

## 1A, 20 - 150V Surface Mount Schottky Barrier Rectifiers

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- 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



Sub SMA



### MECHANICAL DATA

**Case:** Sub SMA

Molding compound, UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Part no. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

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

Meet JESD 201 class 2 whisker test

**Polarity:** Indicated by cathode band

**Weight:** 0.019 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                 |                    |               |              |              |              |              |              |            |              |      |
|--------------------------------------------------------------------------------------------------------------|--------------------|---------------|--------------|--------------|--------------|--------------|--------------|------------|--------------|------|
| PARAMETER                                                                                                    | SYMBOL             | SS<br>12L     | SS<br>13L    | SS<br>14L    | SS<br>15L    | SS<br>16L    | SS<br>19L    | SS<br>110L | SS<br>115L   | UNIT |
| Marking code                                                                                                 |                    | 12L           | 13L          | 14L          | 15L          | 16L          | 19L          | 10L        | A5L          |      |
| 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>   | 30            |              |              |              |              |              |            |              | A    |
| Maximum instantaneous forward voltage (Note 1)<br>@ 0.5A<br>@ 1.0A                                           | V <sub>F</sub>     | 0.385<br>0.45 | 0.43<br>0.50 | 0.51<br>0.55 | 0.58<br>0.70 |              | 0.70<br>0.80 |            | 0.75<br>0.90 | V    |
| T <sub>J</sub> =25°C<br>Maximum reverse current @ rated VR<br>T <sub>J</sub> =100°C<br>T <sub>J</sub> =125°C | I <sub>R</sub>     | 0.4           |              |              |              |              | 0.05         |            |              | mA   |
|                                                                                                              |                    | 8.0           | 6.0          |              |              |              | -            |            |              |      |
|                                                                                                              |                    | -             |              |              |              |              | 0.5          |            |              |      |
| Voltage rate of change (Rated V <sub>R</sub> )                                                               | dV/dt              | 10000         |              |              |              |              |              |            |              | V/μs |
| Typical thermal resistance                                                                                   | R <sub>θJL</sub>   | 45            |              |              |              |              |              |            |              | °C/W |
|                                                                                                              | R <sub>θJA</sub>   | 100           |              |              |              |              |              |            |              |      |
| 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=300μs, 1% duty cycle

| ORDERING INFORMATION |                 |              |                     |         |                                       |
|----------------------|-----------------|--------------|---------------------|---------|---------------------------------------|
| PART NO.             | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | PACKAGE | PACKING                               |
| SS1XL<br>(Note 1)    | H               | RU           | G                   | Sub SMA | 1,800 / 7" Plastic reel (8mm tape)    |
|                      |                 | RV           |                     | Sub SMA | 3,000 / 7" Plastic reel (8mm tape)    |
|                      |                 | RT           |                     | Sub SMA | 7,500 / 13" Paper reel (8mm tape)     |
|                      |                 | MT           |                     | Sub SMA | 7,500 / 13" Plastic reel (8mm tape)   |
|                      |                 | RQ           |                     | Sub SMA | 10,000 / 13" Paper reel (8mm tape)    |
|                      |                 | MQ           |                     | Sub SMA | 10,000 / 13" Plastic reel (8mm tape)  |
|                      |                 | R3           |                     | Sub SMA | 1,800 / 7" Plastic reel (12mm tape)   |
|                      |                 | RF           |                     | Sub SMA | 3,000 / 7" Plastic reel (12mm tape)   |
|                      |                 | R2           |                     | Sub SMA | 7,500 / 13" Paper reel (12mm tape)    |
|                      |                 | M2           |                     | Sub SMA | 7,500 / 13" Plastic reel (12mm tape)  |
|                      |                 | RH           |                     | Sub SMA | 10,000 / 13" Paper reel (12mm tape)   |
|                      |                 | MH           |                     | Sub SMA | 10,000 / 13" Plastic reel (12mm tape) |

