

## Silicon Super Fast Recovery Diode

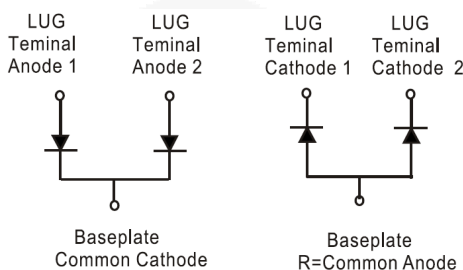
$V_{RRM} = 50 \text{ V} - 200 \text{ V}$

$I_{F(AV)} = 300 \text{ A}$

### Features

- High Surge Capability
- Types from 50 V to 200 V  $V_{RRM}$
- Not ESD Sensitive

TO-244 Package



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

| Parameter                       | Symbol    | Conditions | MURF30005(R) | MURF30010(R) | MURF30020(R) | Unit             |
|---------------------------------|-----------|------------|--------------|--------------|--------------|------------------|
| Repetitive peak reverse voltage | $V_{RRM}$ |            | 50           | 100          | 200          | V                |
| RMS reverse voltage             | $V_{RMS}$ |            | 35           | 70           | 140          | V                |
| DC blocking voltage             | $V_{DC}$  |            | 50           | 100          | 200          | V                |
| Operating temperature           | $T_j$     |            | -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   | $^\circ\text{C}$ |

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

| Parameter                                                      | Symbol      | Conditions                                                                | MURF30005(R) | MURF30010(R) | MURF30020(R) | Unit          |
|----------------------------------------------------------------|-------------|---------------------------------------------------------------------------|--------------|--------------|--------------|---------------|
| Average forward current (per pkg)                              | $I_{F(AV)}$ | $T_C = 140^\circ\text{C}$                                                 | 300          | 300          | 300          | A             |
| Peak forward surge current (per leg)                           | $I_{FSM}$   | $t_p = 8.3 \text{ ms}$ , half sine                                        | 2750         | 2750         | 2750         | A             |
| Maximum instantaneous forward voltage (per leg)                | $V_F$       | $I_{FM} = 150 \text{ A}$ , $T_j = 25^\circ\text{C}$                       | 1.0          | 1.0          | 1.0          | V             |
| Maximum reverse current at rated DC blocking voltage (per leg) | $I_R$       | $T_j = 25^\circ\text{C}$                                                  | 25           | 25           | 25           | $\mu\text{A}$ |
|                                                                |             | $T_j = 125^\circ\text{C}$                                                 | 3            | 3            | 3            | mA            |
| Maximum reverse recovery time (per leg)                        | $T_{rr}$    | $I_F = 0.5 \text{ A}$ , $I_R = 1.0 \text{ A}$ , $I_{RR} = 0.25 \text{ A}$ | 100          | 100          | 100          | nS            |

### Thermal characteristics

|                                                       |                 |  |      |      |      |                    |
|-------------------------------------------------------|-----------------|--|------|------|------|--------------------|
| Maximum thermal resistance, junction - case (per leg) | $R_{\theta JC}$ |  | 0.40 | 0.40 | 0.40 | $^\circ\text{C/W}$ |
|-------------------------------------------------------|-----------------|--|------|------|------|--------------------|

