

## Surface Mount Schottky Barrier Rectifier

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Guardring for overvoltage protection
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



### MECHANICAL DATA

**Case:** DO-214AA (SMB)

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

**Polarity:** Indicated by cathode band

**Weight:** 0.093 g (approximately)

**DO-214AA (SMB)**

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                                |                    |              |           |           |           |              |           |            |            |      |
|---|--------------------|--------------|-----------|-----------|-----------|--------------|-----------|------------|------------|------|
| PARAMETER   | SYMBOL             | SK<br>12B    | SK<br>13B | SK<br>14B | SK<br>15B | SK<br>16B    | SK<br>19B | SK<br>110B | SK<br>115B | 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>   | 30           |           |           |           |              |           |            |            | A    |
| Maximum instantaneous forward voltage (Note 1) @ 1 A  | V <sub>F</sub>     | 0.5          |           | 0.75      |           | 0.85         |           | 0.95       |            | V    |
| Maximum reverse current @ rated V <sub>R</sub><br>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            |           |            |            |      |
| Voltage rate of change (Rated V <sub>R</sub> )  | dV/dt              | 10000        |           |           |           |              |           |            |            | V/μs |
| Typical thermal resistance  | R <sub>θJL</sub>   | 25           |           |           |           |              |           |            |            | °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=300μs, 1% duty cycle

| ORDERING INFORMATION |                    |              |                     |         |                          |
|----------------------|--------------------|--------------|---------------------|---------|--------------------------|
| PART NO.             | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | PACKAGE | PACKING                  |
| SK1xxB<br>(Note 1)   | Prefix "H"         | R5           | Suffix "G"          | SMB     | 850 / 7" Plastic reel    |
|                      |                    | R4           |                     | SMB     | 3,000 / 13" Paper reel   |
|                      |                    | M4           |                     | SMB     | 3,000 / 13" Plastic reel |

Note 1: "xx" defines voltage from 20V (SK12B) to 200V (SK150B)

| EXAMPLE       |          |                    |              |                     |                    |
|---------------|----------|--------------------|--------------|---------------------|--------------------|
| PREFERRED P/N | PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
| SK16B R5      | SK16B    |                    | R5           |                     |                    |
| SK16B R5G     | SK16B    |                    | R5           | G                   | Green compound     |
| SK16BHR5      | SK16B    | H                  | R5           |                     | AEC-Q101 qualified |