Note 1: "x" defines voltage from 20V (SS12L) to 150V (SS115L)

| EXAMPLE            |          |                 |              |                     |                                      |
|--------------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| PREFERRED PART NO. | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
| SS16LHRUG          | SS16L    | H               | RU           | G                   | AEC-Q101 qualified<br>Green compound |

# RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub>=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

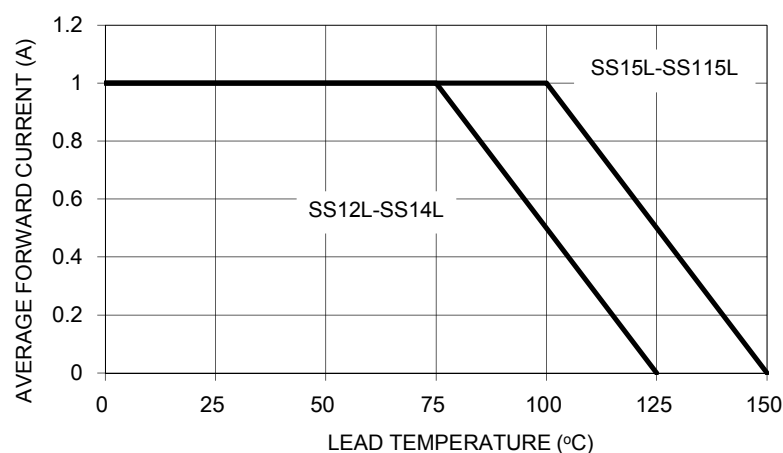


FIG. 2 MAXIMUM FORWARD SURGE CURRENT

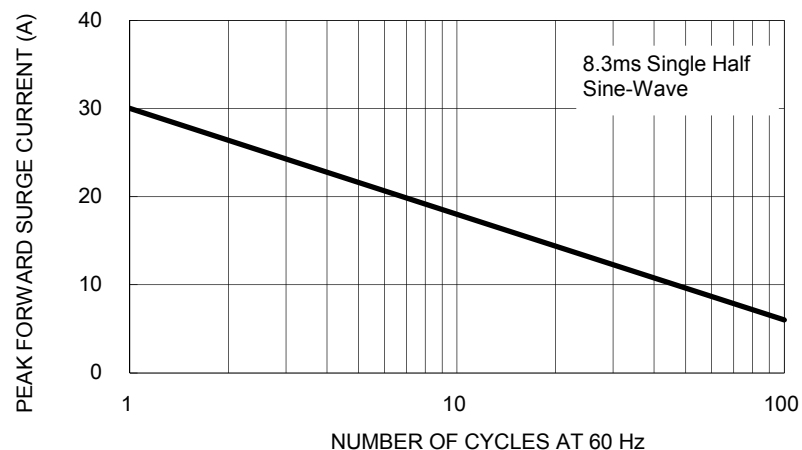


