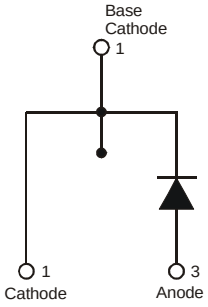
8A DIODESTAR RECTIFIER

Features

- DIODESTAR™ is a Proprietary Process for High Voltage Rectifiers which Delivers:
  - Ultra-Fast Reverse Recovery (t_{rr} < 30ns) Giving a Rapid Switching Response
  - Soft Recovery for Low EMI Noise
  - Excellent High Temperature Stability
  - High Forward Surge Capability
- Enables High Efficiency as the Boost Diode in PFC Circuits
- **Lead Free Finish, RoHS Compliant (Note 1)**

Mechanical Data

- Case: TO-220AC
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 e3



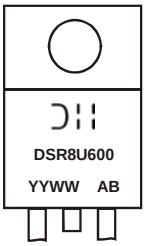
Package Pin Out Configuration

Ordering Information (Note 2)

Part Number	Case	Packaging
DSR8U600	TO-220AC	50 pieces/tube

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
2. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



DSR8U600 = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last two digits of year (ex: 10 = 2010)
WW = Week (01 - 53)

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Maximum Ratings @T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	600	V
Average Rectified Output Current	I_O	8	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	85	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (Note 3)	$R_{\theta JC}$	2	ºC/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	ºC

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	-	-	2.5	V	I_F = 8A, T_J = 25ºC
		-	1.3	1.8		I_F = 8A, T_J = 125ºC
Leakage Current (Note 4)	I_R	-	-	20	µA	V_R = 600V, T_J = 25ºC
		-	-	200		V_R = 600V, T_J = 125ºC
Reverse Recovery Time	t_{rr}	-	23	28	ns	I_F = 1A, V_R = 30V, di/dt = 100A/µs
Softness Factor	S	-	1.0	-	-	I_F = 8A, dI/dt = 50A/µs, V_R = 400V, T_J = 25ºC
Reverse Recovery Current	I_{RM}	-	1.4	-	A	
Reverse Recovery Charges	Q_{rr}	-	74	-	nC	
Softness Factor	S	-	0.6	-	-	I_F = 8A, dI/dt = 50A/µs, V_R = 400V, T_J = 125ºC
Reverse Recovery Current	I_{RM}	-	2.5	-	A	
Reverse Recovery Charges	Q_{rr}	-	185	-	nC	
Junction Capacitance	C_J	-	55	-	pF	4.0V, 1MHz

Notes: 3. Test with additional heatsink, (Black Aluminum, 45mm*20mm*12mm)
4. Short duration pulse test used to minimize self-heating effect.

