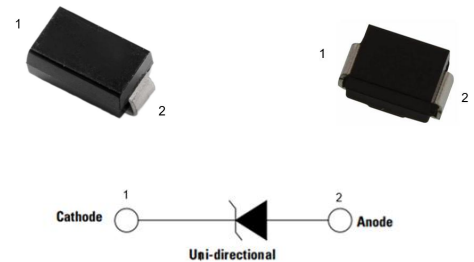


### Features

- ◆ Fast Recovery Time For High Efficiency
- ◆ Glass Passivated Die Construction
- ◆ Surge Overload Rating to 50A Peak
- ◆ Ideally Suited for Automated Assembly
- ◆ Lead Free Finish/RoHS Compliant
- ◆ Green Molding Compound (No Halogen and Antimony)

### Mechanical Data

- ◆ Case: SMA/SMB
- ◆ Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- ◆ Moisture Sensitivity: Level 1 per J-STD-020
- ◆ Polarity: Cathode Band or Cathode Notch
- ◆ SMA Weight: 0.065 grams (approximate)
- ◆ SMB Weight: 0.09 grams (approximate)



Dimensions (SMA/SMB)

SMA

| Symbol | Millimeters |       | Inches |       |
|--------|-------------|-------|--------|-------|
|        | Min         | Max   | Min.   | Max.  |
| A      | 1.250       | 1.650 | 0.049  | 0.065 |
| B      | 3.990       | 4.600 | 0.157  | 0.181 |
| C      | 2.400       | 2.790 | 0.095  | 0.110 |
| D      | 1.900       | 2.290 | 0.075  | 0.090 |
| E      | 0.780       | 1.520 | 0.030  | 0.060 |
| F      | -           | 0.203 | -      | 0.008 |
| G      | 4.800       | 5.280 | 0.189  | 0.208 |
| H      | 0.152       | 0.305 | 0.006  | 0.012 |
| I      | 1.800       | -     | 0.070  | -     |
| J      | 2.100       | -     | 0.082  | -     |
| K      | -           | 2.300 | -      | 0.090 |

SMB

| Ref. | Millimeters |       | Inches |       |
|------|-------------|-------|--------|-------|
|      | Min         | Max   | Min.   | Max.  |
| A    | 1.930       | 2.200 | 0.076  | 0.086 |
| B    | 4.060       | 4.750 | 0.160  | 0.187 |
| C    | 3.300       | 3.940 | 0.130  | 0.155 |
| D    | 1.990       | 2.610 | 0.078  | 0.103 |
| E    | 0.760       | 1.520 | 0.030  | 0.060 |
| F    | -           | 0.203 | -      | 0.008 |
| G    | 5.210       | 5.590 | 0.205  | 0.220 |
| H    | 0.152       | 0.305 | 0.006  | 0.012 |
| I    | 2.260       | -     | 0.089  | -     |
| J    | 2.160       | -     | 0.085  | -     |
| K    | -           | 2.740 | -      | 0.107 |

**Maximum Rating and Thermal Characteristics( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

| Parameter                                                                                        | Symbol           | RS2<br>A/AA   | RS2<br>B/BA | RS2<br>D/DA | RS2<br>G/GA | RS2<br>J/JA | RS2<br>K/KA | RS2<br>M/MA | Unit                 |
|--------------------------------------------------------------------------------------------------|------------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
| Peak Repetitive Reverse Voltage                                                                  | $V_{RRM}$        |               |             |             |             |             |             |             |                      |
| Working Peak Reverse Voltage                                                                     | $V_{RWM}$        | 50            | 100         | 200         | 400         | 600         | 800         | 1000        | V                    |
| DC Blocking Voltage                                                                              | $V_R$            |               |             |             |             |             |             |             |                      |
| RMS Reverse Voltage                                                                              | $V_{RMS}$        | 35            | 70          | 140         | 280         | 420         | 560         | 700         | V                    |
| Average Rectified Output Current                                                                 | $I_O$            | 2.0           |             |             |             |             |             |             | A                    |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$        | 50            |             |             |             |             |             |             | A                    |
| Typical Thermal Resistance @Between Junction and ambient                                         | $R_{\theta J-A}$ | 55            |             |             |             |             |             |             | $^{\circ}\text{C/W}$ |
| Operating and Storage Temperature Range                                                          | $T_J, T_{STG}$   | $-60\sim+150$ |             |             |             |             |             |             | $^{\circ}\text{C}$   |