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

FIG. 1- MAXIMUM FORWARD CURRENT DERATING CURVE

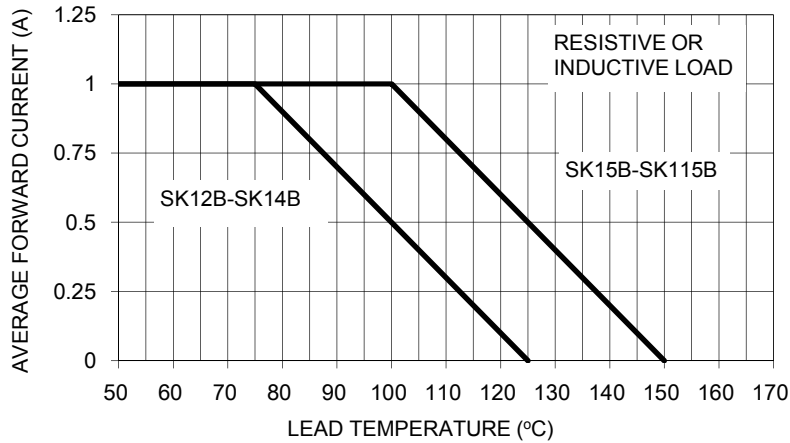


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

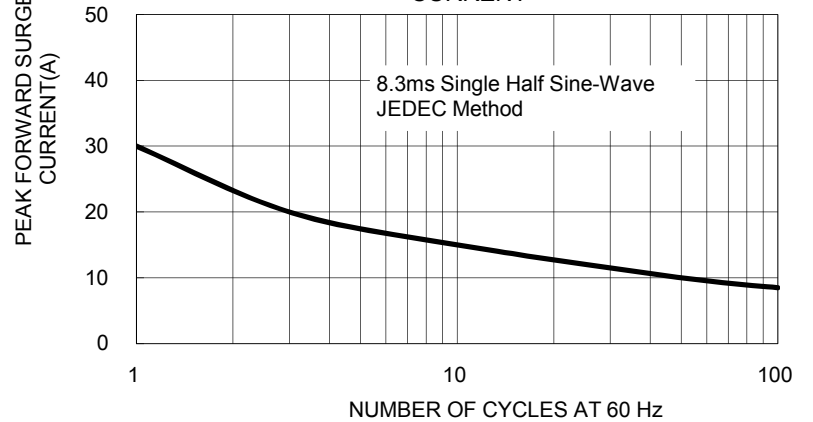


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

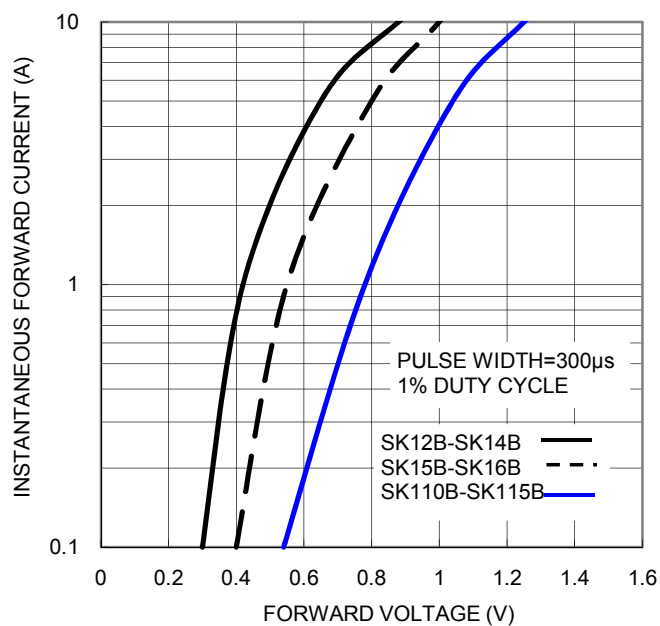


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

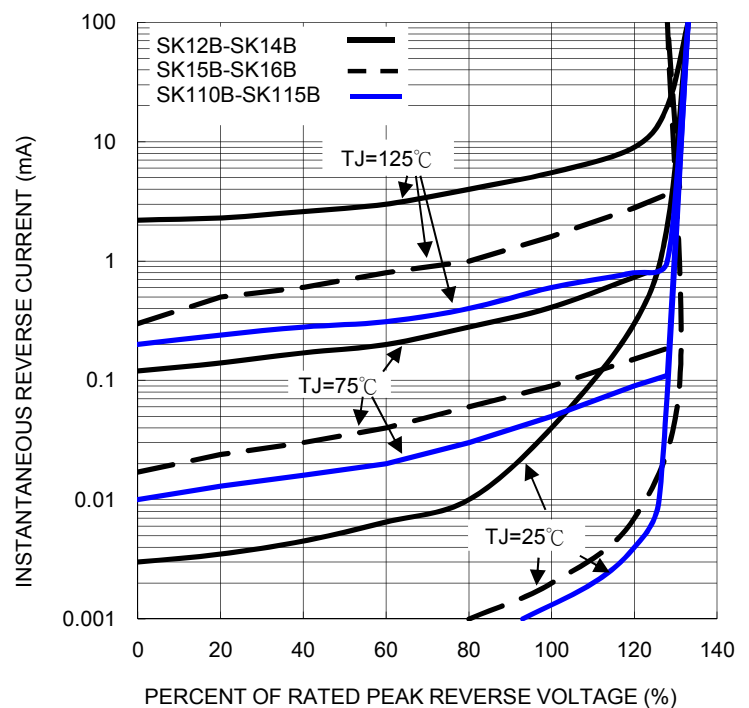


FIG. 5 TYPICAL JUNCTION CAPACITANCE

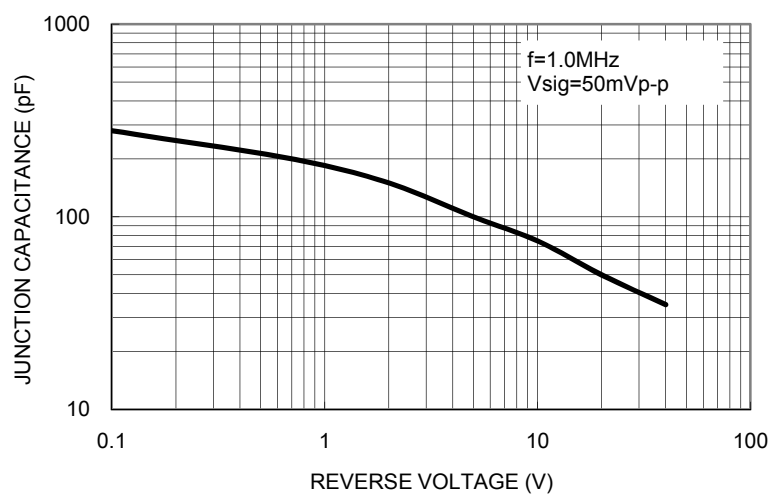
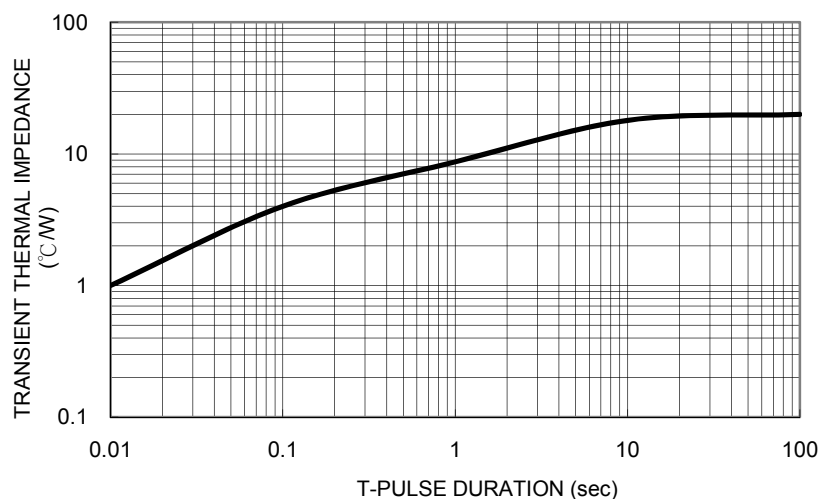
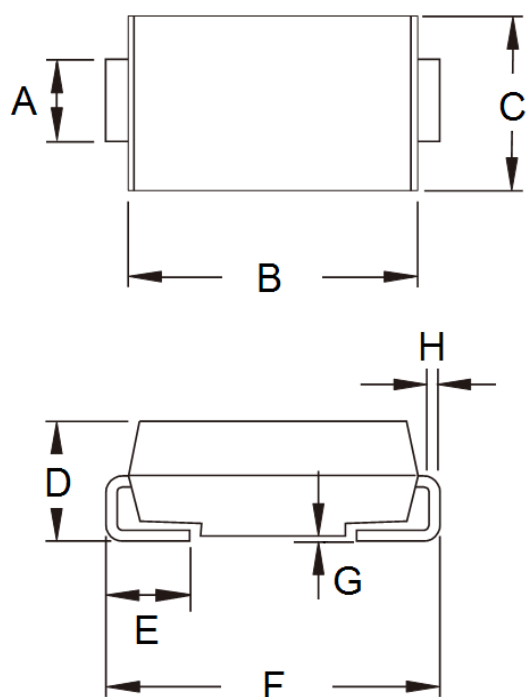


FIG. 6 TYPICAL TRANSIENT THERMAL CHARACTERISTICS

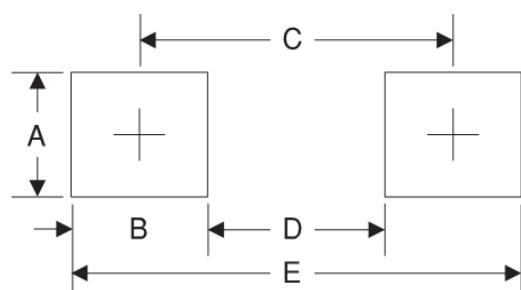


PACKAGE OUTLINE DIMENSIONS



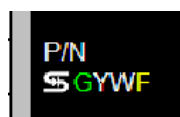
| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 1.95      | 2.10 | 0.077       | 0.083 |
| B    | 4.25      | 4.75 | 0.167       | 0.187 |
| C    | 3.48      | 3.73 | 0.137       | 0.147 |
| D    | 1.99      | 2.61 | 0.078       | 0.103 |
| E    | 0.90      | 1.41 | 0.035       | 0.056 |
| F    | 5.10      | 5.30 | 0.201       | 0.209 |
| G    | 0.10      | 0.20 | 0.004       | 0.008 |
| H    | 0.15      | 0.31 | 0.006       | 0.012 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 2.3       | 0.091       |
| B      | 2.5       | 0.098       |
| C      | 4.3       | 0.169       |
| D      | 1.8       | 0.071       |
| E      | 6.8       | 0.268       |

MARKING DIAGRAM



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

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