

Features

- Low Leakage Current
- Low Forward Voltage Drop
- High Surge Capacity
- Soft, Fast Switch
- High Junction Temperature Capability

Product Summary

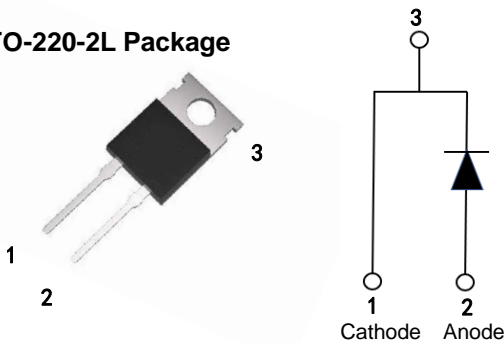
| | |
|-------|-------------------|
| V_R | 200V |
| I_F | 15A (Per Leg) |
| T_J | 150°C |
| V_F | 0.84V @15A (Typ.) |

Applications

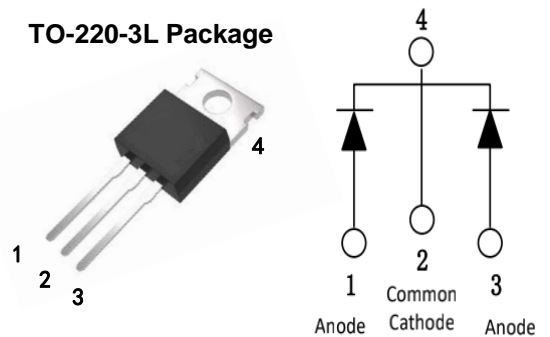
- AC-DC power adapter
- Rectifier, Convert



TO-220-2L Package



TO-220-3L Package



Package Marking and Ordering Information

| Part # | Marking | Package | Packing | Qty |
|-------------|---------|-----------|---------|-----|
| FSD20S15AT | D20S15 | TO-220-2L | Tube | 50 |
| FSD20S30TTD | D20S30D | TO-220-3L | Tube | 50 |

Maximum Ratings (Per Leg) @TA=25°C unless otherwise specified

| Symbol | Parameter | Values | Units |
|------------------------------------|---|-------------|-------|
| V_{RRM} V_{RWM} V_{RM} | Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | 200 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current Per Leg (Rate V_R) $T_C=150^\circ\text{C}$ Per Package | 15 | A |
| I_{FSM} | Non-repetitive Peak Surge Current (8.3ms, half sine wave) | 300 | A |
| I_{RRM} | Peak Repetitive Reverse Surge Current (2.0μs, 1.0kHz) | 2.5 | A |
| T_J | Operating Junction Temperature Range | -55 to +150 | °C |
| T_{stg} | Storage Temperature | -55 to +150 | °C |

**Thermal characteristics (Per Leg)**

| Symbol | Parameter | Values | | | Unit |
|------------|--|--------|------|------|------|
| | | Min. | Typ. | Max. | |
| R_{thJC} | Thermal resistance, Junction-case | - | - | 0.73 | °C/W |
| R_{thJA} | Thermal resistance, Junction-ambient(min. footprint) | - | - | 65 | °C/W |

Electrical Characteristics (Per Leg) @ $T_J = 25^\circ\text{C}$ unless otherwise specified

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|----------|-------------------------|--|------|------|------|---------------|
| V_F | Diode forward voltage | $I_F=7A, T_J=25^\circ\text{C}$ | - | 0.77 | 0.82 | V |
| | | $I_F=7A, T_J=150^\circ\text{C}$ | - | 0.61 | 0.69 | |
| | | $I_F=15A, T_J=25^\circ\text{C}$ | - | 0.84 | 0.89 | |
| | | $I_F=15A, T_J=150^\circ\text{C}$ | - | 0.70 | 0.79 | |
| I_R | Reverse current | $V_R=200V, T_J=25^\circ\text{C}$ | - | - | 3 | μA |
| | | $V_R=200V, T_J=150^\circ\text{C}$ | - | - | 1 | mA |
| T_{rr} | Reverse Recovery Time | $V_R=30V, I_F=1A,$ $di/dt=100A/\mu\text{S}, T_J=25^\circ\text{C}$ | - | 22 | - | nS |
| Q_{rr} | Reverse Recovery Charge | | - | 21 | - | μC |



