

## 5A, 20V - 200V 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



### MECHANICAL DATA

**Case:** DO-214AB (SMC)

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:** 0.21 g (approximately)

DO-214AB (SMC)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                             |                    |              |        |        |        |        |        |         |         |         |      |
|--------------------------------------------------------------------------------------------------------------------------|--------------------|--------------|--------|--------|--------|--------|--------|---------|---------|---------|------|
| PARAMETER                                                                                                                | SYMBOL             | SK 52C       | SK 53C | SK 54C | SK 55C | SK 56C | SK 59C | SK 510C | SK 515C | SK 520C | 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> | 5            |        |        |        |        |        |         |         |         | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load                                      | I <sub>FSM</sub>   | 120          |        |        |        |        |        |         |         |         | A    |
| Maximum instantaneous forward voltage (Note 1)<br>I <sub>F</sub> = 5 A                                                   | V <sub>F</sub>     | 0.55         |        |        | 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          |        |        |        |        | 0.3    |         |         |         | mA   |
|                                                                                                                          |                    | 20           |        |        | 10     |        | -      |         |         |         |      |
|                                                                                                                          |                    | -            |        |        | -      |        | 5      |         |         |         |      |
| Voltage rate of change (Rated V <sub>R</sub> )                                                                           | dV/dt              | 10000        |        |        |        |        |        |         |         |         | V/μs |
| Typical thermal resistance                                                                                               | R <sub>θJL</sub>   | 17           |        |        |        |        |        |         |         |         | °C/W |
|                                                                                                                          | R <sub>θJA</sub>   | 50           |        |        |        |        |        |         |         |         |      |
| 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                  |
| SK5xxC<br>(Note 1)   | H               | R7           | G                   | SMC     | 850 / 7" Plastic reel    |
|                      |                 | R6           |                     | SMC     | 3,000 / 13" Paper reel   |
|                      |                 | M6           |                     | SMC     | 3,000 / 13" Plastic reel |

Note 1: "xx" defines voltage from 20V (SK52C) to 200V (SK520C)

| EXAMPLE            |          |                 |              |                     |                                      |
|--------------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| PREFERRED PART NO. | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
| SK56CHR7G          | SK56C    | H               | R7           | 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

