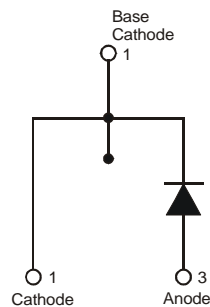


## Features

- 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



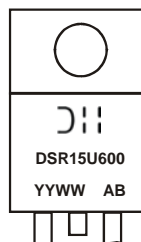
Package Pin Out Configuration

## Ordering Information (Note 2)

Part Number	Case	Packaging
DSR15U600	TO220AC	50 pieces/tube
DSR15U600-G	TO220AC	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: DSR15U600-G

## Marking Information



DSR15U600 = 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	$V_{RRM}$	600	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current	$I_O$	15	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	150	A
Repetitive Peak Avalanche Power (1 $\mu\text{s}$ , 25 $^\circ\text{C}$ )	$P_{ARM}$	5,000	W

**Thermal Characteristics**

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

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	$V_F$	-	-	2.4	V	$I_F = 15\text{A}, T_J = 25^\circ\text{C}$
Leakage Current (Note 3)	$I_R$	-	-	50	$\mu\text{A}$	$V_R = 600\text{V}, T_J = 25^\circ\text{C}$
Reverse Recovery Time	$t_{rr}$	-	-	35	ns	$I_F = 1\text{A}, V_R = 30\text{V}, di/dt = 100\text{A}/\mu\text{s}$
Softness Factor	S	-	1.0	-	-	$I_F = 15\text{A}, di/dt = 200\text{A}/\mu\text{s}, V_R = 400\text{V}, T_J = 25^\circ\text{C}$
Reverse Recovery Current	$I_{RM}$	-	5.0	-	A	
Reverse Recovery Charges	$Q_{rr}$	-	192	-	nC	$I_F = 15\text{A}, di/dt = 200\text{A}/\mu\text{s}, V_R = 400\text{V}, T_J = 125^\circ\text{C}$
Softness Factor	S	-	0.6	-	-	
Reverse Recovery Current	$I_{RM}$	-	8.0	-	A	$I_F = 15\text{A}, di/dt = 200\text{A}/\mu\text{s}, V_R = 400\text{V}, T_J = 125^\circ\text{C}$
Reverse Recovery Charges	$Q_{rr}$	-	450	-	nC	
Junction Capacitance	$C_J$	-	80	-	pF	4.0V, 1MHz

Notes: 3. Short duration pulse test used to minimize self-heating effect.