Typical Performance Characteristics (Per Leg)

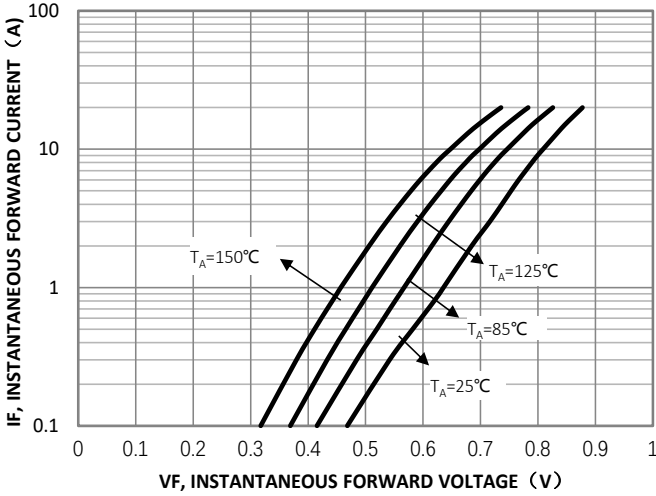


Fig1. Typical Forward Characteristics

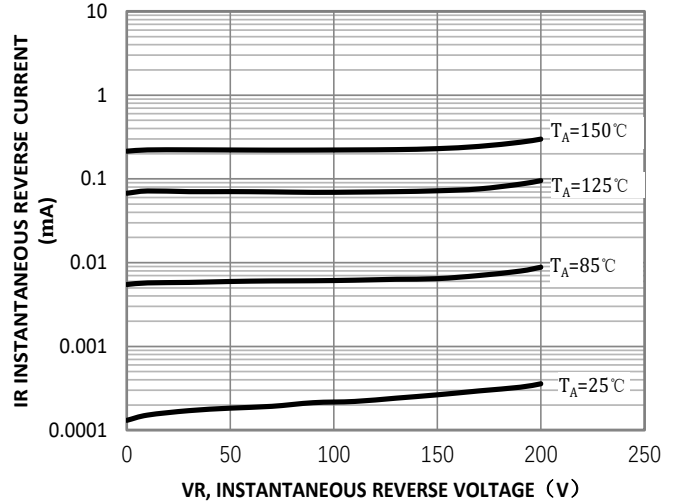


Fig2. Typical Reverse Characteristics

