

## 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
- Available: Commercial or AEC-Q101-qualified



### MECHANICAL DATA

**Case:** DO-214AC (SMA)

Molding compound, UL flammability classification rating 94V-0

Base P/N with suffix "H" on P/N - Automotive grade

Base P/N with suffix "G" on packing code - green compound (halogen-free)

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

Meet JESD 201 class 1A whisker test

with suffix "H" on P/N meet JESD 201 class 2 whisker test

**Polarity:** Indicated by cathode band

**Weight:** 0.07 g (approximately)

**DO-214AC (SMA)**

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                   |                    |              |        |        |        |        |        |         |         |         |      |
|----------------------------------------------------------------------------------------------------------------|--------------------|--------------|--------|--------|--------|--------|--------|---------|---------|---------|------|
| PARAMETER                                                                                                      | SYMBOL             | SK 32A       | SK 33A | SK 34A | SK 35A | SK 36A | SK 39A | SK 310A | SK 315A | SK 320A | Unit |
| Maximum repetitive peak reverse voltage                                                                        | V <sub>RRM</sub>   | 20           | 30     | 40     | 50     | 60     | 90     | 100     | 150     | 200     | V    |
| Maximum RMS voltage                                                                                            | V <sub>RMS</sub>   | 14           | 21     | 28     | 35     | 42     | 63     | 70      | 105     | 140     | V    |
| Maximum DC blocking voltage                                                                                    | V <sub>DC</sub>    | 20           | 30     | 40     | 50     | 60     | 90     | 100     | 150     | 200     | V    |
| Maximum average forward rectified current                                                                      | I <sub>F(AV)</sub> | 3            |        |        |        |        |        |         |         |         | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load                            | I <sub>FSM</sub>   | 70           |        |        |        |        |        |         |         |         | A    |
| Maximum instantaneous forward voltage (Note 1) @ 3 A                                                           | V <sub>F</sub>     | 0.55         |        |        | 0.72   |        | 0.85   |         | 0.95    |         | V    |
| Maximum reverse current @ rated VR<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          |        |        | 0.2    |        | 0.1    |         |         | mA      |      |
|                                                                                                                |                    | 10           |        |        | 5      |        | -      |         |         |         |      |
|                                                                                                                |                    | -            |        |        | 10     |        | 0.5    |         |         |         |      |
| Voltage Rate of Change (Rated V <sub>R</sub> )                                                                 | dV/dt              | 10000        |        |        |        |        |        |         |         |         | V/μs |
| Typical thermal resistance                                                                                     | R <sub>θJL</sub>   | 25           |        |        |        |        |        |         |         |         | °C/W |
|                                                                                                                | R <sub>θJA</sub>   | 66           |        |        |        |        |        |         |         |         |      |
| Operating junction temperature range                                                                           | T <sub>J</sub>     | - 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                  |
| SK3xxA<br>(Note 1)   | H               | R3           | G                   | SMA        | 1,800 / 7" Plastic reel  |
|                      |                 | R2           |                     | SMA        | 7,500 / 13" Paper reel   |
|                      |                 | M2           |                     | SMA        | 7,500 / 13" Plastic reel |
|                      |                 | F3           |                     | Folded SMA | 1,800 / 7" Plastic reel  |
|                      |                 | F2           |                     | Folded SMA | 7,500 / 13" Paper reel   |
|                      |                 | F4           |                     | Folded SMA | 7,500 / 13" Plastic reel |
|                      | N/A             | E3           |                     | Clip SMA   | 1,800 / 7" Plastic reel  |
|                      |                 | E2           |                     | Clip SMA   | 7,500 / 13" Paper reel   |

Note 1: "xx" defines voltage from 20V (SK32A) to 200V (SK320A)

| EXAMPLE       |          |                 |              |                     |                  |
|---------------|----------|-----------------|--------------|---------------------|------------------|
| PREFERRED P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION      |
| SK36A R3      | SK36A    |                 | R3           |                     |                  |
| SK36A R3G     | SK36A    |                 | R3           | G                   | Green compound   |
| SK36AHR3      | SK36A    | H               | R3           |                     | Automotive grade |

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub>=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