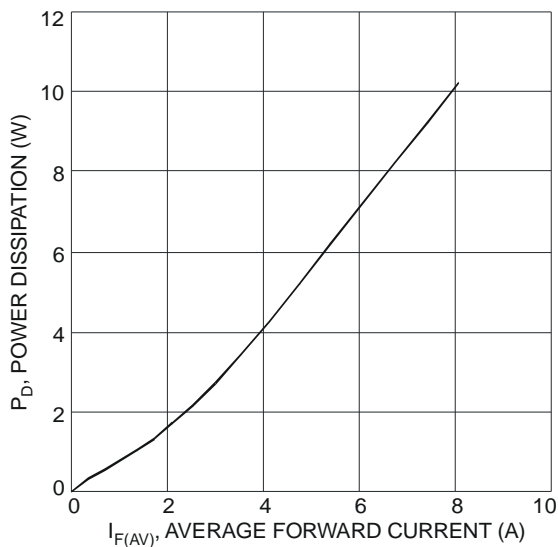


Fig. 1 Forward Power Dissipation

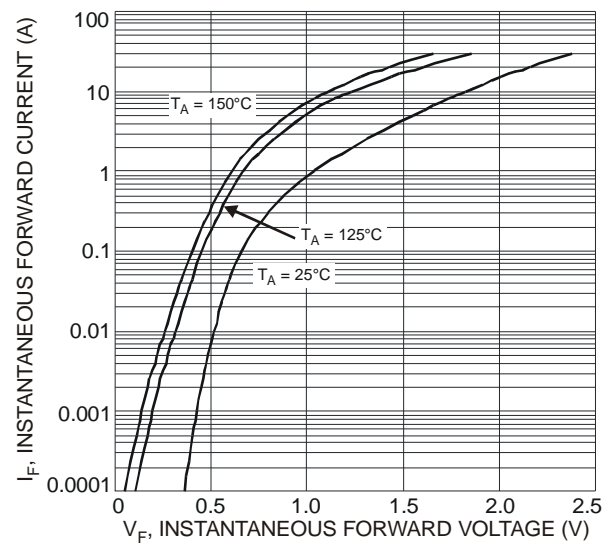
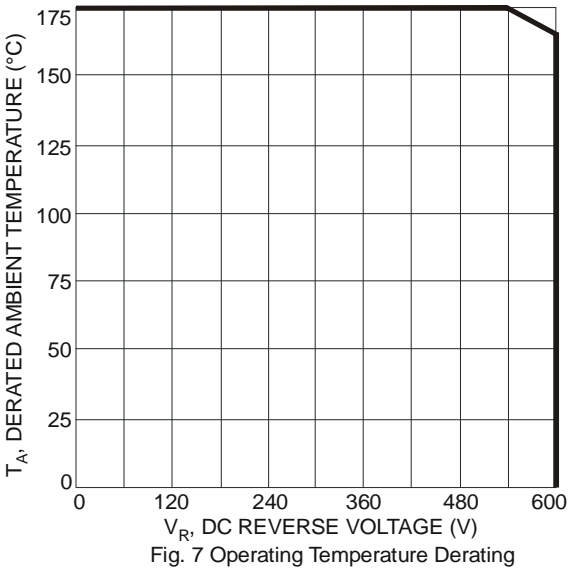
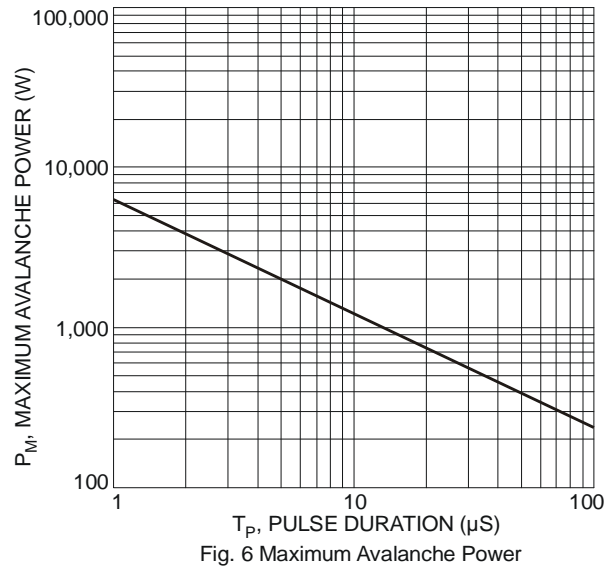
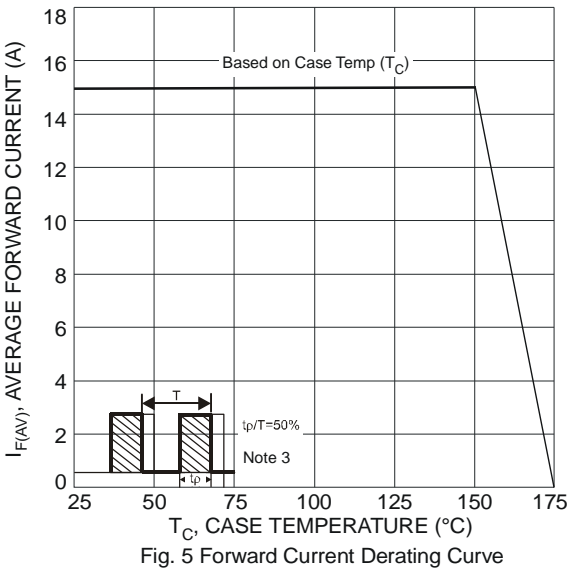
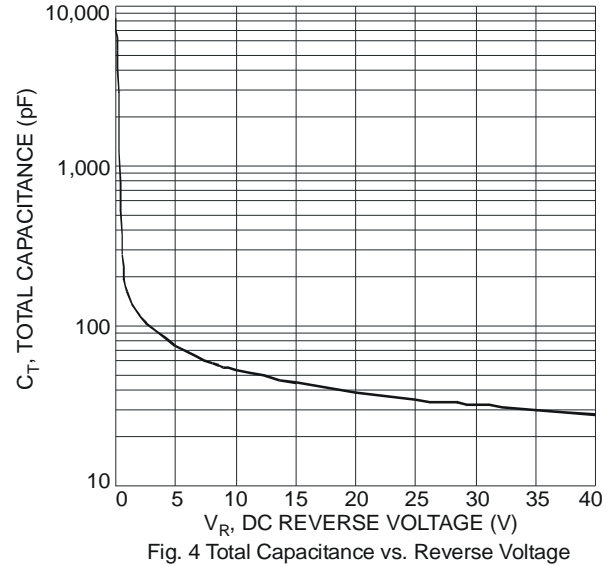
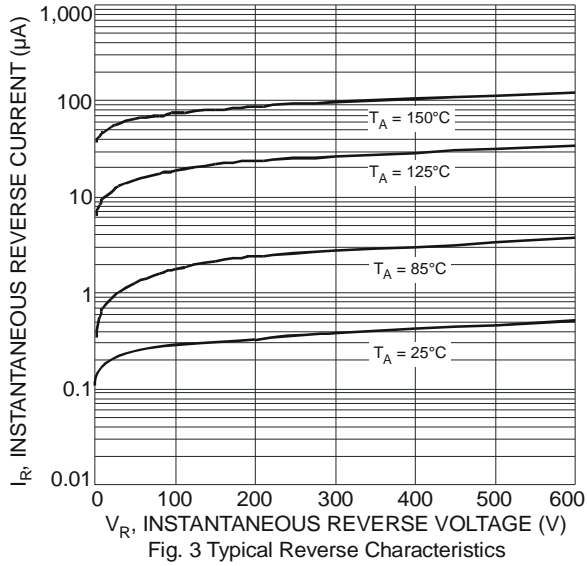
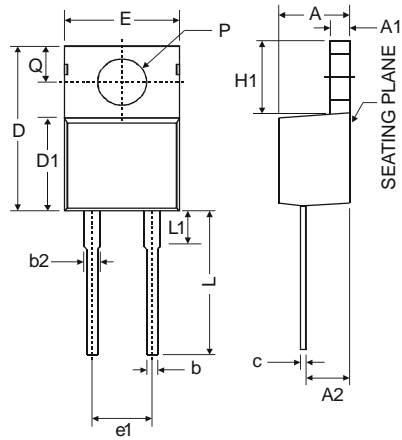


Fig. 2 Typical Forward Characteristics



**Package Outline Dimensions**



TO220AC			
Dim	Min	Typ	Max
A	3.56	-	4.82
A1	0.51	-	1.39
A2	2.04	-	2.92
b	0.39	0.81	1.01
b2	1.15	1.24	1.77
c	0.356	-	0.61
D	14.22	-	16.51
D1	8.39	-	9.01
e1	5.08		
E	9.66	-	10.66
H1	5.85	-	6.85
L	12.70	-	14.73
L1	-	-	6.35
P	3.54	-	4.08
Q	2.54	-	3.42
<b>All Dimensions in mm</b>			

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