

Super Barrier Rectifier™

Using state-of-the-art SBR IC process technology, the following features are made possible in a single device:

Major ratings and characteristics

| Characteristics | Values | Units |
|----------------------------------|------------|------------|
| $I_{F(AV)}$ Rectangular Waveform | 40 | A |
| V_{RRM} | 45 | V |
| $V_F @ 20A, T_j = 125^\circ C$ | 0.40 | V, typ |
| T_j (operating/storage) | -65 to 150 | $^\circ C$ |

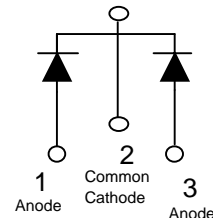
Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

MECHANICAL:

* Molded Plastic TO-220 package

ELECTRICAL:

- * Low Forward Voltage Drop
- * Reliable High Temperature Operation
- * Super Barrier Design
- * Softest, fast switching capability
- * 150 $^\circ C$ Operating Junction Temperature



Maximum Ratings and Electrical Characteristics

(at 25 $^\circ C$ unless otherwise specified)

| | SYMBOL | | | UNITS |
|--|-------------------|-------------------|---------------------|--------------|
| DC Blocking Voltage | V_{RM} | 45 | | Volts |
| Working Peak Reverse Voltage | V_{RWM} | | | |
| Peak Repetitive Reverse Voltage | V_{RRM} | | | |
| Average Rectified Forward Current (Rated V_R -20Khz Square Wave) - 50% duty cycle | I_O | 40 | | Amps |
| Peak Forward Surge Current - 1/2 60hz | I_{FSM} | 300 | | Amps |
| Peak Repetitive Reverse Surge Current (2uS-1Khz) | I_{RRM} | 3 | | Amps |
| Instantaneous Forward Voltage (per leg) $I_F = 20A; T_j = 25^\circ C$ $I_F = 20A; T_j = 125^\circ C$ | V_F^* | Typ --- --- | Max 0.56 0.46 | Volts |
| Maximum Instantaneous Reverse Current at Rated V_{RM} $T_j = 25^\circ C$ $T_j = 125^\circ C$ | I_R | Typ --- --- | Max 0.5 100 | mA mA |
| Maximum Rate of Voltage Change (at Rated V_R) | dv/dt | 10,000 | | V/uS |
| Maximum Thermal Resistance JC (per leg) | $R_{\theta_{JC}}$ | 2 | | $^\circ C/W$ |
| Operating and Storage Junction Temperature | T_j | -65 to +150 | | $^\circ C$ |

* Pulse width < 300 uS, Duty cycle < 2%

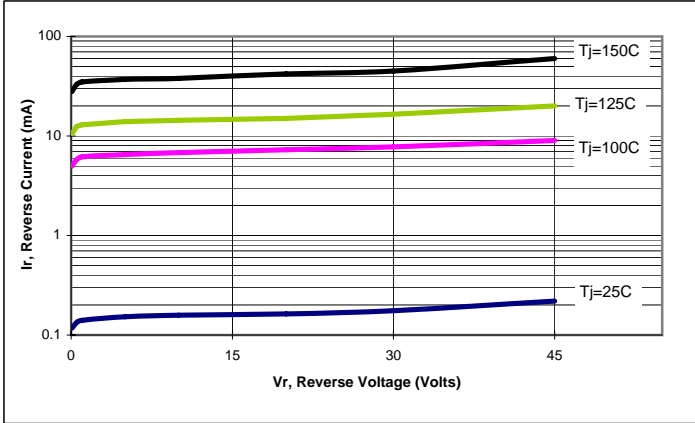


Figure 1: Typical Reverse Current (per leg)

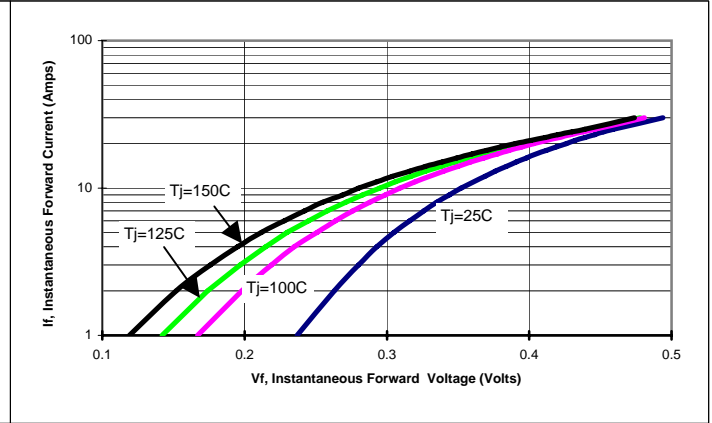


Figure 2: Typical Forward Voltage (per leg)

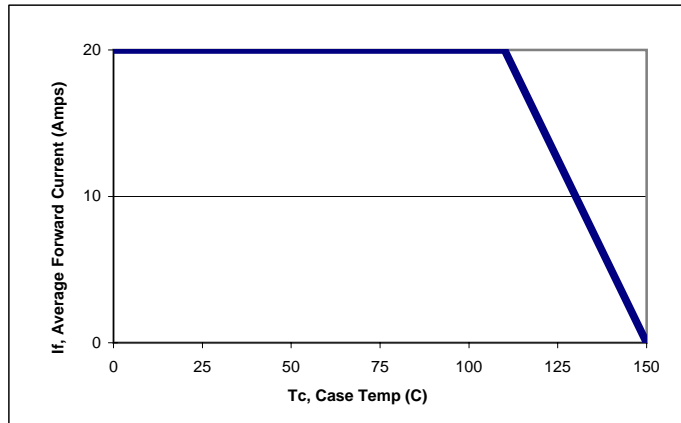


Figure 3: Current Derating, Case (per leg)

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