

## Features

- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (Note 2)("P" Suffix Designates RoHS Compliant. See Ordering Information)
- Glass Passivated Chip Junction
- High Junction Temperature Capability
- Fully Automotive Qualified to AEC-Q101



## Maximum Ratings @ 25°C (Unless Otherwise Specified)

| Parameter   | Symbol             | Value |       | Unit             |
|---|--------------------|-------|-------|------------------|
|   |                    | S3GBQ | S3JBQ |                  |
| Peak Repetitive Reverse Voltage                           | V <sub>RRM</sub>   | 400   | 600   | V                |
| Working Peak Reverse Voltage                              | V <sub>RWM</sub>   |       |       |                  |
| DC Blocking Voltage                                       | V <sub>R</sub>     |       |       |                  |
| RMS Reverse Voltage                                       | V <sub>RMS</sub>   | 280   | 420   | V                |
| Average Rectified Forward Current @ T <sub>L</sub> =110°C | I <sub>F(AV)</sub> | 3     |       | A                |
| Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave  | I <sub>FSM</sub>   | 100   |       | A                |
| Non-Repetitive Peak Surge Current @ 1ms Square Wave       |                    | 200   |       |                  |
| Current Squared Time @1ms≤t≤8.3ms                         | I <sup>2</sup> t   | 41.5  |       | A <sup>2</sup> s |

## Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| S3GBQ       | S3GB         |
| S3JBQ       | S3JB         |

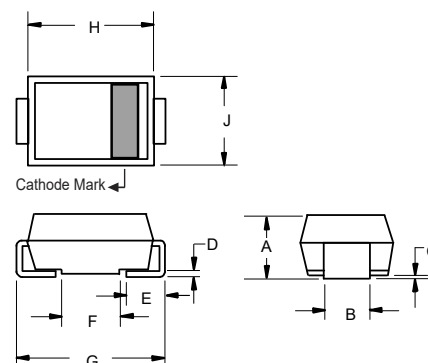
## Internal Structure

| Pin | Description | Simplified Outline  | Graphic Symbol  |
|-----|-------------|---|---|
| 1   | Cathode     |  <p>XXXX = Marking Code<br/>YYWW = Date Code</p> |  |
| 2   | Anode       |   |   |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.  
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

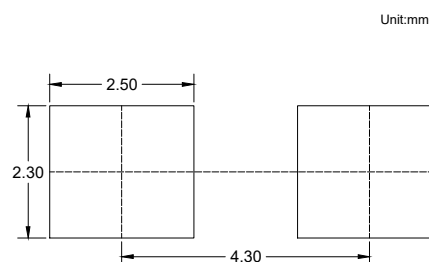
# 3 Amp General Purpose Rectifier 400 to 600 Volts

## SMB(DO-214AA)



| DIMENSIONS |        |       |      |      |      |
|------------|--------|-------|------|------|------|
| DIM        | INCHES |       | MM   |      | NOTE |
|            | MIN    | MAX   | MIN  | MAX  |      |
| A          | 0.079  | 0.103 | 2.00 | 2.62 |      |
| B          | 0.075  | 0.087 | 1.91 | 2.21 |      |
| C          | 0.002  | 0.008 | 0.05 | 0.20 |      |
| D          | 0.006  | 0.012 | 0.15 | 0.31 |      |
| E          | 0.030  | 0.060 | 0.76 | 1.52 |      |
| F          | 0.065  | 0.091 | 1.65 | 2.32 |      |
| G          | 0.200  | 0.220 | 5.08 | 5.59 |      |
| H          | 0.160  | 0.191 | 4.06 | 4.85 |      |
| J          | 0.130  | 0.155 | 3.30 | 3.94 |      |

## Suggested Solder Pad Layout



## Thermal characteristics

| Symbol        | Parameter                                   | Conditions | Min | Typ | Max | Unit |
|---------------|---|------------|-----|-----|-----|------|
| $T_J$         | Operating Junction Temperature Range        |            | -55 |     | 175 | °C   |
| $T_{stg}$     | Storage Temperature Range                   |            | -55 |     | 175 | °C   |
| $R_{th(J-L)}$ | Thermal Resistance from Junction to Lead    | Note 1     |     | 20  |     | °C/W |
| $R_{th(J-A)}$ | Thermal Resistance from Junction to Ambient | Note 1     |     | 70  |     | °C/W |

Note:

1. Mounted on P.C.B. with 8mm\*8mm copper pad areas.

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter             | Symbol   | Test Conditions   | Min | Typ | Max      | Unit    |
|-----------------------|----------|---|-----|-----|----------|---------|
| Forward Voltage       | $V_F$    | $I_F=3A; T_J=25^{\circ}C$   |     |     | 1.1      | V       |
| Reverse Current       | $I_R$    | at Rated $V_R; T_J=25^{\circ}C$<br>at Rated $V_R; T_J=125^{\circ}C$ |     |     | 5<br>100 | $\mu A$ |
| Junction Capacitance  | $C_J$    | $V_R=4V; f=1MHz; T_J=25^{\circ}C$                                   |     | 30  |          | pF      |
| Reverse Recovery Time | $t_{rr}$ | $I_F=0.5A; I_R=1.0A; I_{rr}=0.25A; T_J=25^{\circ}C$                 |     | 3   |          | $\mu S$ |