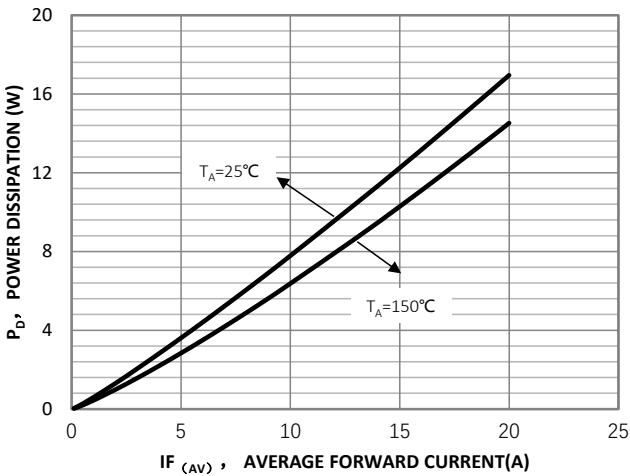


Fig3. Typical Power Dissipation

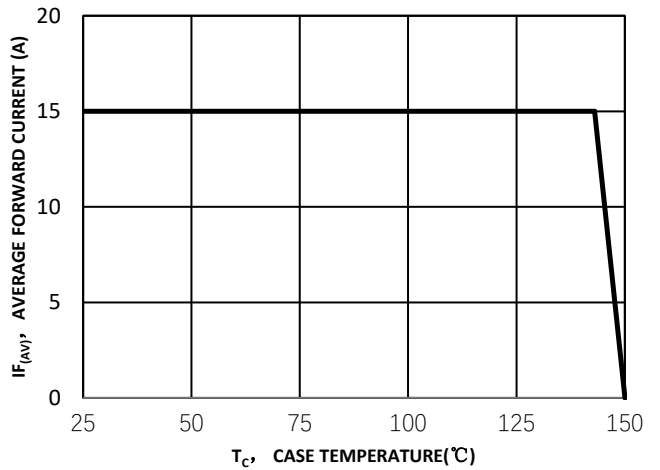
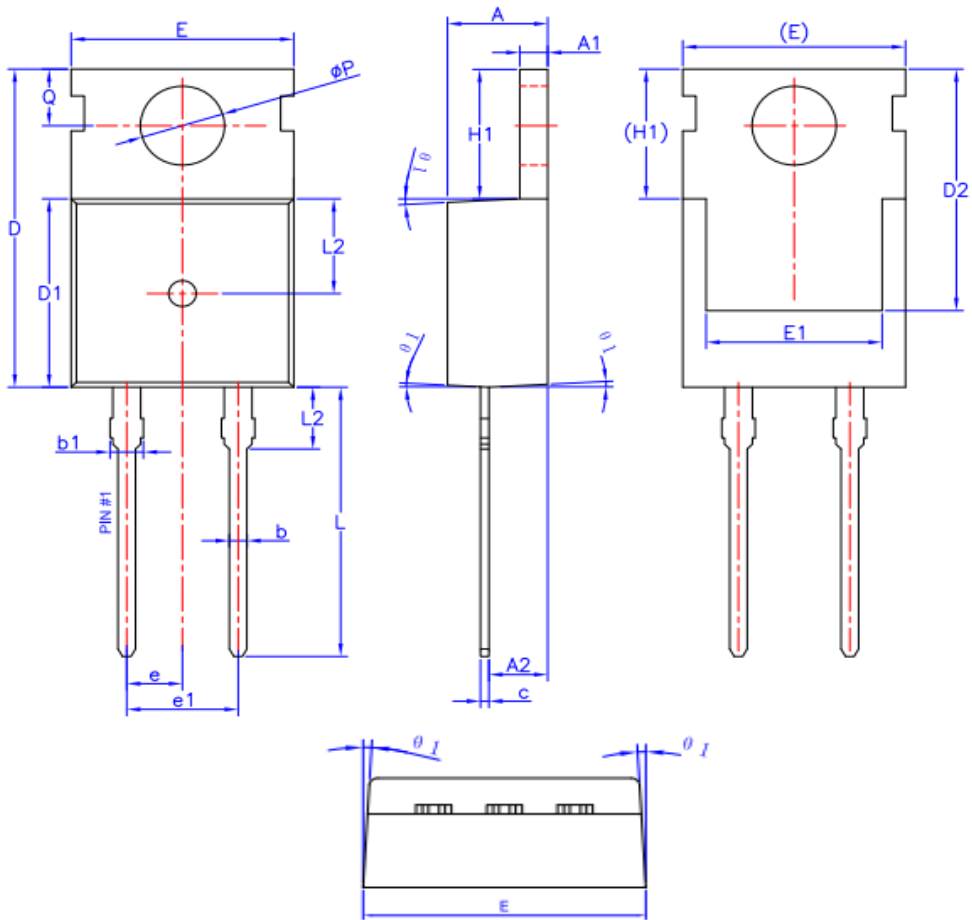
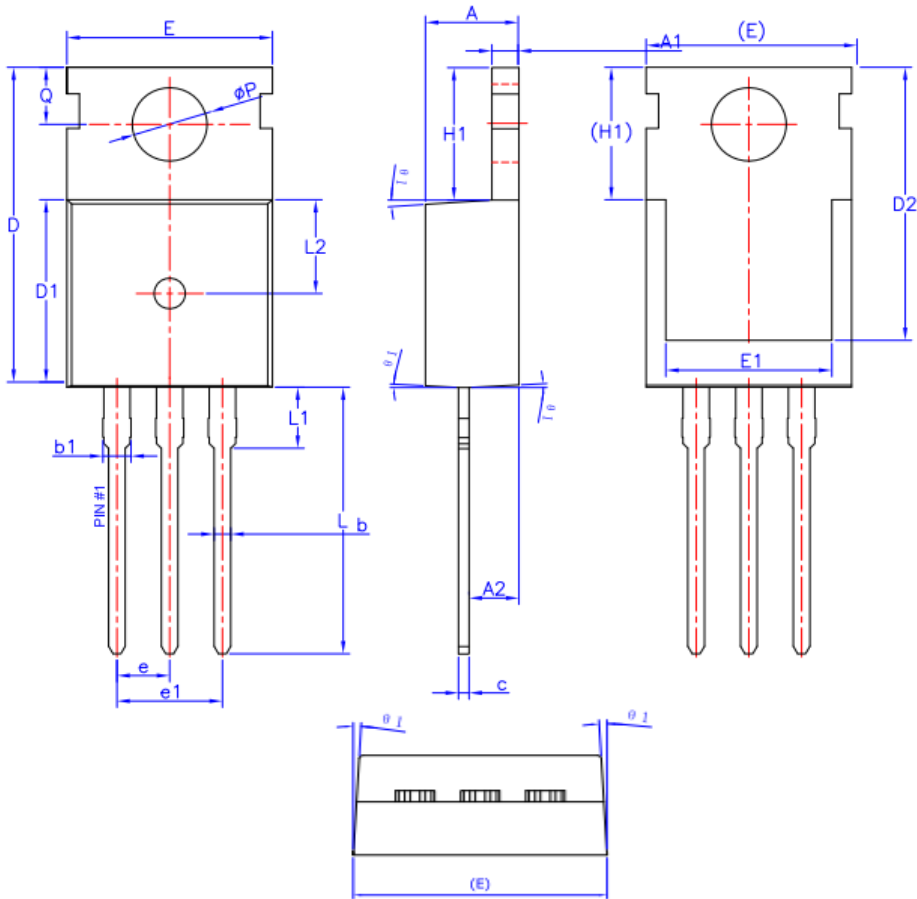


