

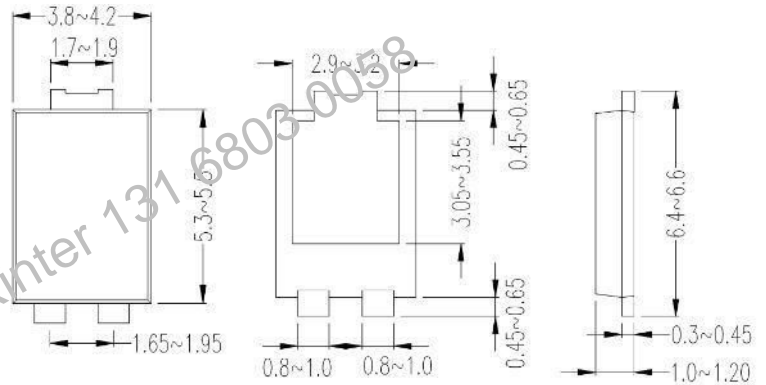
# 10.0A SUPER BARRIER RECTIFIER

## SB1045L

# Formosa MS

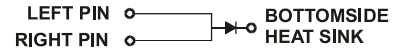
### Features

- Bypass Diodes for Solar Panels
- Maximum Junction Temperature 200°C
- High Thermal Reliability
- Patented Super Barrier Rectifier Technology
- High Forward Surge Capability
- Ultra Low Power Loss, High Efficiency
- Excellent High Temperature Stability



### Mechanical Data

- Case: TO-277 Molded Plastic "Green" Molding Compound
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.093 grams (approx.)
- Mounting Position: Any
- Marking: Type Number
- Lead Free: For RoHS/Lead Free Version



Note: Pins Left & Right must be electrically connected at the printed circuit board.

### Maximum Ratings and Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

Single Phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic  | Symbol          | SB1045L     | Unit               |
|---|-----------------|-------------|--------------------|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$       | 45          | V                  |
| Working Peak Reverse Voltage  | $V_{RWM}$       |             |                    |
| DC Blocking Voltage   | $V_R$           |             |                    |
| RMS Reverse Voltage   | $V_{R(RMS)}$    | 32          | V                  |
| Average Rectified Output Current (Note 1)   | $I_O$           | 10.0        | A                  |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single half sine-wave superimposed on rated load<br>(JEDEC Method)                   | $I_{FSM}$       | 150         | A                  |
| Forward Voltage Drop<br>@ $I_F = 10A, T_J = 25^\circ\text{C}$   | $V_{FM}$        | 0.5         | V                  |
| Peak Reverse Current<br>At Rated DC Blocking Voltage<br>@ $V_R = 45V, T_J = 25^\circ\text{C}$<br>@ $V_R = 45V, T_J = 100^\circ\text{C}$ | $I_{RM}$        | 0.3<br>15   | mA                 |
| Repetitive Peak Avalanche Power(1us, 25°C)  | $P_{ARM}$       | 30000       | W                  |
| Typical Thermal Resistance Junction to Ambient (Note 2)<br>(Note 3)   | $R_{\theta JA}$ | 73<br>31    | $^\circ\text{C/W}$ |
| Operating Temperature Range<br>@ $V_R \leq 80\% V_{RRM}$<br>DC Forward Mode   | $T_J$           | -65 to +150 | $^\circ\text{C}$   |
| Storage Temperature Range   | $T_{STG}$       | -65 to +150 | $^\circ\text{C}$   |

Note: 1. Valid provided that leads are kept at ambient temperature at a distance of 9.5mm from the case.  
2. FR-4 PCB, 2oz. Copper, minimum recommended pad layout .

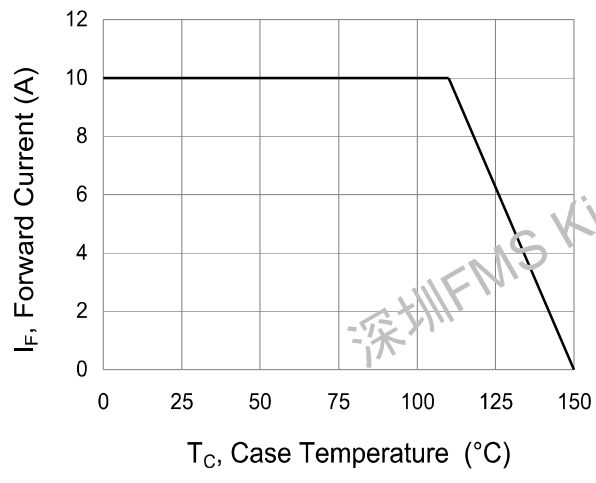


Fig. 1 Forward Current Derating Curve

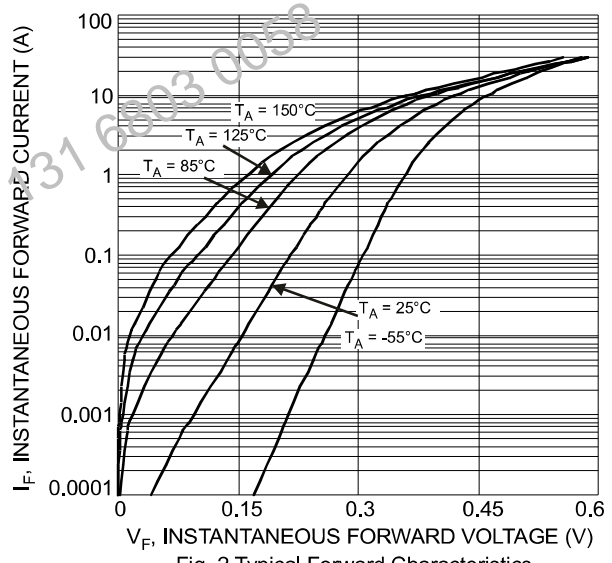


Fig. 2 Typical Forward Characteristics

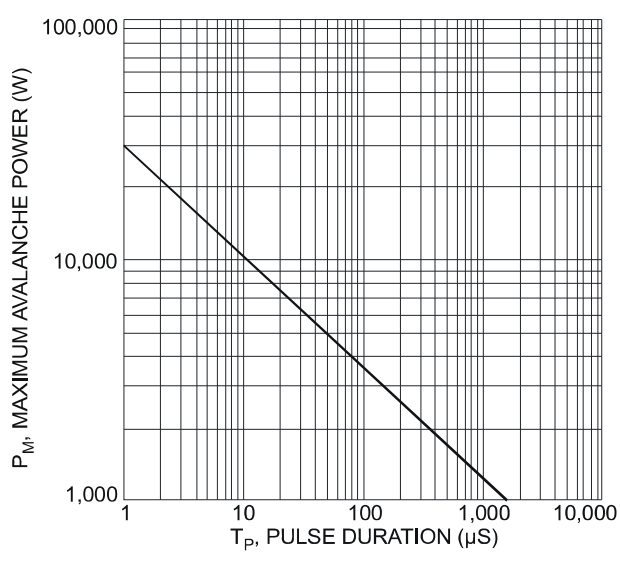


Fig. 3 Maximum Avalanche Power