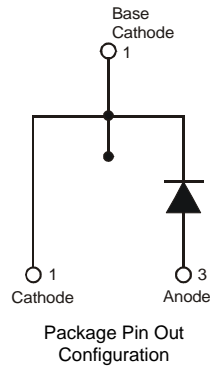


### Features

- 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 <sup>Ⓔ3</sup>

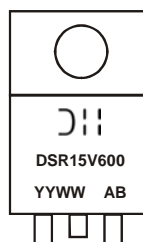


### Ordering Information (Note 2)

Part Number	Case	Packaging
DSR15V600	TO220AC	50 pieces/tube
DSR15V600-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: DSR15V600-G

### Marking Information



DSR15V600 = 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<sub>A</sub> = 25°C unless otherwise specified

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	600	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	15	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	140	A
Repetitive Peak Avalanche Power (1μs, 25°C)	P <sub>ARM</sub>	10,000	W

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance	R <sub>θJC</sub>	2	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	-	-	3.2	V	I <sub>F</sub> = 15A, T <sub>J</sub> = 25°C
Leakage Current (Note 4)	I <sub>R</sub>	-	-	50	μA	V <sub>R</sub> = 600V, T <sub>J</sub> = 25°C
Reverse Recovery Time	t <sub>rr</sub>	-	23	30	ns	I <sub>F</sub> = 1A, V <sub>R</sub> = 30V, di/dt = 100A/μs
Softness Factor	S	-	1.0	-	-	I <sub>F</sub> = 15A, di/dt = 200A/μs, V <sub>R</sub> = 400V, T <sub>J</sub> = 25°C
Reverse Recovery Current	I <sub>RM</sub>	-	3.6	-	A	
Reverse Recovery Charges	Q <sub>rr</sub>	-	87	-	nC	
Softness Factor	S	-	0.6	-	-	I <sub>F</sub> = 15A, di/dt = 200A/μs, V <sub>R</sub> = 400V, T <sub>J</sub> = 125°C
Reverse Recovery Current	I <sub>RM</sub>	-	6.9	-	A	
Reverse Recovery Charges	Q <sub>rr</sub>	-	256	-	nC	
Junction Capacitance	C <sub>J</sub>	-	80	-	pF	4.0V, 1MHz

Notes: 4. Short duration pulse test used to minimize self-heating effect.