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

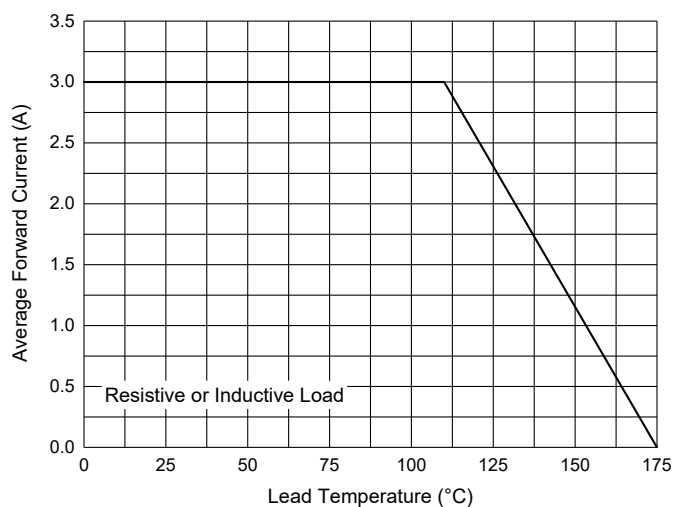


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

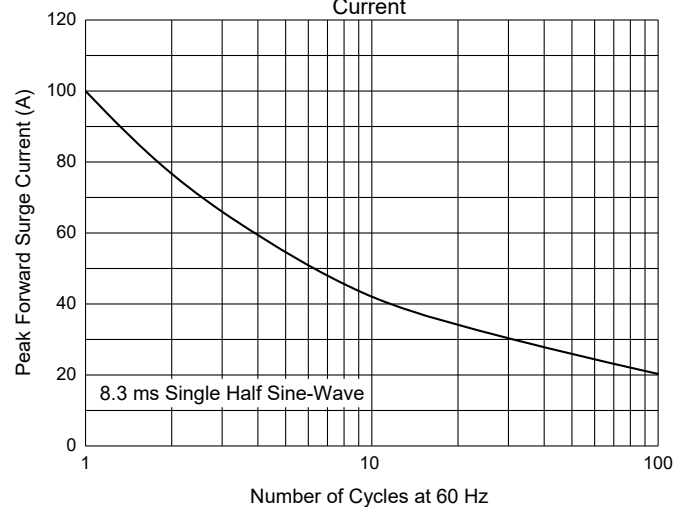


Fig. 3 - Typical Forward Characteristics

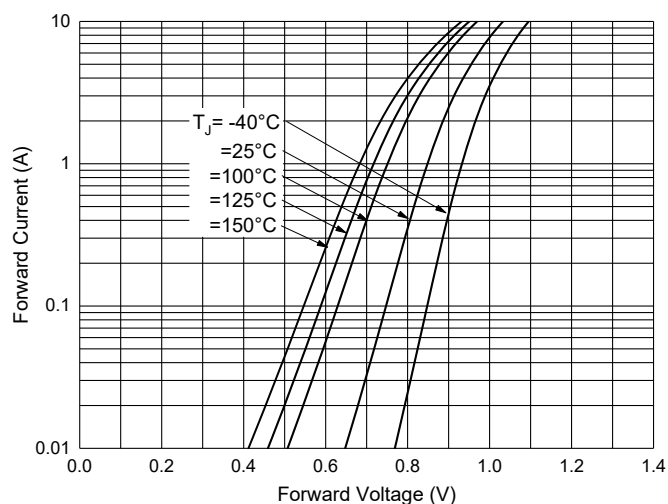


Fig. 4 - Typical Reverse Leakage Characteristics

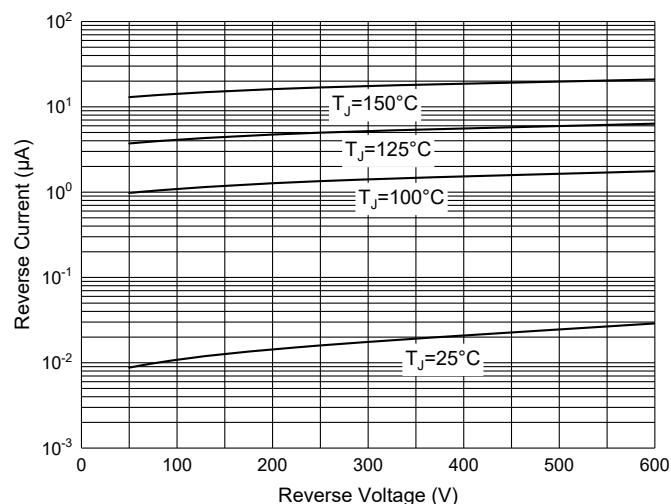
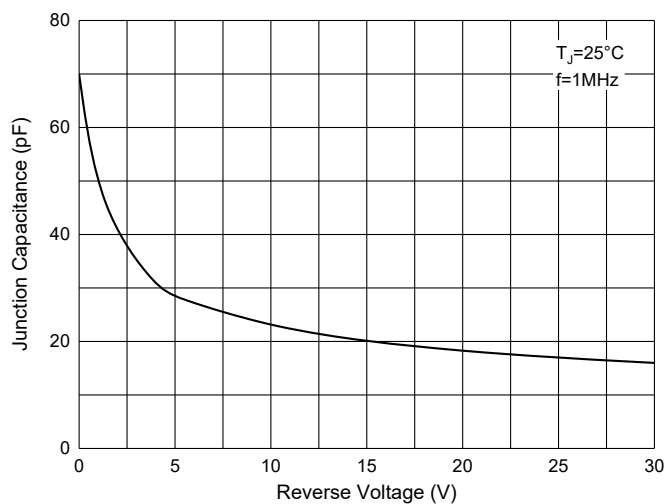


Fig. 5 - Typical Capacitance Characteristics



## Ordering Information

| Device         | Packing              |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:3Kpcs/Reel |

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