

## Silicon Power Schottky Diode

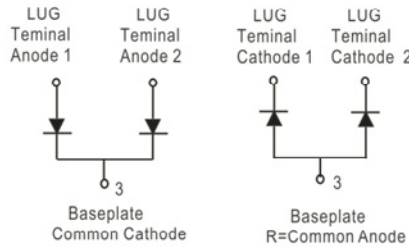
$V_{RRM} = 20\text{ V} - 40\text{ V}$

$I_{F(AV)} = 500\text{ A}$

### Features

- High Surge Capability
- Types from 20 V to 40 V  $V_{RRM}$
- Not ESD Sensitive

### Twin Tower Package



Maximum ratings, at  $T_j = 25\text{ }^\circ\text{C}$ , unless otherwise specified ("R" devices have leads reversed)

| Parameter                       | Symbol    | Conditions | MBR50020CT(R) | MBR50030CT(R) | MBR50035CT(R) | MBR50040CT(R) | Unit             |
|---------------------------------|-----------|------------|---------------|---------------|---------------|---------------|------------------|
| Repetitive peak reverse voltage | $V_{RRM}$ |            | 20            | 30            | 35            | 40            | V                |
| RMS reverse voltage             | $V_{RMS}$ |            | 14            | 21            | 25            | 28            | V                |
| DC blocking voltage             | $V_{DC}$  |            | 20            | 30            | 35            | 40            | V                |
| Operating temperature           | $T_j$     |            | -55 to 150    | -55 to 150    | -55 to 150    | -55 to 150    | $^\circ\text{C}$ |
| Storage temperature             | $T_{stg}$ |            | -55 to 150    | -55 to 150    | -55 to 150    | -55 to 150    | $^\circ\text{C}$ |

Electrical characteristics, at  $T_j = 25\text{ }^\circ\text{C}$ , unless otherwise specified

| Parameter  | Symbol      | Conditions   | MBR50020CT(R) | MBR50030CT(R) | MBR50035CT(R) | MBR50040CT(R) | Unit |
|--|-------------|--|---------------|---------------|---------------|---------------|------|
| Average forward current (per pkg)                      | $I_{F(AV)}$ | $T_C = 125\text{ }^\circ\text{C}$  | 500           | 500           | 500           | 500           | A    |
| Peak forward surge current (per leg)                   | $I_{FSM}$   | $t_p = 8.3\text{ ms, half sine}$   | 3500          | 3500          | 3500          | 3500          | A    |
| Maximum forward voltage (per leg)                      | $V_F$       | $I_{FM} = 250\text{ A, } T_j = 25\text{ }^\circ\text{C}$   | 0.75          | 0.75          | 0.75          | 0.75          | V    |
| Reverse current at rated DC blocking voltage (per leg) | $I_R$       | $T_j = 25\text{ }^\circ\text{C}$<br>$T_j = 100\text{ }^\circ\text{C}$<br>$T_j = 150\text{ }^\circ\text{C}$ | 1<br>10<br>50 | 1<br>10<br>50 | 1<br>10<br>50 | 1<br>10<br>50 | mA   |

### Thermal characteristics

| Parameter                                  | Symbol          | Conditions | MBR50020CT(R) | MBR50030CT(R) | MBR50035CT(R) | MBR50040CT(R) | Unit               |
|--|-----------------|------------|---------------|---------------|---------------|---------------|--------------------|
| Thermal resistance, junction-case, per leg | $R_{\theta JC}$ |            | 0.30          | 0.30          | 0.30          | 0.30          | $^\circ\text{C/W}$ |

