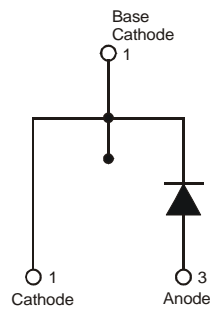


Features

- 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: 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 ^{Ⓔ3}



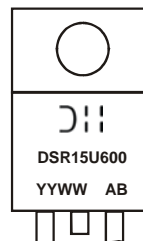
Package Pin Out Configuration

Ordering Information (Note 2)

| Part Number | Case | Packaging |
|-------------|----------|----------------|
| DSR15U600 | 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



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°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 |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance | R _{θJC} | 2 | °C/W |
| Operating and Storage Temperature Range | T _J , 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 | V _F | - | - | 2.4 | V | I _F = 15A, T _J = 25°C |
| Leakage Current (Note 3) | I _R | - | - | 50 | μA | V _R = 600V, T _J = 25°C |
| Reverse Recovery Time | t _{rr} | - | - | 35 | ns | I _F = 1A, V _R = 30V, di/dt = 100A/μs |
| Softness Factor | S | - | 1.0 | - | - | I _F = 15A, di/dt = 200A/μs, V _R = 400V, T _J = 25°C |
| Reverse Recovery Current | I _{RM} | - | 5.0 | - | A | |
| Reverse Recovery Charges | Q _{rr} | - | 192 | - | nC | |
| Softness Factor | S | - | 0.6 | - | - | I _F = 15A, di/dt = 200A/μs, V _R = 400V, T _J = 125°C |
| Reverse Recovery Current | I _{RM} | - | 8.0 | - | A | |
| 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.