**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

| Parameter                                               |                        | Symbol          | RS2<br>A/AA | RS2<br>B/BA | RS2<br>D/DA | RS2<br>G/GA | RS2<br>J/JA | RS2<br>K/KA | RS2<br>M/MA | Unit |
|---------------------------------------------------------|------------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| Forward Voltage                                         | I <sub>F</sub> = 2.0A  | V <sub>FM</sub> | 1.3         |             |             |             |             |             |             | V    |
| Peak Reverse Current<br>at Rated DC Blocking<br>Voltage | T <sub>A</sub> = 25°C  | I <sub>RM</sub> | 5.0         |             |             |             |             |             |             | µA   |
|                                                         | T <sub>A</sub> = 125°C |                 | 200         |             |             |             |             |             |             |      |
| Reverse Recovery Time (Note 1)                          |                        | T <sub>rr</sub> | 150         |             |             |             | 250         | 500         |             | nS   |
| Typical Total Capacitance (Note 2)                      |                        | C <sub>T</sub>  | 30          |             |             |             |             |             |             | pF   |

**Notes:**

- Reverse recovery test conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{rr} = 0.25\text{A}$
- Measured at 1.0MHz and applied reverse voltage of 4.0V DC

Ratings and Characteristic Curves (T<sub>A</sub>=25°C unless otherwise noted)