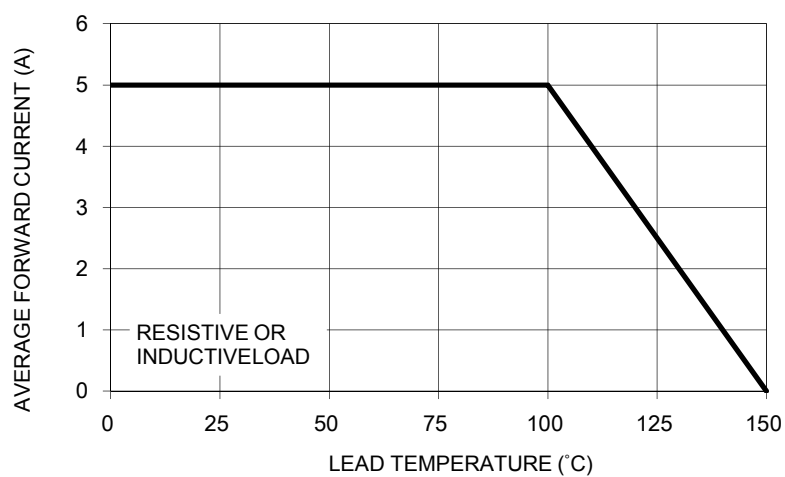


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

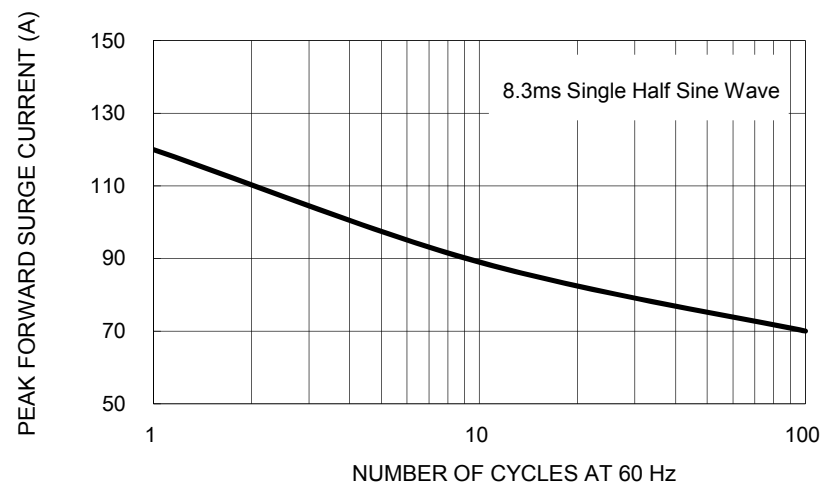


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

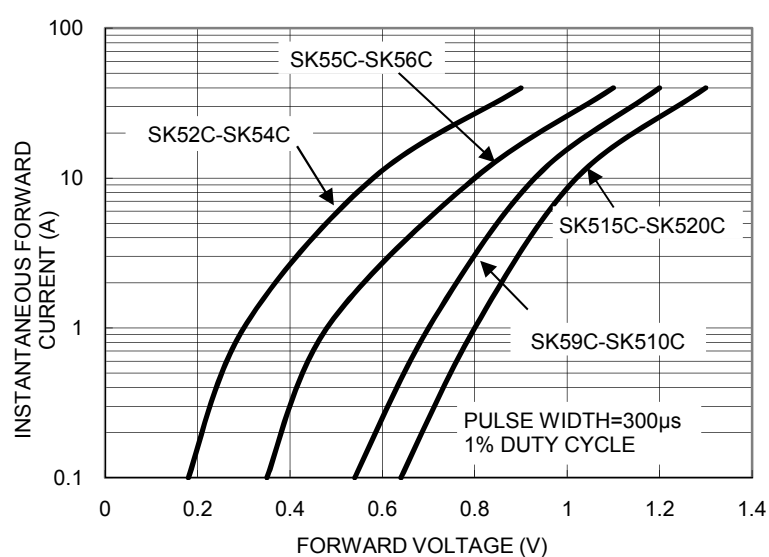


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

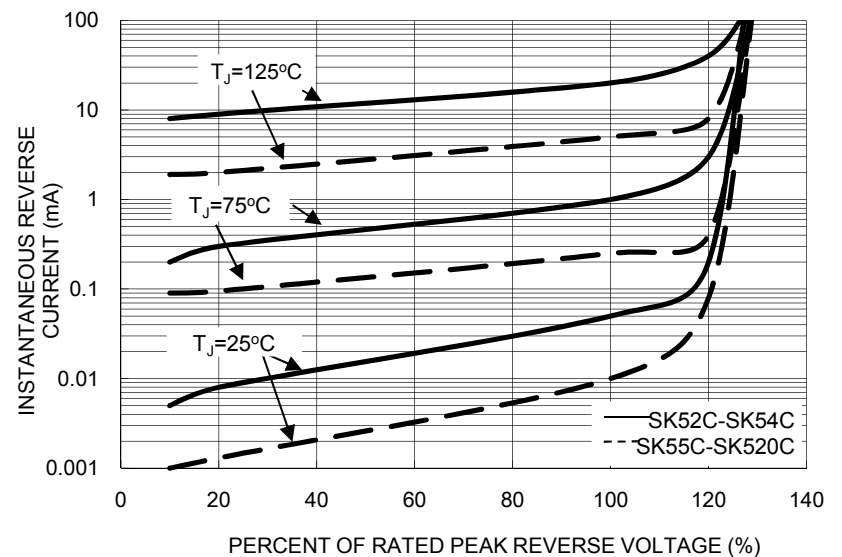


FIG. 5 TYPICAL JUNCTION CAPACITANCE

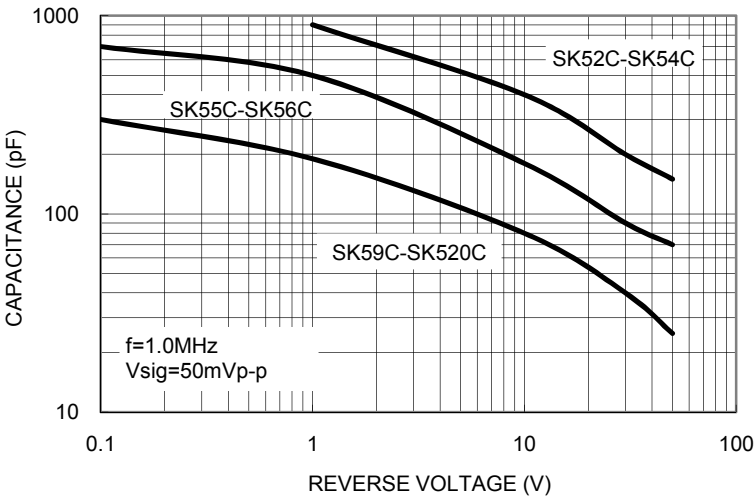
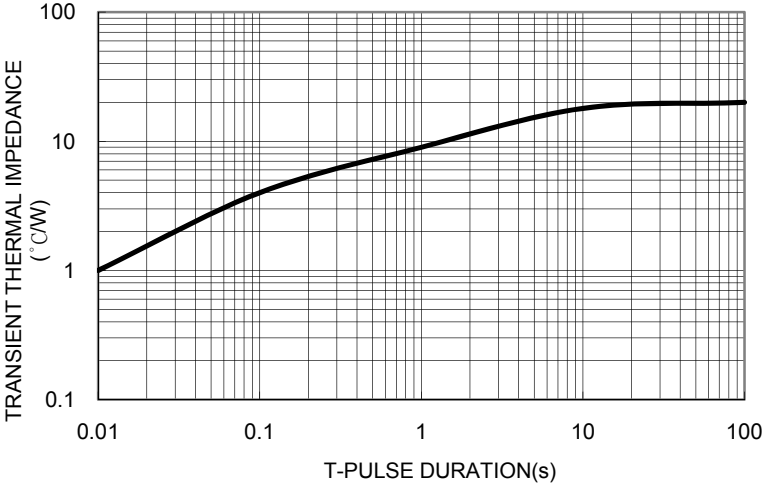
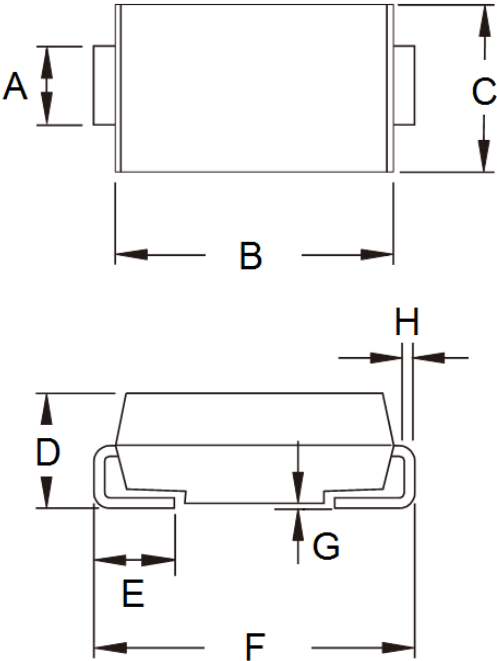


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

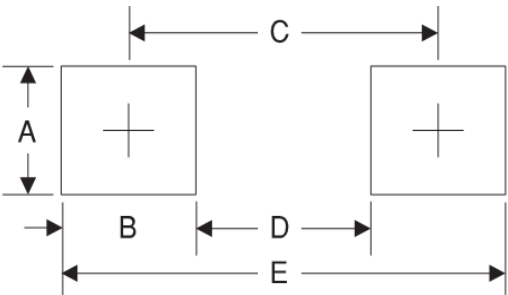


**PACKAGE OUTLINE DIMENSIONS**  
**DO-214AB (SMC)**



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 2.90      | 3.20 | 0.114       | 0.126 |
| B    | 6.60      | 7.11 | 0.260       | 0.280 |
| C    | 5.59      | 6.22 | 0.220       | 0.245 |
| D    | 2.00      | 2.62 | 0.079       | 0.103 |
| E    | 1.00      | 1.60 | 0.039       | 0.063 |
| F    | 7.75      | 8.13 | 0.305       | 0.320 |
| 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      | 3.3       | 0.130       |
| B      | 2.5       | 0.098       |
| C      | 6.8       | 0.268       |
| D      | 4.4       | 0.173       |
| E      | 9.4       | 0.370       |

**MARKING DIAGRAM**



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

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