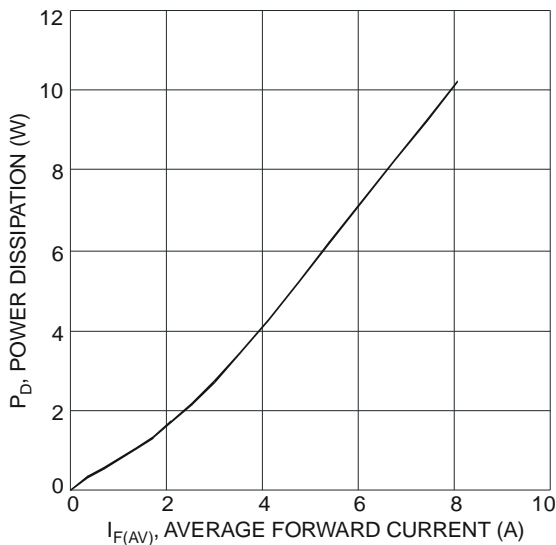


Fig. 1 Forward Power Dissipation

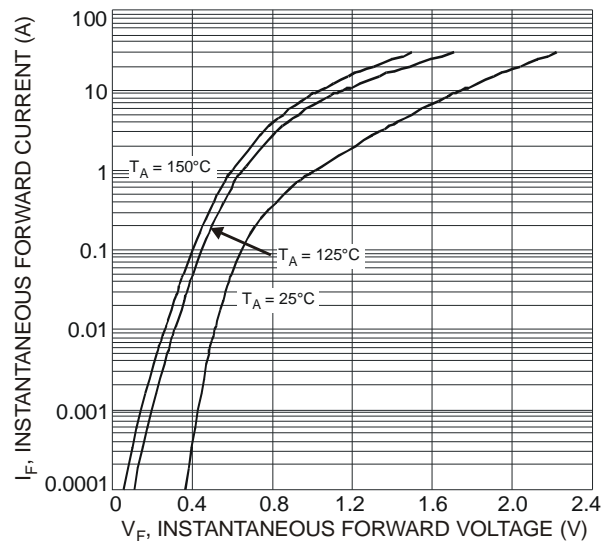
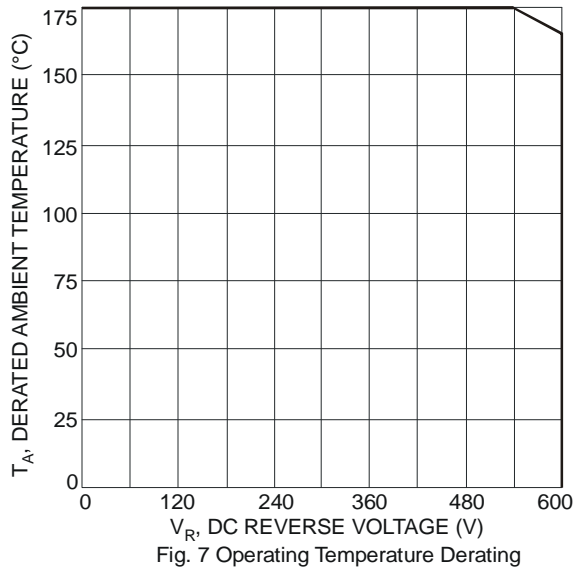
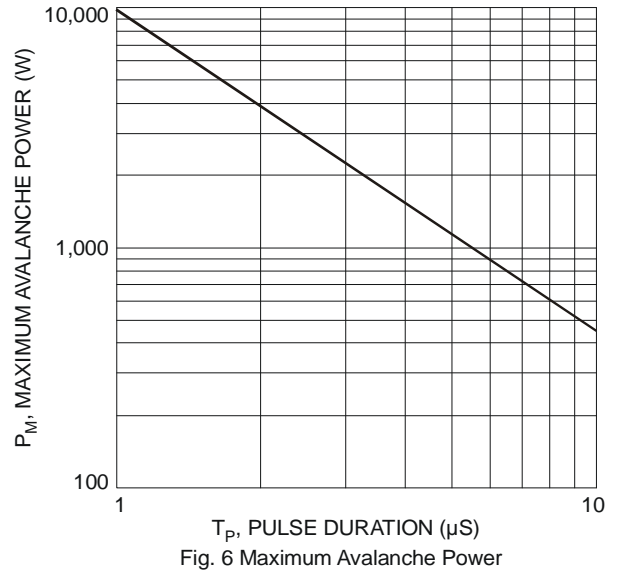
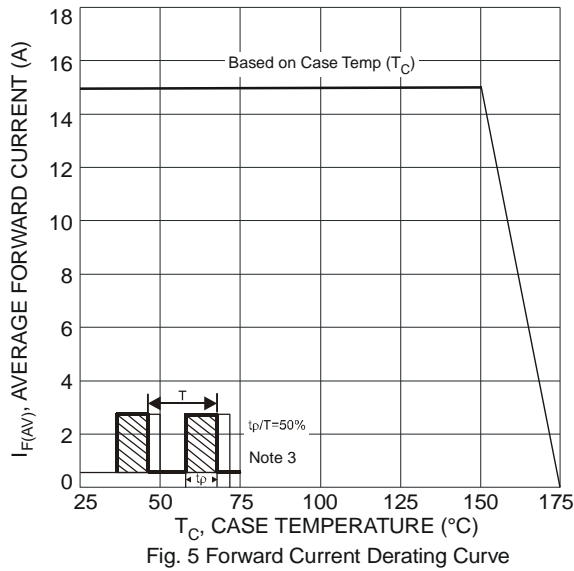
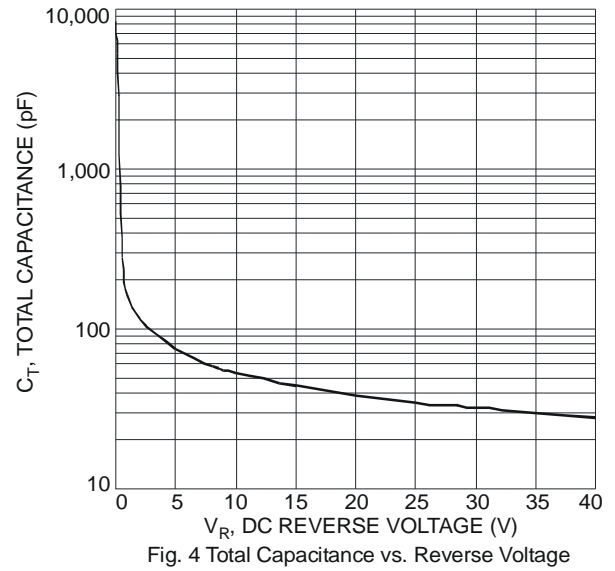
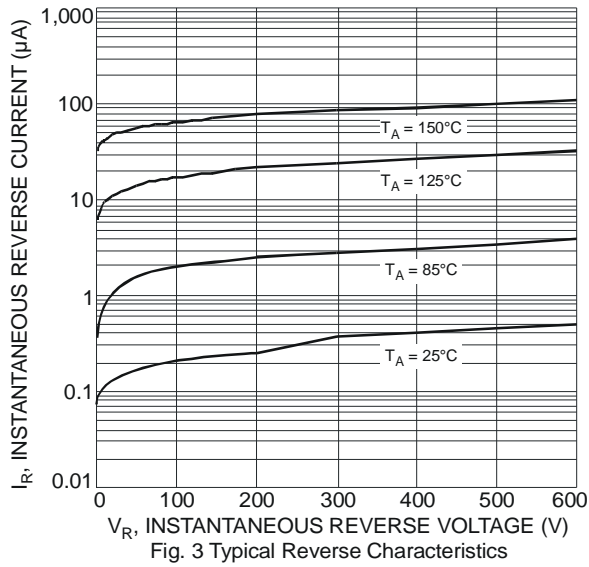
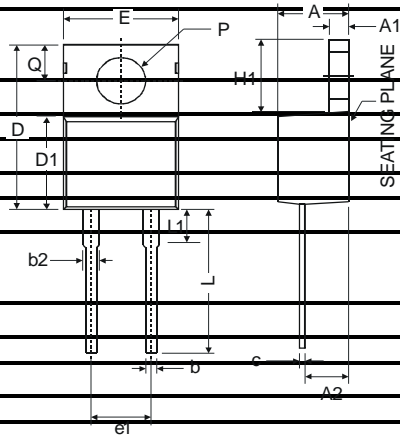


Fig. 2 Typical Forward Characteristics



**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		
F	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
All Dimensions in mm			

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