

## Schottky Barrier Rectifier

### FEATURES

- Low forward voltage drop
- Low power loss, high efficiency
- Guardring for overvoltage protection
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



**TS-1**



### MECHANICAL DATA

**Case:** TS-1

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "G" on packing code - halogen-free

Base P/N with prefix "H" on packing code - AEC-Q101 qualified

**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 1A whisker test,

with prefix "H" on packing code meet JESD 201 class 2 whisker test

**Weight:** 0.2g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                   |                    |              |           |           |              |           |           |            |            |      |
|----------------------------------------------------------------------------------------------------------------|--------------------|--------------|-----------|-----------|--------------|-----------|-----------|------------|------------|------|
| PARAMETER                                                                                                      | SYMBOL             | SRT<br>12    | SRT<br>13 | SRT<br>14 | SRT<br>15    | SRT<br>16 | SRT<br>19 | SRT<br>110 | SRT<br>115 | UNIT |
| Maximum repetitive peak reverse voltage                                                                        | V <sub>RRM</sub>   | 20           | 30        | 40        | 50           | 60        | 90        | 100        | 150        | V    |
| Maximum RMS voltage                                                                                            | V <sub>RMS</sub>   | 14           | 21        | 28        | 35           | 42        | 63        | 70         | 105        | V    |
| Maximum DC blocking voltage                                                                                    | V <sub>DC</sub>    | 20           | 30        | 40        | 50           | 60        | 90        | 100        | 150        | V    |
| Maximum average forward rectified current                                                                      | I <sub>F(AV)</sub> | 1            |           |           |              |           |           |            |            | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load                            | I <sub>FSM</sub>   | 25           |           |           |              |           |           |            |            | A    |
| Maximum instantaneous forward voltage (Note 1)<br>@ 1 A                                                        | V <sub>F</sub>     | 0.55         |           |           | 0.70         |           | 0.80      |            | 0.90       | V    |
| Maximum reverse current @ rated VR    T <sub>J</sub> =25 °C<br>T <sub>J</sub> =100°C<br>T <sub>J</sub> =125 °C | I <sub>R</sub>     | 0.5          |           |           |              |           | 0.1       |            |            | mA   |
|                                                                                                                |                    | 10           |           |           | 5            |           | -         |            |            |      |
|                                                                                                                |                    | -            |           |           | -            |           | 2         |            |            |      |
| Typical junction capacitance (Note 2)                                                                          | C <sub>j</sub>     | 110          |           |           | 80           |           | 28        |            |            | pF   |
| Typical thermal resistance                                                                                     | R <sub>θJA</sub>   | 50           |           |           |              |           |           |            |            | °C/W |
| Operating junction temperature range                                                                           | T <sub>J</sub>     | - 55 to +125 |           |           | - 55 to +150 |           |           |            |            | °C   |
| Storage temperature range                                                                                      | T <sub>STG</sub>   | - 55 to +150 |           |           |              |           |           |            |            | °C   |

Note 1: Pulse test with PW=300 μs, 1% duty cycle

Note 2: Measured at 1.0 MHz and Applied V<sub>R</sub>=4.0 Volts

| ORDERING INFORMATION |                    |              |                     |         |                                |
|----------------------|--------------------|--------------|---------------------|---------|--------------------------------|
| PART NO.             | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | PACKAGE | PACKING                        |
| SRT1xx<br>(Note 1)   | Prefix "H"         | A0           | Suffix "G"          | TS-1    | 3,000 / Ammo box (52mm taping) |
|                      |                    | A1           |                     | TS-1    | 3,000 / Ammo box (26mm taping) |
|                      |                    | R0           |                     | TS-1    | 5,000 / 13" Paper reel         |
|                      |                    | B0           |                     | TS-1    | 1,000 / Bulk packing           |

Note 1: "xx" defines voltage from 20V (SRT12) to 150V (SRT115)

| EXAMPLE       |          |                    |              |                     |                    |
|---------------|----------|--------------------|--------------|---------------------|--------------------|
| PREFERRED P/N | PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
| SRT16 A0      | SRT16    |                    | A0           |                     |                    |
| SRT16 A0G     | SRT16    |                    | A0           | G                   | Green compound     |
| SRT16HA0      | SRT16    | H                  | A0           |                     | AEC-Q101 qualified |

### RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG. 1- MAXIMUM FORWARD CURRENT DERATING CURVE

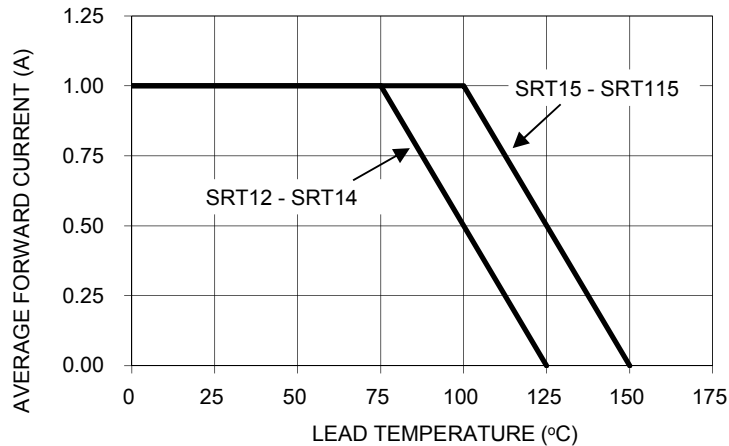


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

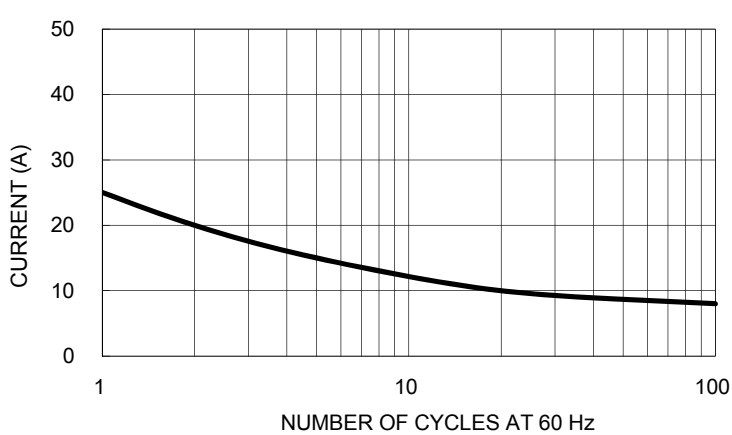


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

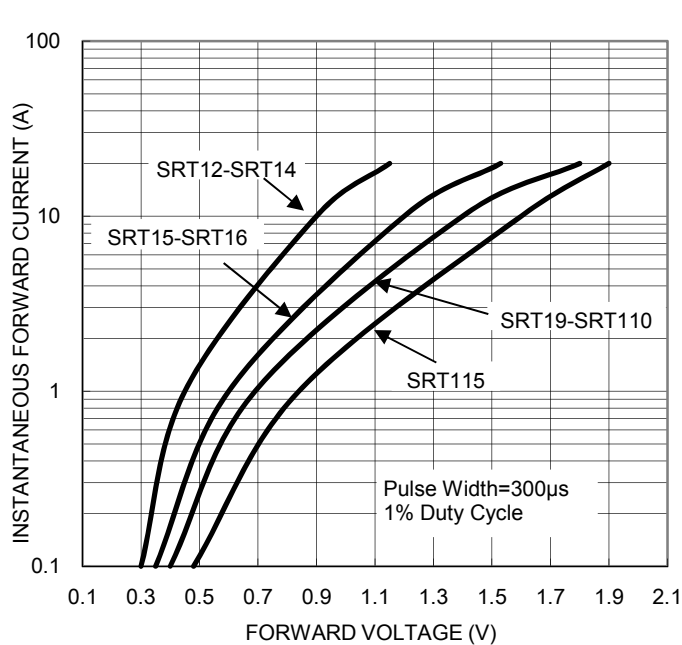


FIG. 4- TYPICAL REVERSE CHARACTERISTICS

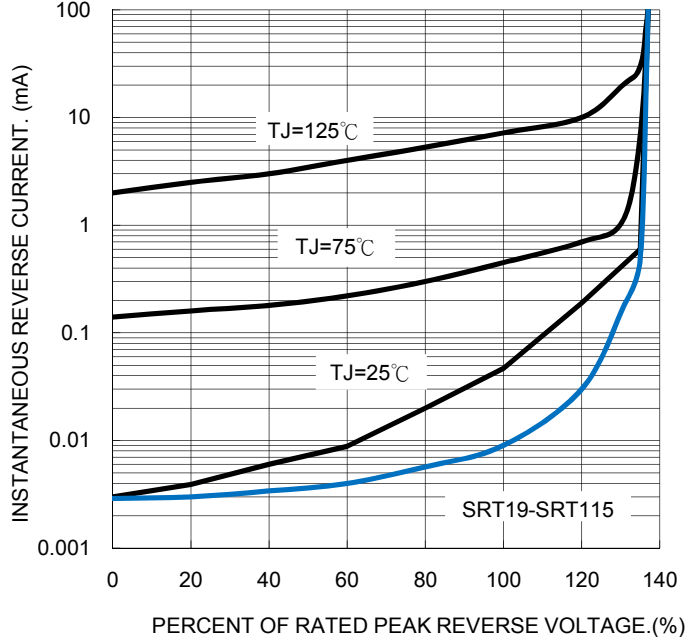


FIG. 5- TYPICAL JUNCTION CAPACITANCE

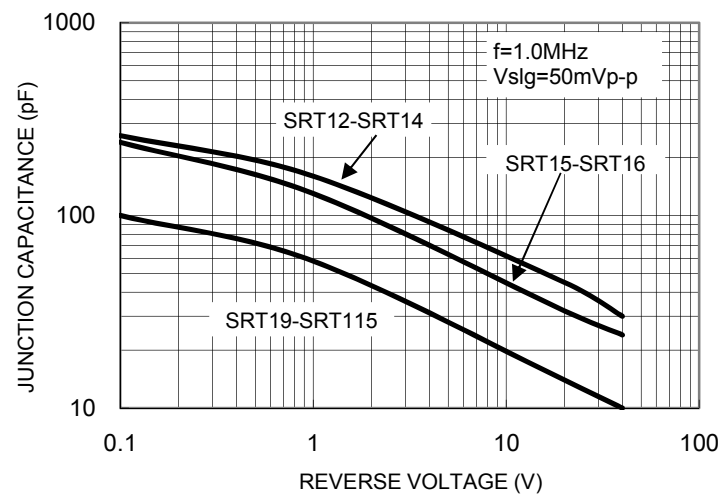
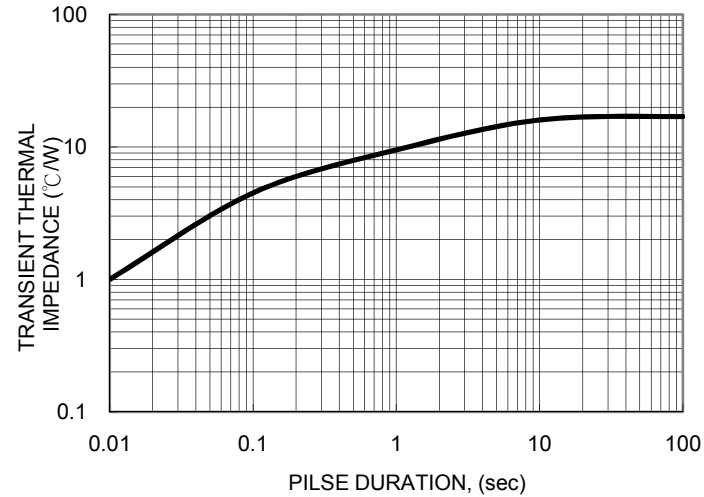
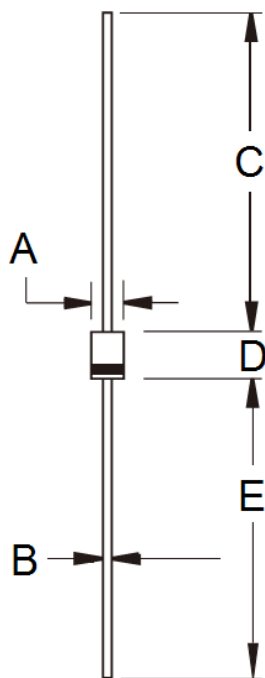


FIG. 6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS

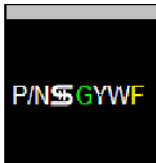


PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 2.00      | 2.70 | 0.079       | 0.106 |
| B    | 0.53      | 0.64 | 0.021       | 0.025 |
| C    | 25.40     | -    | 1.000       | -     |
| D    | 3.00      | 3.30 | 0.118       | 0.130 |
| E    | 25.40     | -    | 1.000       | -     |

MARKING DIAGRAM



P/N = Specific Device Code  
 G = Green Compound  
 YW = Date Code  
 F = Factory Code

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