

## 3A,20-40V Schottky Barrier Rectifiers

### Features

- Low leakage current
- Schottky barrier diodes
- Low forward voltage drop
- Moisture sensitivity: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition
- High temperature soldering guaranteed: 260°C/10 seconds
- AEC-Q101 qualified



### Applications

For use of fast switching in RF module, lighting, cellular phone, portable device, power supplies, other consumer applications and automotive applications.

| Maximum Ratings & Electrical Characteristics (T <sub>A</sub> =25°C unless otherwise noted) |                    |             |           |           |      |
|--------------------------------------------------------------------------------------------|--------------------|-------------|-----------|-----------|------|
| Parameter                                                                                  | Symbol             | ASGC0320S   | ASGC0330S | ASGC0340S | Unit |
| Maximum repetitive peak reverse voltage                                                    | V <sub>RRM</sub>   | 20          | 30        | 40        | V    |
| Maximum RMS voltage                                                                        | V <sub>RMS</sub>   | 14          | 21        | 28        | V    |
| Maximum DC blocking voltage                                                                | V <sub>DC</sub>    | 20          | 30        | 40        | V    |
| Maximum average forward rectified current                                                  | I <sub>F(AV)</sub> | 3           |           |           | A    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load         | I <sub>FSM</sub>   | 100         |           |           | A    |
| Operating junction temperature range                                                       | T <sub>J</sub>     | -55 to +150 |           |           | °C   |
| Storage temperature range                                                                  | T <sub>STG</sub>   | -55 to +150 |           |           | °C   |

| Thermal-Mechanical Specifications (T <sub>A</sub> =25°C unless otherwise noted) |                   |     |       |
|---------------------------------------------------------------------------------|-------------------|-----|-------|
| Parameter                                                                       | Symbol            | Typ | Unit  |
| Thermal Resistance, Junction to Ambient                                         | R <sub>thJA</sub> | 40  | °C /W |
| Thermal Resistance, Junction to Case                                            | R <sub>thJC</sub> | 15  | °C /W |
| Thermal Resistance, Junction to Lead                                            | R <sub>thJL</sub> | 7   | °C /W |

| Electrical Specifications(T <sub>A</sub> =25°C unless otherwise noted) |                |                              |           |           |           |      |
|------------------------------------------------------------------------|----------------|------------------------------|-----------|-----------|-----------|------|
| Parameter                                                              | Symbol         | Test Conditions              | ASGC0320S | ASGC0330S | ASGC0340S | Unit |
| Maximum forward drop voltage                                           | V <sub>F</sub> | I <sub>F</sub> =3A           | 0.50      |           |           | V    |
| Maximum reverse leakage current @V <sub>R</sub>                        | I <sub>R</sub> | T <sub>J</sub> =25°C         | 0.30      |           |           | mA   |
|                                                                        |                | T <sub>J</sub> =125°C        | 50        |           |           |      |
| Typical junction capacitance                                           | C <sub>J</sub> | V <sub>R</sub> =4.0V, f=1MHZ | 230       |           |           | pF   |

Note:

