

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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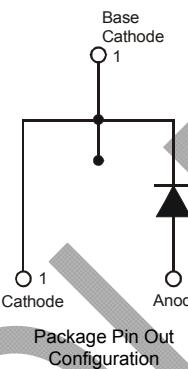
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Features

- DIODESTAR™ is a Proprietary Process for High Voltage Rectifiers which Delivers:
 - Ultra-Fast Reverse Recovery ($t_{rr} < 30\text{ns}$) 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

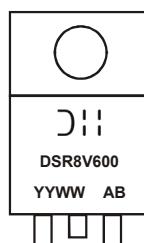
- Case: TO220AC
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (e3)

**Ordering Information** (Note 2)

Part Number	Case	Packaging
DSR8V600	TO220AC	50 pieces/tube
DSR8V600-G	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>.
3. For Green Molding compound version part numbers, add "G" suffix to part number above Examples: DSR8V600-G.

Marking Information

DSR8V600 = 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)

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}		
Working Peak Reverse Voltage	V_{RWM}	600	V
DC Blocking Voltage	V_{RM}		
Average Rectified Output Current	I_O	8	A
Non-Repetitive Peak Forward Surge Current 8.3ms	I_{FSM}	65	A
Single Half Sine-Wave Superimposed on Rated Load			

Thermal Characteristics

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

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	-	-	3.2	V	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$
		-	1.7	2.8		$I_F = 8\text{A}, T_J = 125^\circ\text{C}$
Leakage Current (Note 4)	I_R	-	-	20	μA	$V_R = 600\text{V}, T_J = 25^\circ\text{C}$
		-	66.5	300		$V_R = 600\text{V}, T_J = 125^\circ\text{C}$
Reverse Recovery Time	t_{rr}	-	18	23	ns	$I_F = 1\text{A}, V_R = 30\text{V},$ $\text{d}i/\text{d}t = 100\text{A}/\mu\text{s}$
		-	11.5	20		$I_F = 1\text{A}, V_R = 30\text{V},$ $\text{d}i/\text{d}t = 200\text{A}/\mu\text{s}$
Softness Factor	S	-	1.0	-	-	
Reverse Recovery Current	I_{RM}	-	1.0	-	A	$I_F = 8\text{A}, \text{d}i/\text{d}t = 50\text{A}/\mu\text{s},$ $V_R = 400\text{V}, T_J = 25^\circ\text{C}$
Reverse Recovery Charges	Q_{rr}	-	34	-	nC	
Softness Factor	S	-	0.6	-	-	
Reverse Recovery Current	I_{RM}	-	2.0	-	A	$I_F = 8\text{A}, \text{d}i/\text{d}t = 50\text{A}/\mu\text{s},$ $V_R = 400\text{V}, T_J = 125^\circ\text{C}$
Reverse Recovery Charges	Q_{rr}	-	114	-	nC	
Junction Capacitance (Note 5)	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.

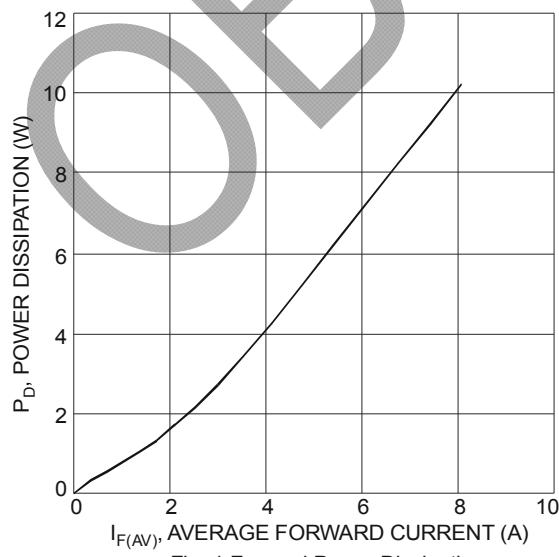
5. To evaluate the maximum conduction losses use the following equation: $P = 1.2 \times I_{F(AV)} + 0.087 I_F^2$ (RMS)