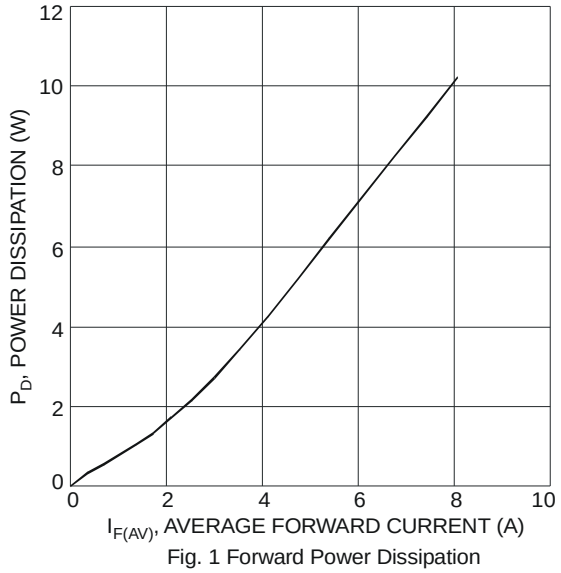

Fig. 1 Forward Power Dissipation

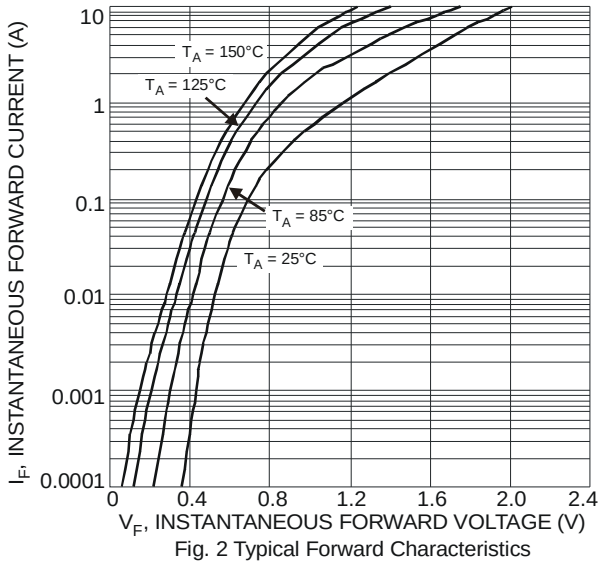

Fig. 2 Typical Forward Characteristics

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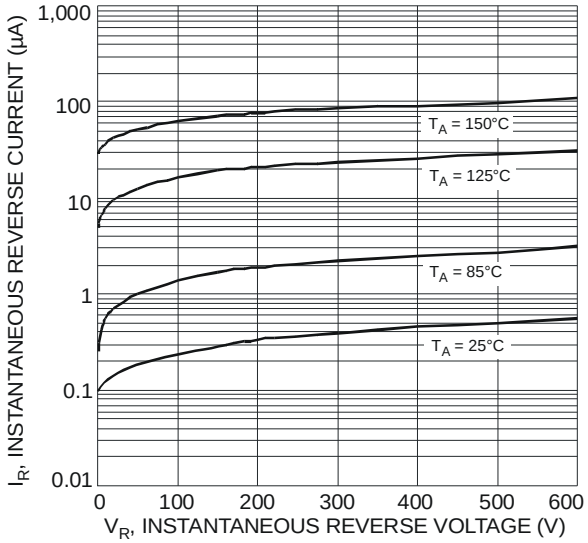


Fig. 3 Typical Reverse Characteristics

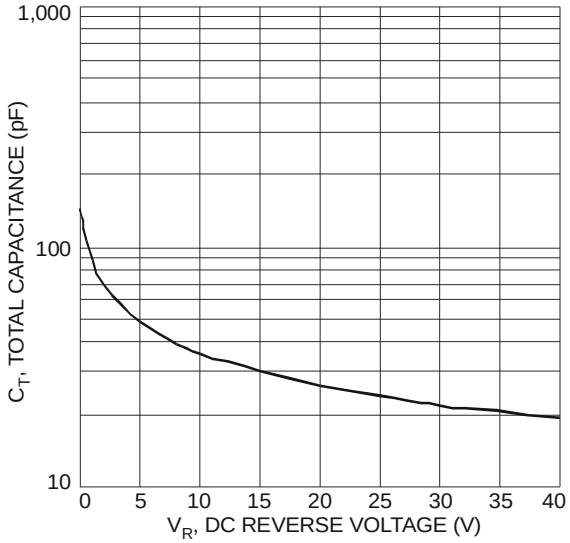


Fig. 4 Total Capacitance vs. Reverse Voltage

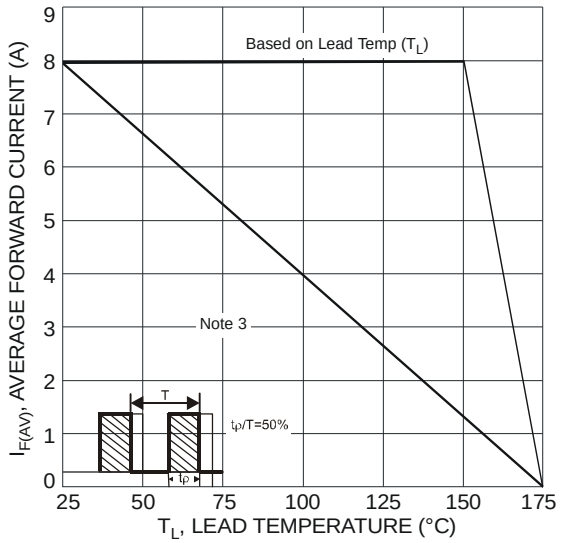


Fig. 5 Forward Current Derating Curve

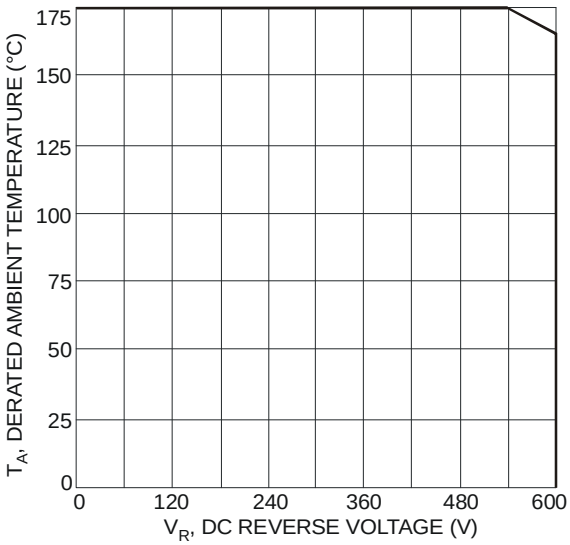
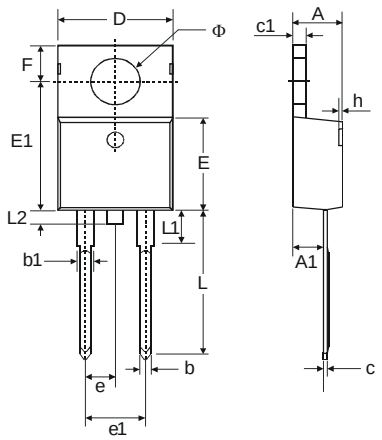


Fig. 6 Operating Temperature Derating

Package Outline Dimensions



TO-220AC		
Dim	**Min**	**Max**
A	4.47	4.67
A1	2.52	2.82
b	0.71	0.91
b1	1.17	1.37
c	0.31	0.53
c1	1.17	1.37
D	10.01	10.31
E	8.50	8.90
E1	12.06	12.46
e	2.54 Typ	
e1	4.98	5.18
F	2.59	2.89
h	0.00	0.30
L	13.40	13.80
L1	3.56	3.96
L2	-	1.00
Φ	3.735	3.935
All Dimensions in mm		

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