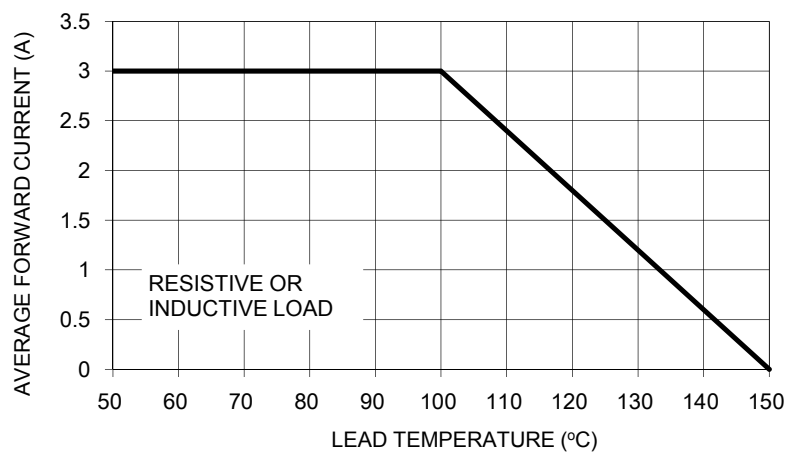


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

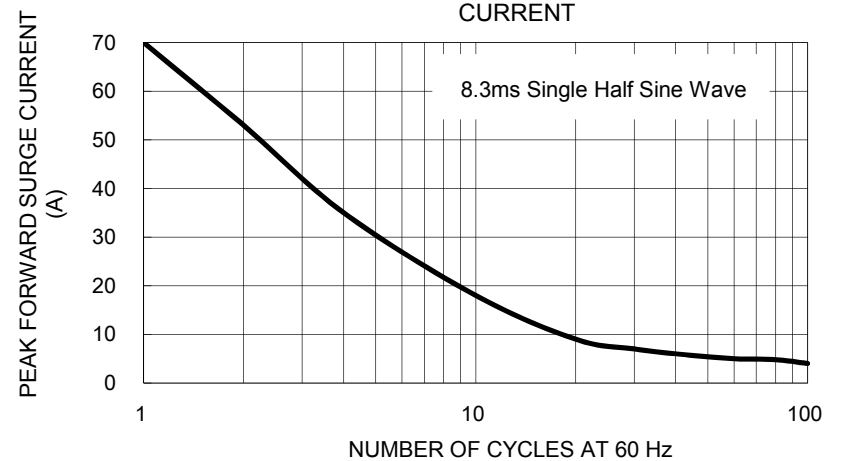


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

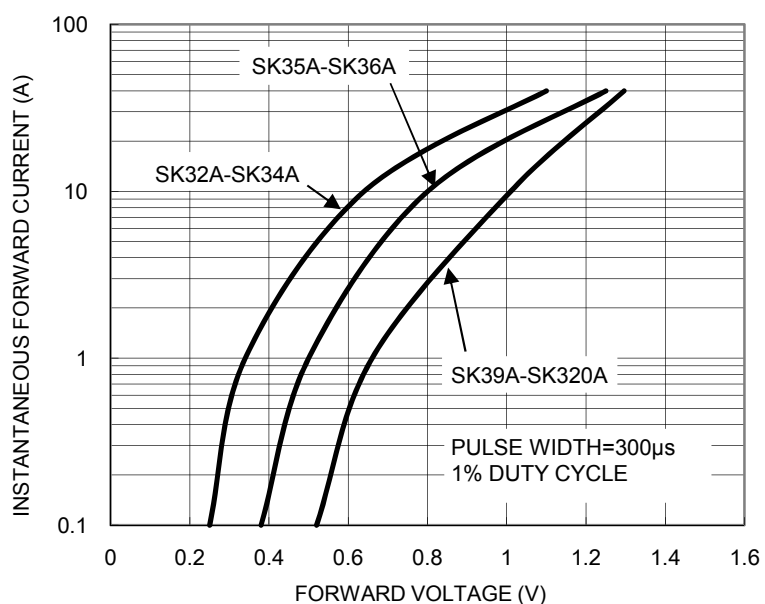


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

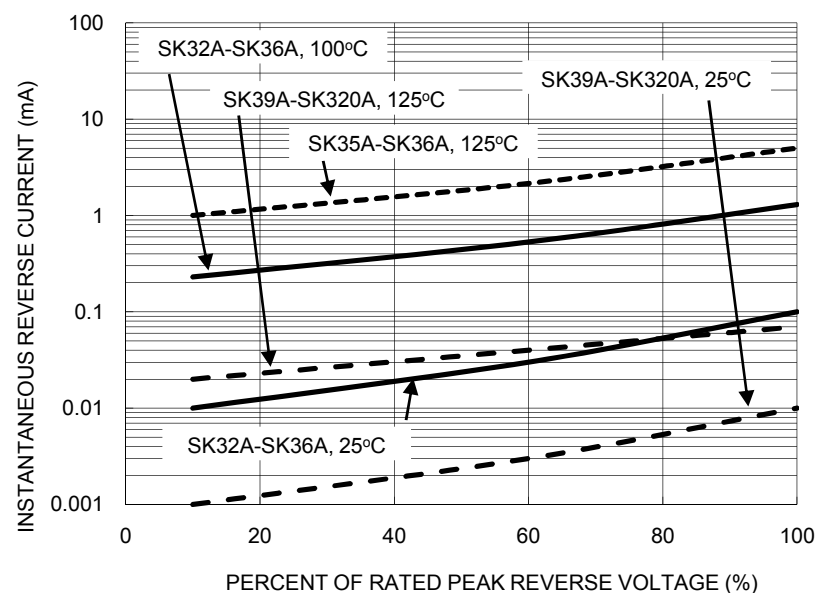


FIG. 5 TYPICAL JUNCTION CAPACITANCE

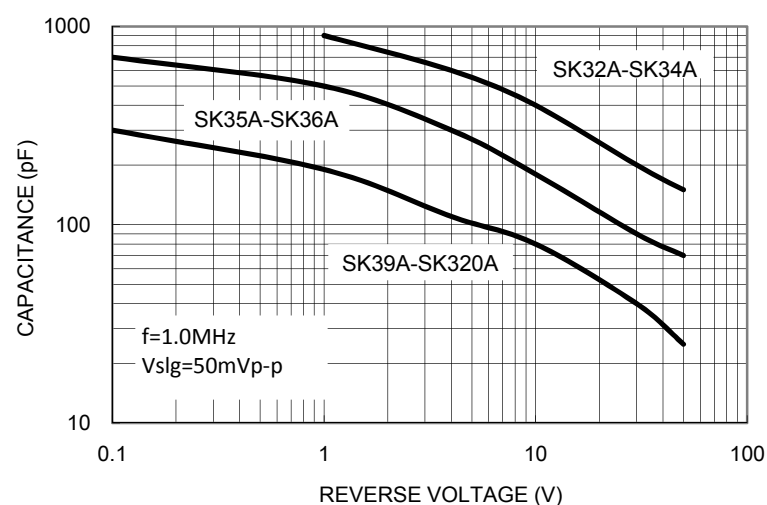
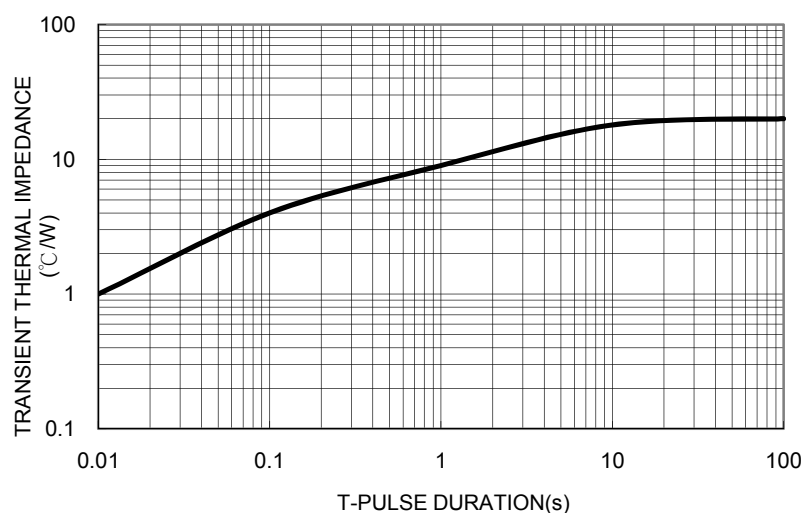
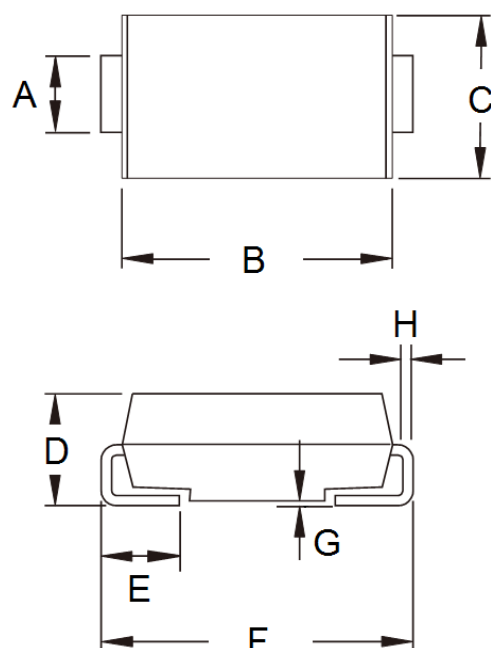


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

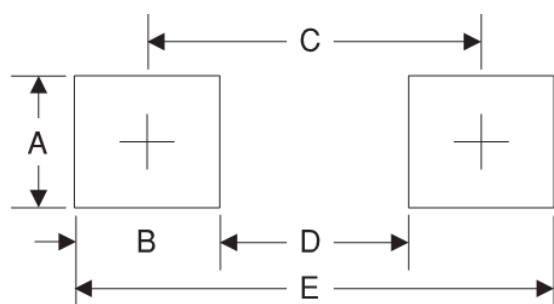


## PACKAGE OUTLINE DIMENSIONS DO-214AC (SMA)



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 1.27      | 1.58 | 0.050       | 0.062 |
| B    | 4.06      | 4.60 | 0.160       | 0.181 |
| C    | 2.29      | 2.83 | 0.090       | 0.111 |
| D    | 1.99      | 2.50 | 0.078       | 0.098 |
| E    | 0.90      | 1.41 | 0.035       | 0.056 |
| F    | 4.95      | 5.33 | 0.195       | 0.210 |
| 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      | 1.68      | 0.066       |
| B      | 1.52      | 0.060       |
| C      | 3.93      | 0.155       |
| D      | 2.41      | 0.095       |
| E      | 5.45      | 0.215       |

## MARKING DIAGRAM



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

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