1. Mounted on copper pad area of 30 x 30mm to each terminal.

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

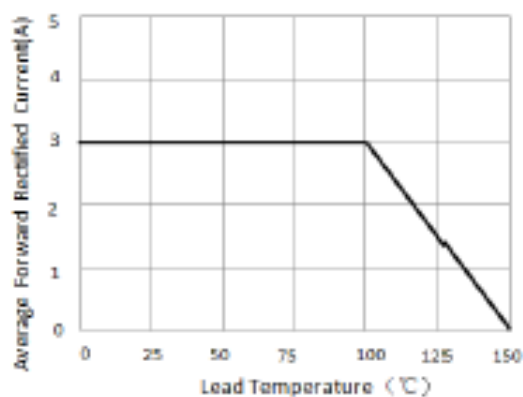


Figure 1. Forward Current Derating Curve

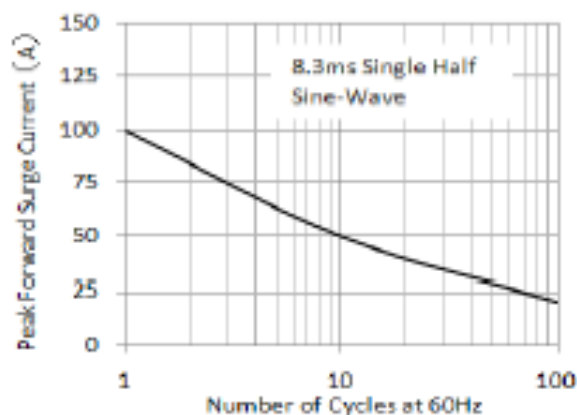


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

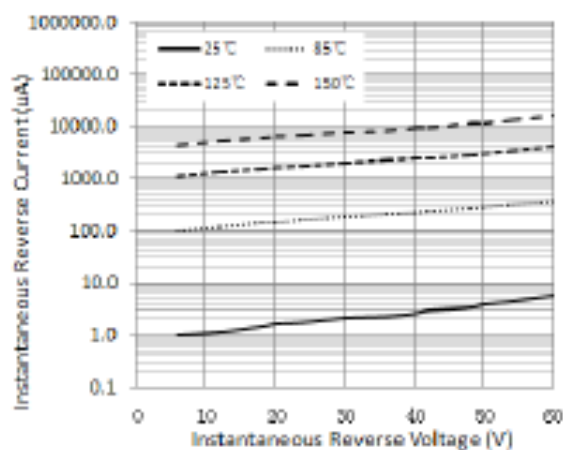


Figure 3. Typical Reverse Characteristics

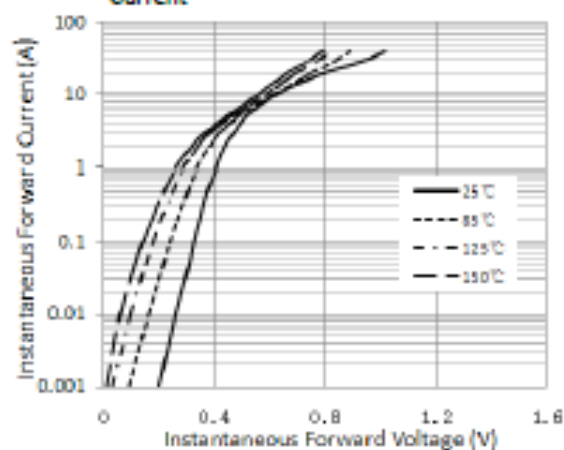


Figure 4. Typical Instantaneous Forward Characteristics (SGC0320S thru SGC0345S)

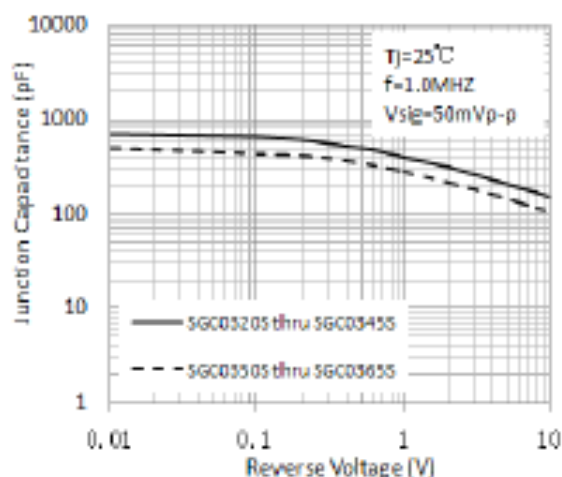


Figure 5. Typical Junction Capacitance

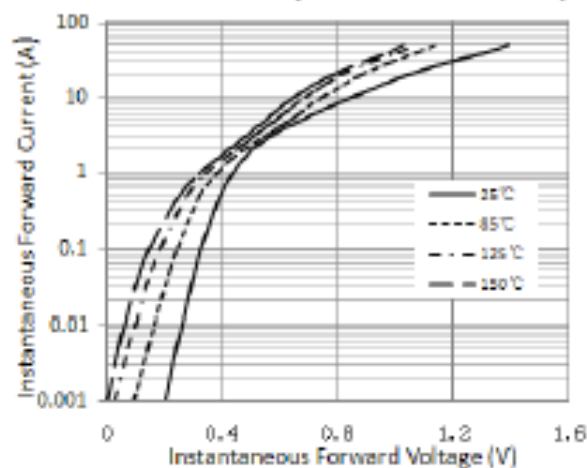
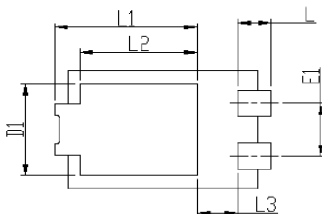
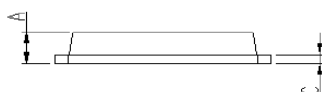
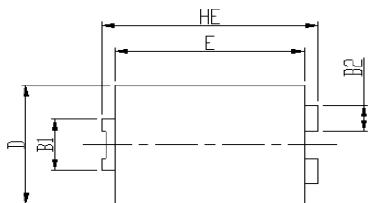


Figure 6. Typical Instantaneous Forward Characteristics (SGC0350S thru SGC0365S)

## Package Outline Dimensions

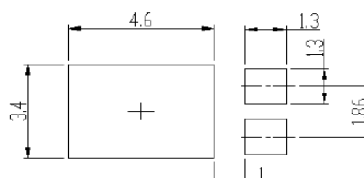
in inches (millimeters)

### eSGC (TO-277B)



| DIM | Unit: mm  |     | Unit: inch |       |
|-----|-----------|-----|------------|-------|
|     | MIN       | MAX | MIN        | MAX   |
| HE  | 6.4       | 6.6 | 0.252      | 0.260 |
| E   | 5.6       | 5.8 | 0.220      | 0.228 |
| D   | 4.1       | 4.3 | 0.161      | 0.169 |
| B1  | 1.7       | 1.9 | 0.067      | 0.075 |
| B2  | 0.8       | 1   | 0.031      | 0.039 |
| A   | 1.05      | 1.2 | 0.041      | 0.047 |
| C   | 0.3       | 0.4 | 0.012      | 0.016 |
| L   | 0.85      | 1.1 | 0.033      | 0.043 |
| L1  | 4.2       | 4.4 | 0.165      | 0.173 |
| L2  | 3.52 Typ. |     | 0.139 Typ. |       |
| L3  | 1.1       | 1.4 | 0.043      | 0.055 |
| D1  | 3         | 3.3 | 0.118      | 0.130 |
| E1  | 1.86 Typ. |     | 0.073 Typ. |       |

Soldering footprint



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