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

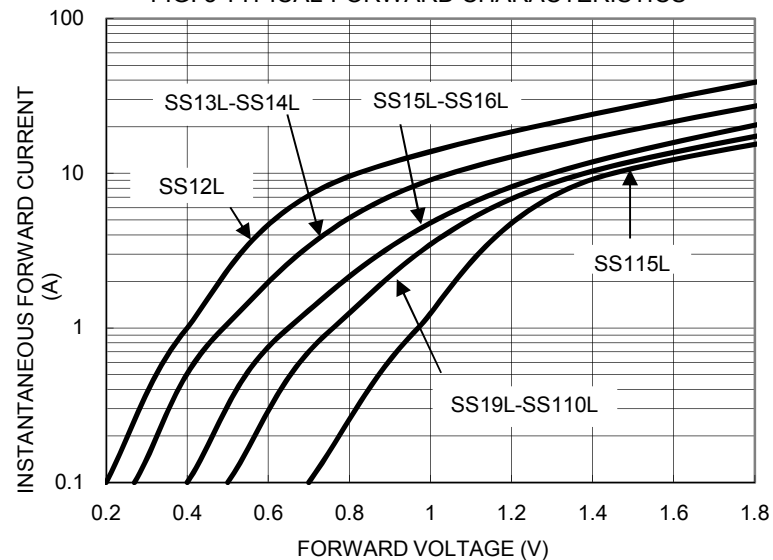


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

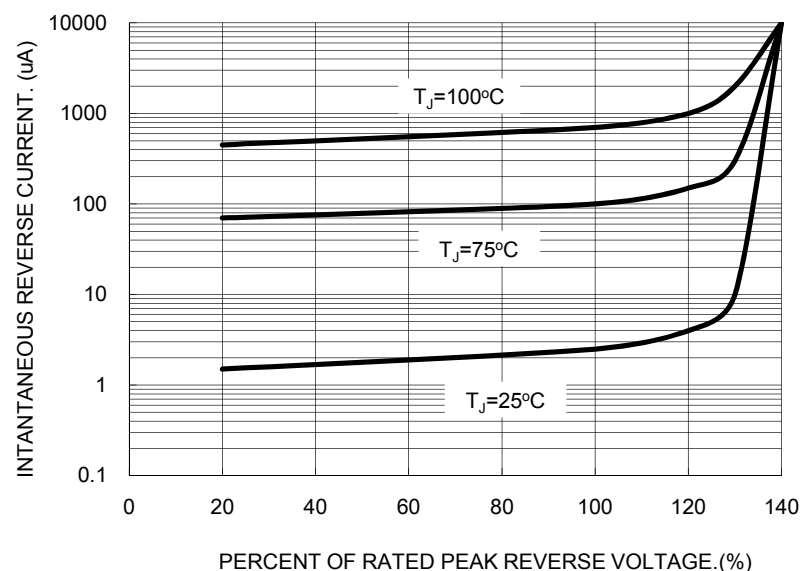


FIG. 5 TYPICAL JUNCTION CAPACITANCE

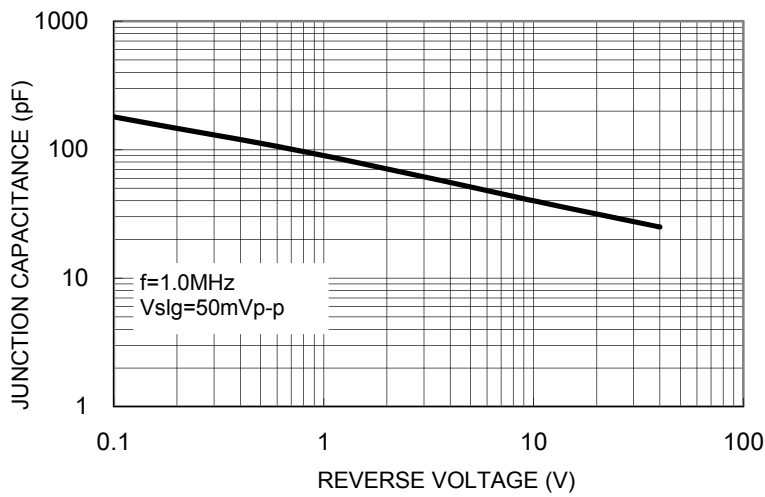
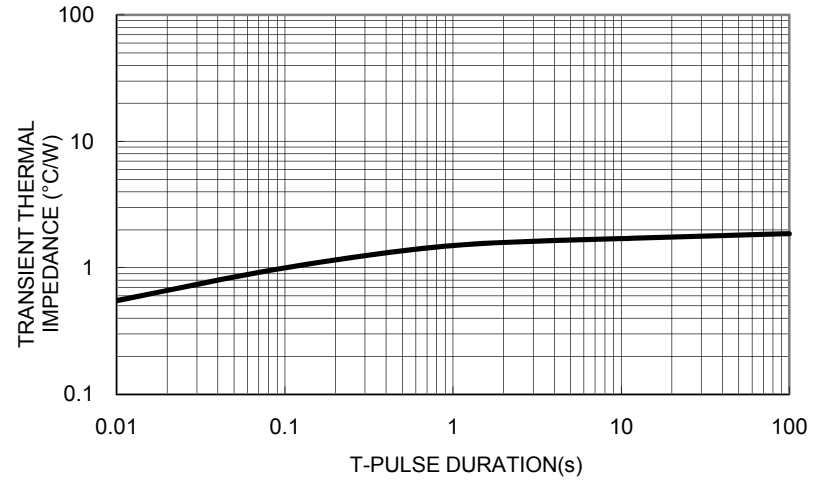
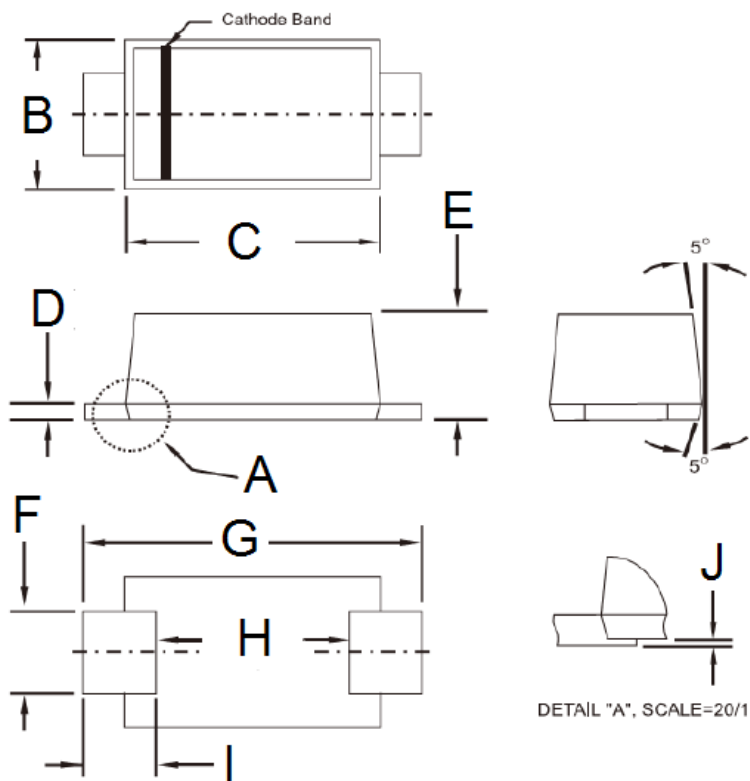


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



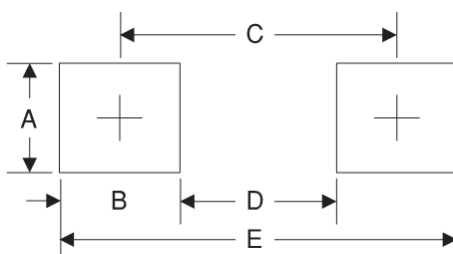
## PACKAGE OUTLINE DIMENSIONS

### Sub SMA



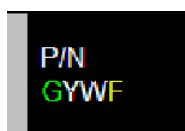
| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| B    | 1.70      | 1.90 | 0.067       | 0.075 |
| C    | 2.70      | 2.90 | 0.106       | 0.114 |
| D    | 0.16      | 0.30 | 0.006       | 0.012 |
| E    | 1.23      | 1.43 | 0.048       | 0.056 |
| F    | 0.80      | 1.20 | 0.031       | 0.047 |
| G    | 3.40      | 3.80 | 0.134       | 0.150 |
| H    | 2.45      | 2.60 | 0.096       | 0.102 |
| I    | 0.35      | 0.85 | 0.014       | 0.033 |
| J    | 0.00      | 0.10 | 0.000       | 0.004 |

## SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 1.4       | 0.055       |
| B      | 1.2       | 0.047       |
| C      | 3.1       | 0.122       |
| D      | 1.9       | 0.075       |
| E      | 4.3       | 0.169       |

## MARKING DIAGRAM



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

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