Figure .1- Typical Forward Characteristics

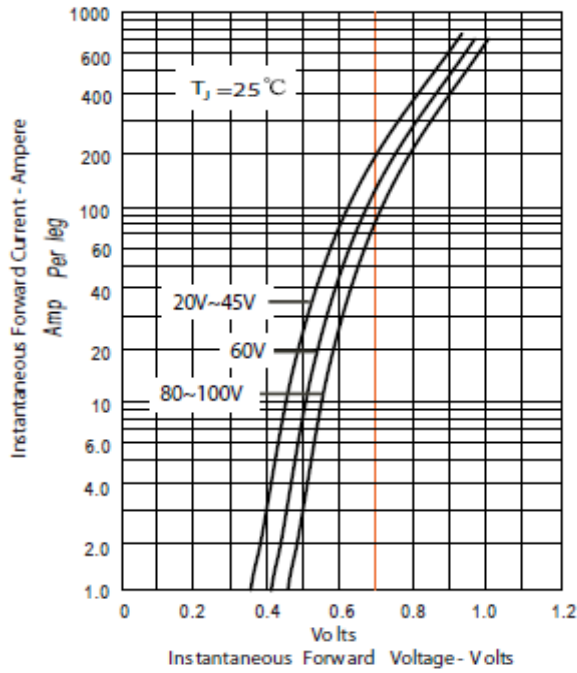


Figure .2- Forward Derating Curve

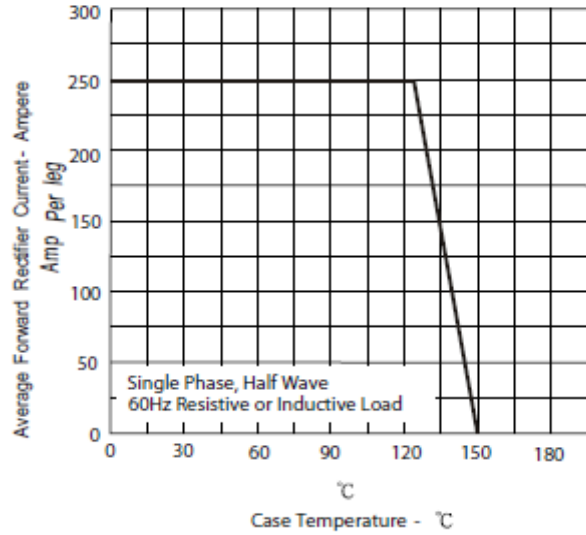


Figure 3- Peak Forward Surge Current

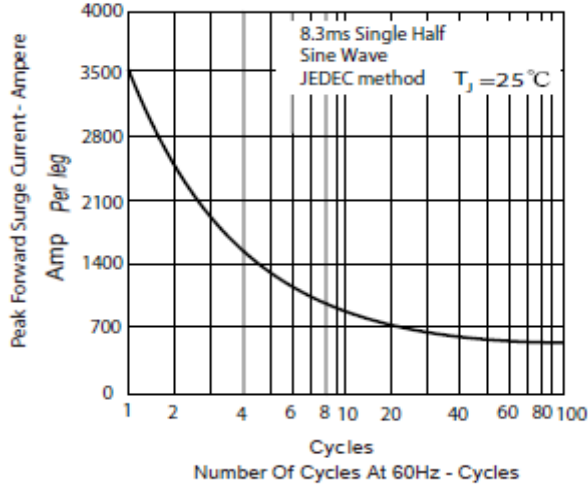
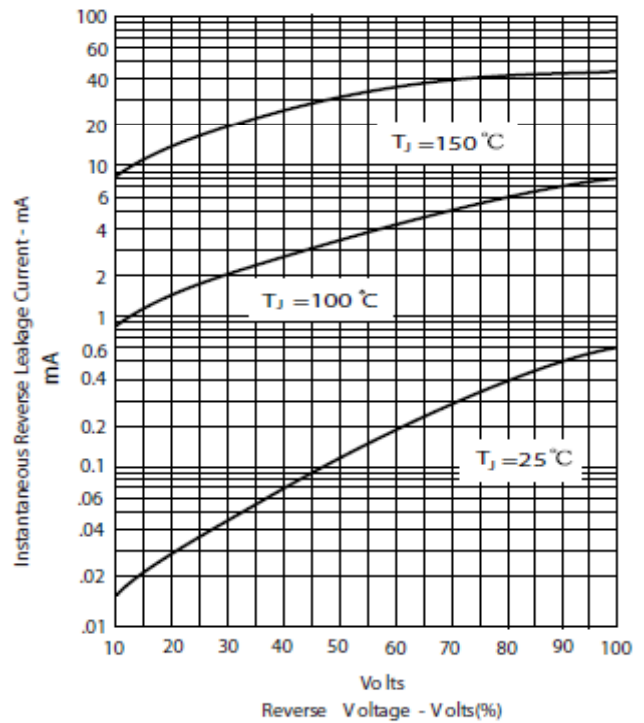
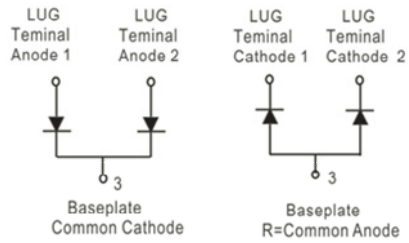
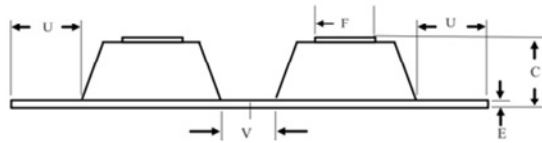
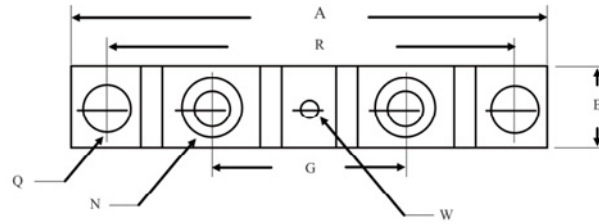


Figure .4- Typical Reverse Characteristics



## Package dimensions and terminal configuration

Product is marked with part number and terminal configuration.



| DIM | Inches          |       | Millimeters |       |
|-----|-----------------|-------|-------------|-------|
|     | Min             | Max   | Min         | Max   |
| A   | ----            | 3.630 | ----        | 92.40 |
| B   | 0.700           | 0.800 | 17.78       | 20.32 |
| C   | ----            | 0.650 | ----        | 16.51 |
| E   | 0.130           | 0.141 | 3.30        | 3.60  |
| F   | 0.482           | 0.490 | 12.25       | 12.45 |
| G   | 1.368           | BSC   | 34.75       | BSC   |
| N   | 1/4-20 UNC FULL |       |             |       |
| Q   | 0.275           | 0.290 | 6.99        | 7.37  |
| R   | 3.150           | BSC   | 80.01       | BSC   |
| U   | 0.600           | ----  | 15.24       | ----  |
| V   | 0.312           | 0.370 | 7.92        | 9.40  |
| W   | 0.180           | 0.195 | 4.57        | 4.95  |