Fig4. Forward Current Derating Curve

Package Outline: TO-220-2L


| SYMBOL | MIN | NOM | MAX |
|--------|---------|-------|-------|
| A | 4.40 | 4.50 | 4.60 |
| A1 | 1.27 | 1.30 | 1.33 |
| A2 | 2.30 | 2.40 | 2.50 |
| b | 0.70 | - | 0.90 |
| b1 | 1.42 | - | 1.57 |
| c | 0.45 | 0.50 | 0.60 |
| D | 15.30 | 15.70 | 16.10 |
| D1 | 9.10 | 9.20 | 9.30 |
| D2 | 13.10 | - | 13.70 |
| E | 9.70 | 9.90 | 10.20 |
| E1 | 7.80 | 8.00 | 8.20 |
| e | 2.54BSC | | |
| e1 | 5.08BSC | | |
| H1 | 6.30 | 6.50 | 6.70 |
| L | 12.78 | 13.08 | 13.38 |
| L1 | - | - | 3.50 |
| L2 | 4.60REF | | |
| ∅ P | 3.55 | 3.60 | 3.65 |
| Q | 2.73 | - | 2.87 |
| θ1 | 1° | 3° | 5° |

Package Outline: TO-220-3L


| SYMBOL | MIN | NOM | MAX |
|------------|---------|-------|-------|
| A | 4.40 | 4.50 | 4.60 |
| A1 | 1.27 | 1.30 | 1.33 |
| A2 | 2.30 | 2.40 | 2.50 |
| b | 0.70 | - | 0.90 |
| b1 | 1.27 | - | 1.40 |
| c | 0.45 | 0.50 | 0.60 |
| D | 15.30 | 15.70 | 16.10 |
| D1 | 9.10 | 9.20 | 9.30 |
| D2 | 13.10 | - | 13.70 |
| E | 9.70 | 9.90 | 10.20 |
| E1 | 7.80 | 8.00 | 8.20 |
| e | 2.54BSC | | |
| e1 | 5.08BSC | | |
| H1 | 6.30 | 6.50 | 6.70 |
| L | 12.78 | 13.08 | 13.38 |
| L1 | - | - | 3.50 |
| L2 | 4.60REF | | |
| ϕP | 3.55 | 3.60 | 3.65 |
| Q | 2.73 | - | 2.87 |
| θ_1 | 1° | 3° | 5° |