Figure .1- Typical Forward Characteristics

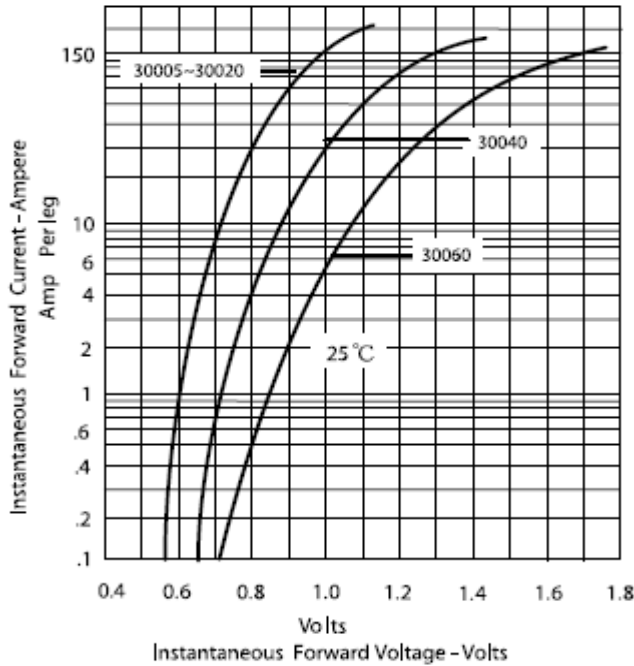


Figure .2- Forward Derating Curve

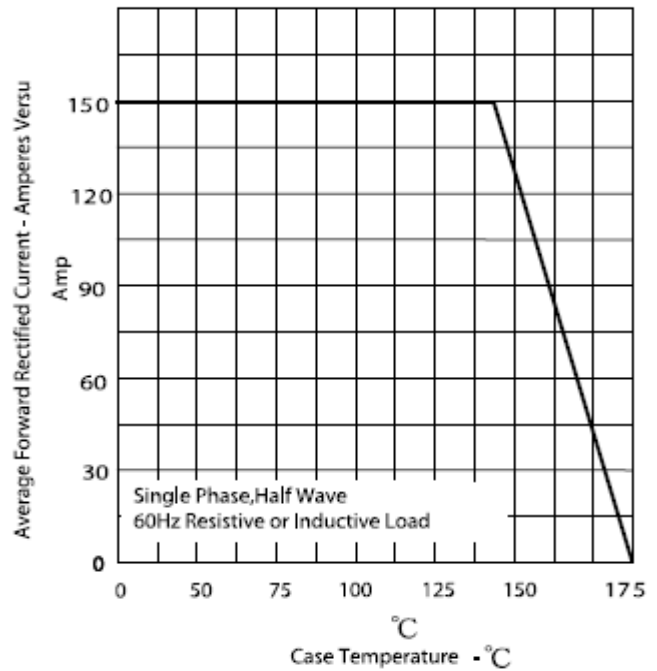


Figure.3- Peak Forward Surge Current

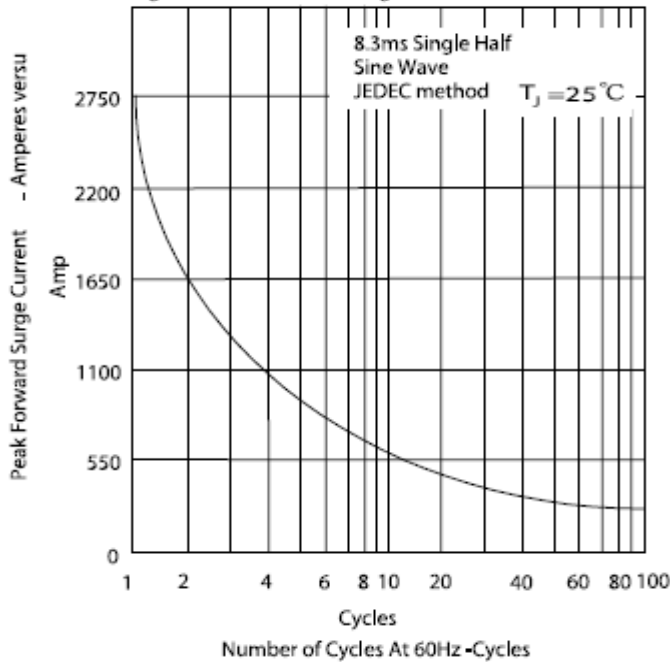
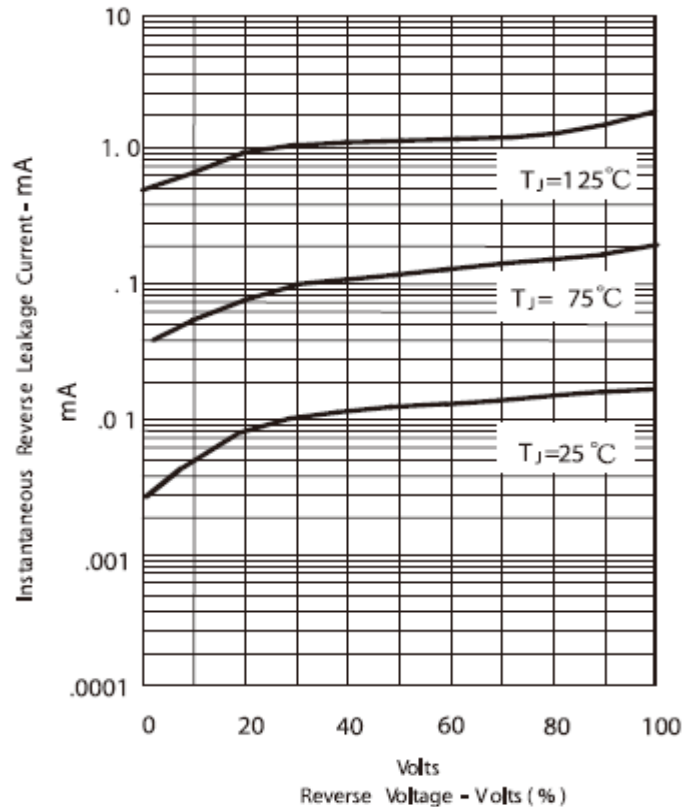
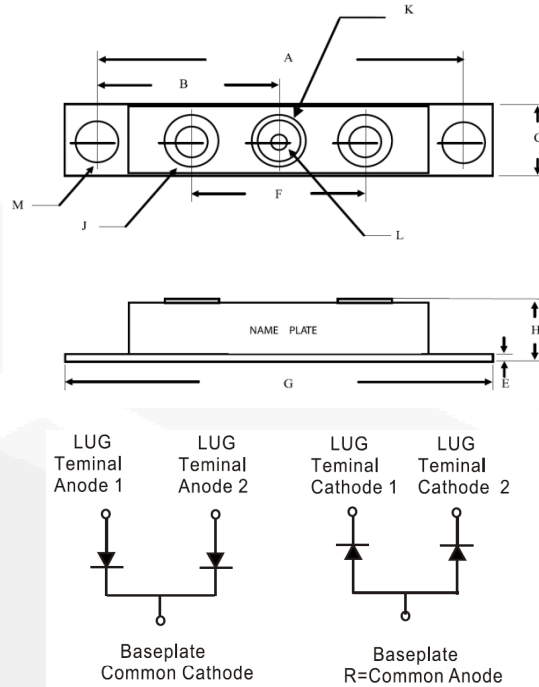


Figure .4-Typical Reverse Characteristics



## Package dimensions and terminal configuration

Product is marked with part number and terminal configuration.



| DIM | Inches          |       | Millimeters |       |
|-----|-----------------|-------|-------------|-------|
|     | Min             | Max   | Min         | Max   |
| A   | 3.144           | NOM   | 79.85       | NOM   |
| B   | 1.565           | 1.585 | 39.75       | 40.26 |
| C   | 0.700           | 0.800 | 17.78       | 20.32 |
| E   | 0.119           | 0.14  | 3.02        | 3.50  |
| F   | 1.358           | REF.  | 34.50       | REF.  |
| G   | 3.55            | 3.65  | 90.17       | 92.71 |
| H   | 0.604           | 0.65  | 15.35       | 16.51 |
| J   | 1/4-20 UNC FULL |       |             |       |
| K   | 0.380           | 0.410 | 9.65        | 10.41 |
| L   | 0.185           | 0.195 | 4.70        | 4.95  |
| M   | 0.275           | 0.295 | 6.99        | 7.49  |