Fig. 1 Forward Power Dissipation

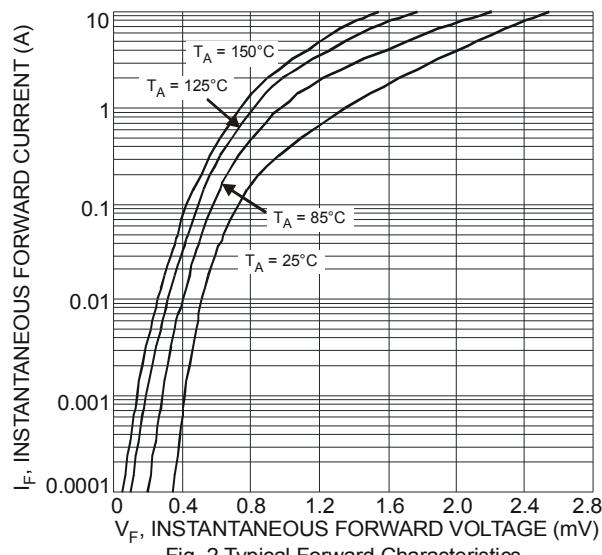


Fig. 2 Typical Forward Characteristics

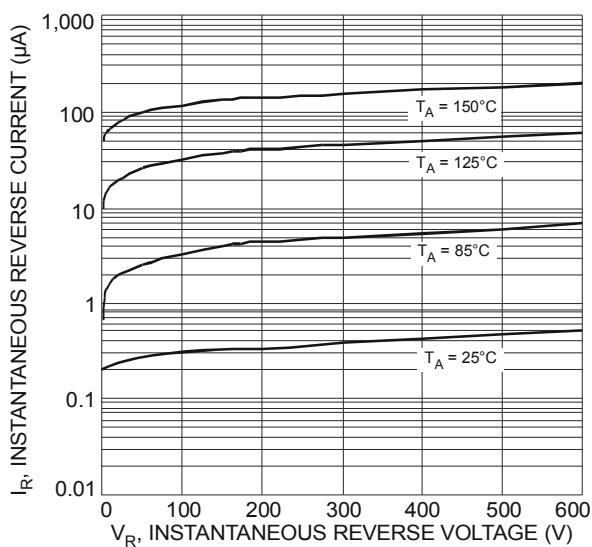


Fig. 3 Typical Reverse Characteristics

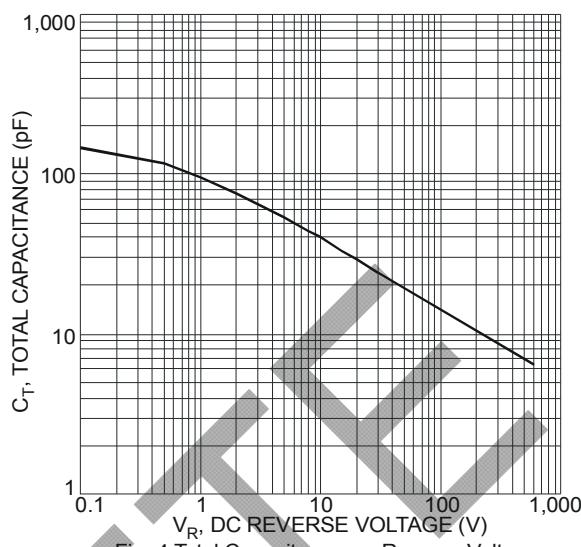


Fig. 4 Total Capacitance vs. Reverse Voltage

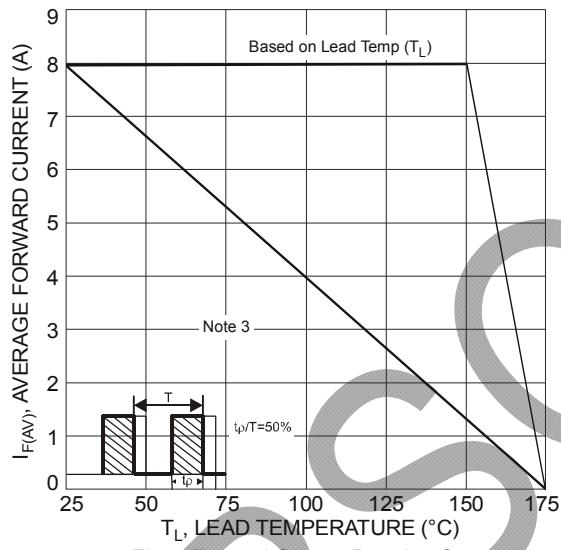


Fig. 5 Forward Current Derating Curve

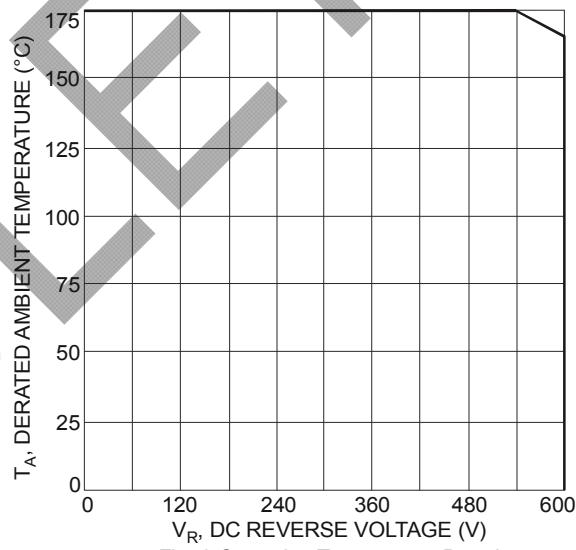
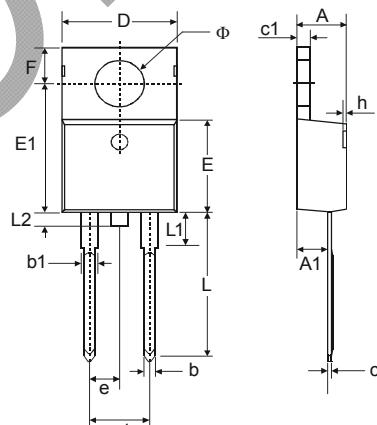


Fig. 6 Operating Temperature Derating

Package Outline Dimensions



TO220AC		
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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