Figure 1. Forward Current Derating Curve

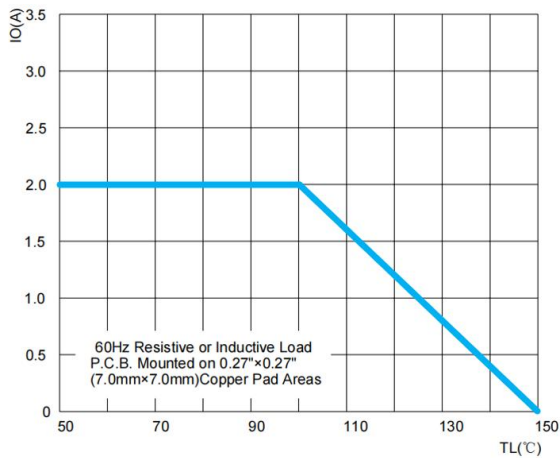


Figure 2. Typical Forward Characteristics

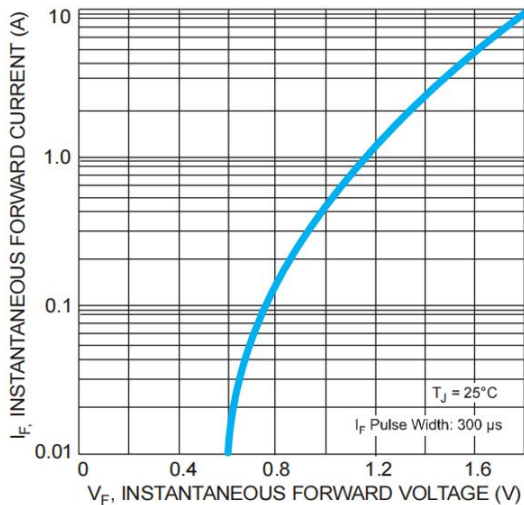


Figure 3. Forward Surge Current Derating Curve

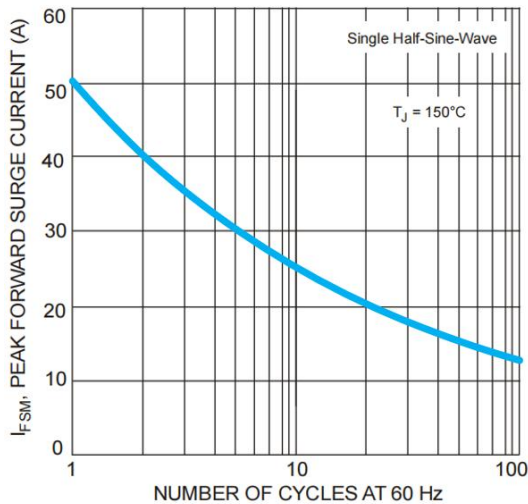
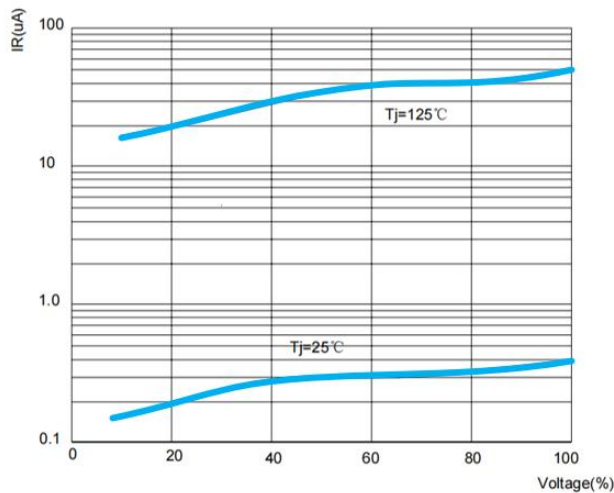
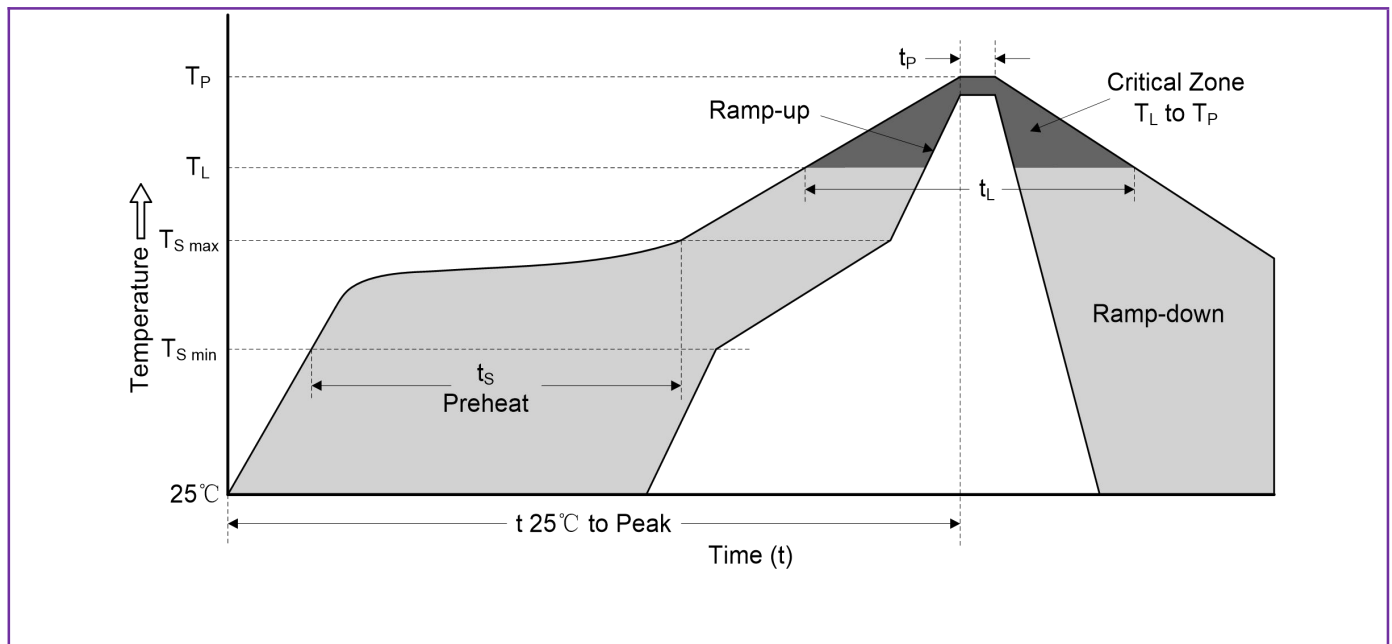


Figure 4. Typical Reverse Characteristics



## Reflow Soldering Parameters



| Reflow Condition                                     |                                   | Lead-free Assembly |
|------------------------------------------------------|-----------------------------------|--------------------|
| Preheat                                              | -Temperature Min ( $T_{S\ min}$ ) | 150°C              |
|                                                      | -Temperature Max ( $T_{S\ max}$ ) | 200°C              |
|                                                      | -Time (min to max) ( $t_s$ )      | 60-180 seconds     |
| Average ramp-up rate ( $T_L$ to $T_P$ )              |                                   | 3°C/second max.    |
| $T_{S\ max}$ to $T_L$ -Ramp-up Rate                  |                                   | 3°C/second max.    |
| Reflow                                               | -Temperature ( $T_L$ ) (Liquidus) | 217°C              |
|                                                      | -Time (min to max) ( $t_s$ )      | 60-150 seconds     |
| Peak Temperature ( $T_P$ )                           |                                   | 260(+0/-5)°C       |
| Time within 5°C of actual Peak Temperature ( $t_p$ ) |                                   | 20-40 seconds      |
| Ramp-down Rate                                       |                                   | 6°C/second max.    |
| Time 25°C to Peak Temperature( $T_P$ )               |                                   | 8 minutes max.     |
| Do not exceed                                        |                                   | 260°C              |