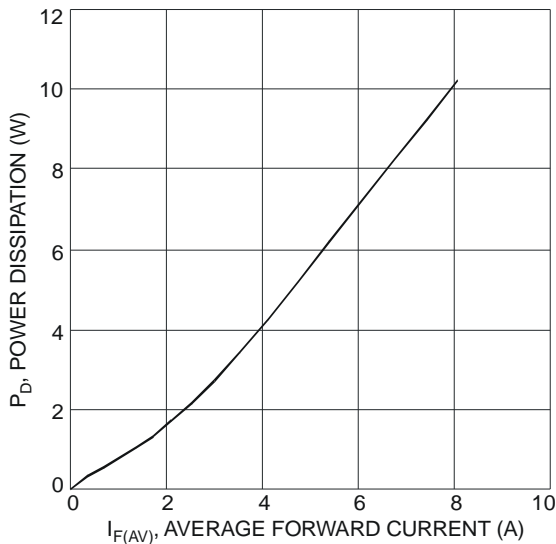


Fig. 1 Forward Power Dissipation

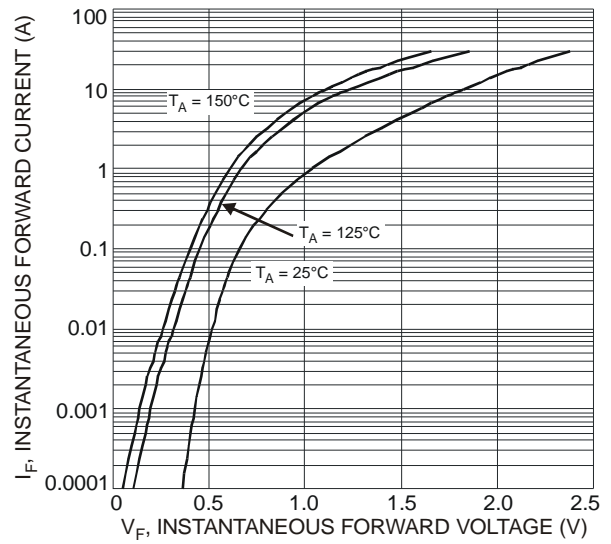
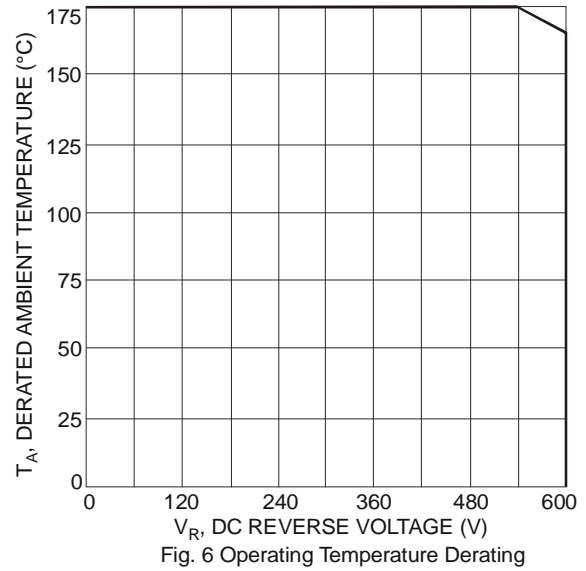
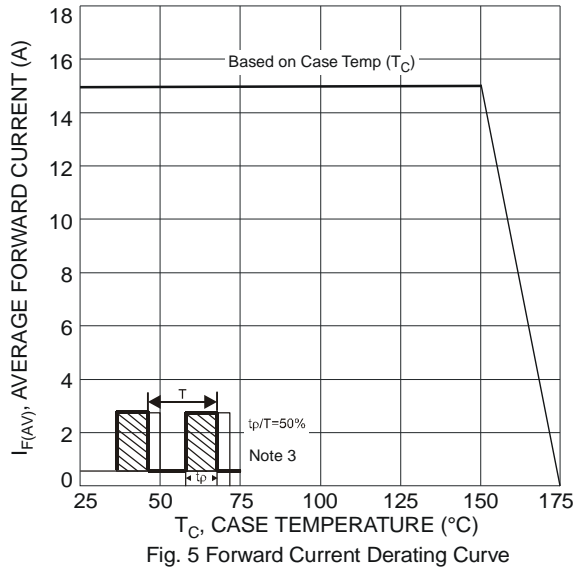
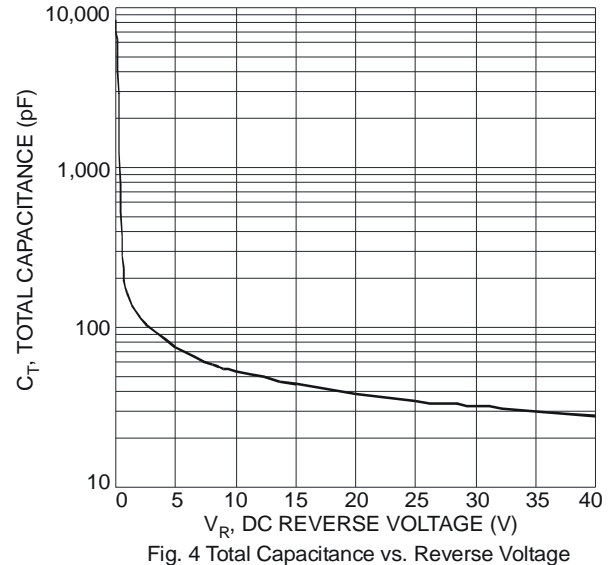
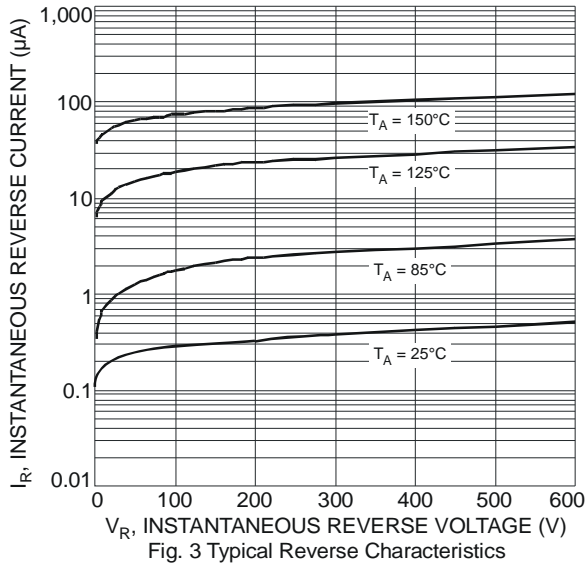
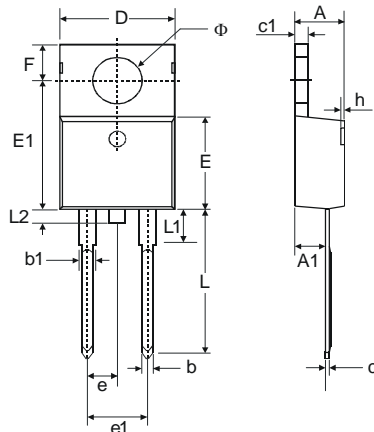


Fig. 2 Typical Forward Characteristics



Package Outline Dimensions



| 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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