

# 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 | 1.0 *      | A          |
| $V_{RRM}$                        | 40         | V          |
| $V_F @ 1A, T_J = 75^\circ C$     | 0.42       | V, typ     |
| $T_J$ (operating/storage)        | -65 to 125 | $^\circ C$ |

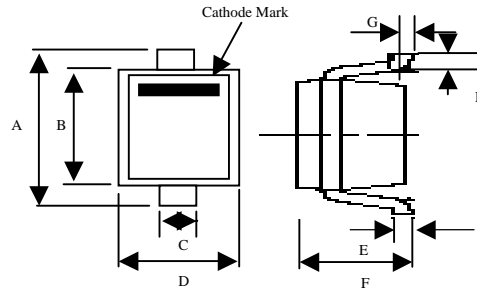
\*Note: Device mounted on a glass epoxy board,  
Board size: 50mm x 50mm,  
Land size: 6mm x 6mm

### ELECTRICAL:

- \* Low Forward Voltage Drop
- \* Low Reverse Leakage
- \* Reliable High Temperature Operation
- \* Super Barrier Design
- \* Softest, fast switching capability
- \* 125 $^\circ C$  Operating Junction Temperature

### MECHANICAL:

\* Molded Plastic SOD-323 package



| SOD-323              |      |      |
|----------------------|------|------|
| Di                   | Min  | Max  |
| A                    | 2.30 | 2.70 |
| B                    | 1.60 | 1.80 |
| C                    | 0.25 | 0.40 |
| D                    | 1.15 | 1.45 |
| E                    | 0.10 | 0.18 |
| F                    | 0.85 | 1.05 |
| G                    | -    | 0.10 |
| H                    | 0.20 | 0.40 |
| All Dimensions in mm |      |      |

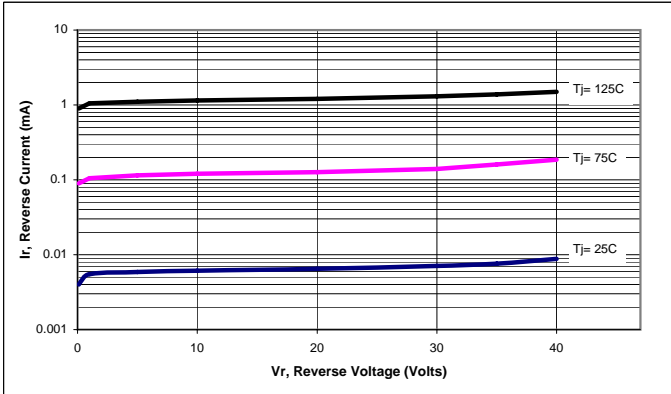
### Maximum Ratings and Electrical Characteristics

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

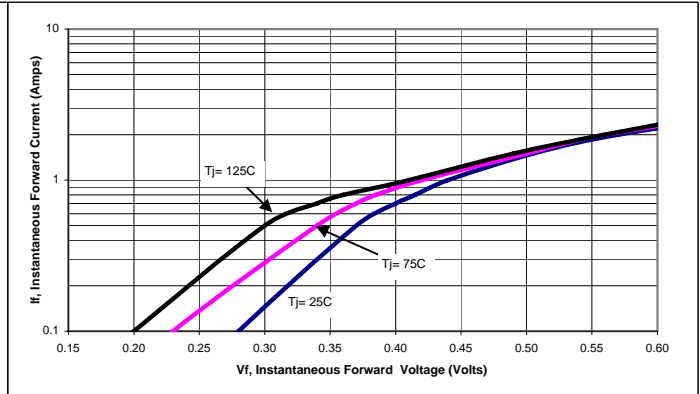
|   | SYMBOL      |                           |                            | UNITS      |
|---|-------------|---------------------------|----------------------------|------------|
| DC Blocking Voltage   | $V_{RM}$    | 40                        |                            | Volts      |
| Working Peak Reverse Voltage  | $V_{RWM}$   |                           |                            |            |
| Peak Repetitive Reverse Voltage   | $V_{RRM}$   |                           |                            |            |
| Average Rectified Forward Current<br>(Rated $V_R$ - 20Khz Square Wave) - 50% duty cycle   | $I_O^{(1)}$ | 1                         |                            | Amps       |
| Peak Forward Surge Current - 1/2 60hz   | $I_{FSM}$   | 18                        |                            | Amps       |
| Instantaneous Forward Voltage<br>$I_F = 0.7A; T_J = 25^\circ C$<br>$I_F = 1A; T_J = 25^\circ C$<br>$I_F = 0.7A; T_J = 75^\circ C$ | $V_F$       | Typ<br>---<br>0.44<br>--- | Max<br>0.44<br>---<br>0.39 | Volts      |
| Maximum Reverse Current at Rated $V_{RM}$<br>$T_J = 25^\circ C$<br>$T_J = 75^\circ C$   | $I_R^{(2)}$ | Typ<br>---<br>---         | Max<br>0.2<br>2            | mA<br>mA   |
| Operating and Storage Junction Temperature  | $T_J$       | -65 to +125               |                            | $^\circ C$ |

(1) We recommend that the worst case current be no greater than 80% of the maximum rating of  $I_O$

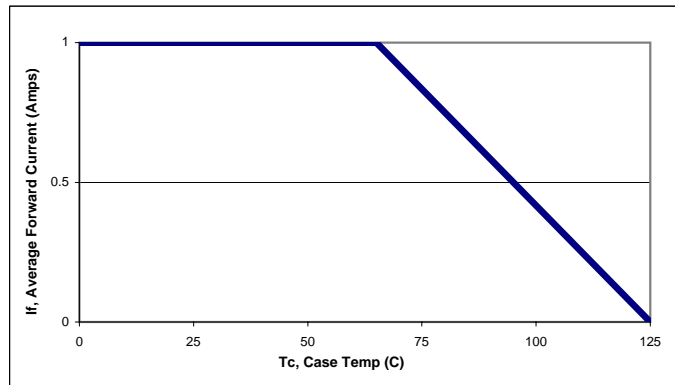
(2) Pulse width < 300 uS, Duty cycle < 2%



**Figure 1: Typical Reverse Current**



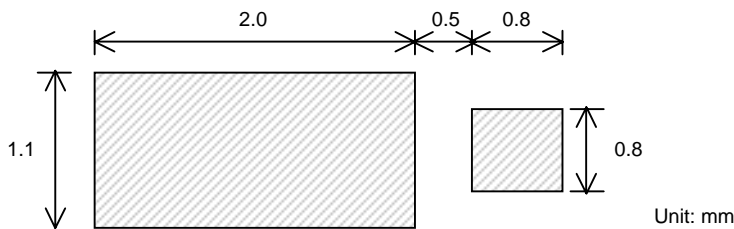
**Figure 2: Typical Forward Voltage**



**Figure 3: Current Derating, Case\***

\*Device mounted on a 50mm x 50mm glass epoxy board, 50% duty cycle

**STANDARD SOLDERING PAD:**



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