

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


DO-214AB (SMC)

MECHANICAL DATA

Case: DO-214AB (SMC)

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: 0.21 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =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 _{RRM} | 20 | 30 | 40 | 50 | 60 | 90 | 100 | 150 | 200 | V | |
| Maximum RMS voltage | V _{RMS} | 14 | 21 | 28 | 35 | 42 | 63 | 70 | 105 | 140 | V | |
| Maximum DC blocking voltage | V _{DC} | 20 | 30 | 40 | 50 | 60 | 90 | 100 | 150 | 200 | V | |
| Maximum average forward rectified current | I _{F(AV)} | 5 | | | | | | | | | A | |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 120 | | | | | | | | | A | |
| Maximum instantaneous forward voltage (Note 1) I _F = 5 A | V _F | 0.55 | | | 0.75 | | 0.85 | | 0.95 | | V | |
| Maximum reverse current @ rated VR T _J =25 °C T _J =100 °C T _J =125 °C | I _R | 0.5 | | | | | 0.3 | | | | | mA |
| | | 20 | | | 10 | | - | | | | | |
| | | - | | | - | | 5 | | | | | |
| Voltage rate of change (Rated V _R) | dV/dt | 10000 | | | | | | | | | V/μs | |
| Typical thermal resistance | R _{θJL} | 17 | | | | | | | | | °C/W | |
| | R _{θJA} | 50 | | | | | | | | | | |
| Operating junction temperature range | T _J | - 55 to +150 | | | | | | | | | °C | |
| Storage temperature range | T _{STG} | - 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 |
| SK5xxC (Note 1) | Prefix "H" | R7 | Suffix "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 P/N | PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION |
| SK56C R7 | SK56C | | R7 | | |
| SK56C R7G | SK56C | | R7 | G | Green compound |
| SK56CHR7 | SK56C | H | R7 | | AEC-Q101 qualified |

RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG. 1 FORWARD CURRENT DERATING CURVE

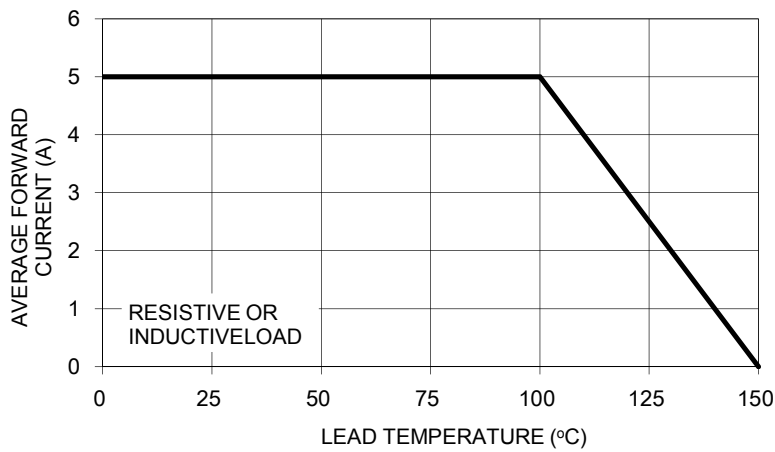


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

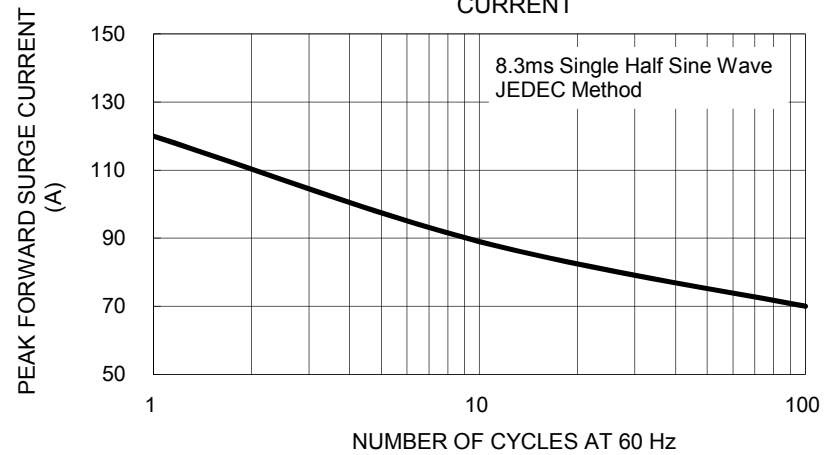


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

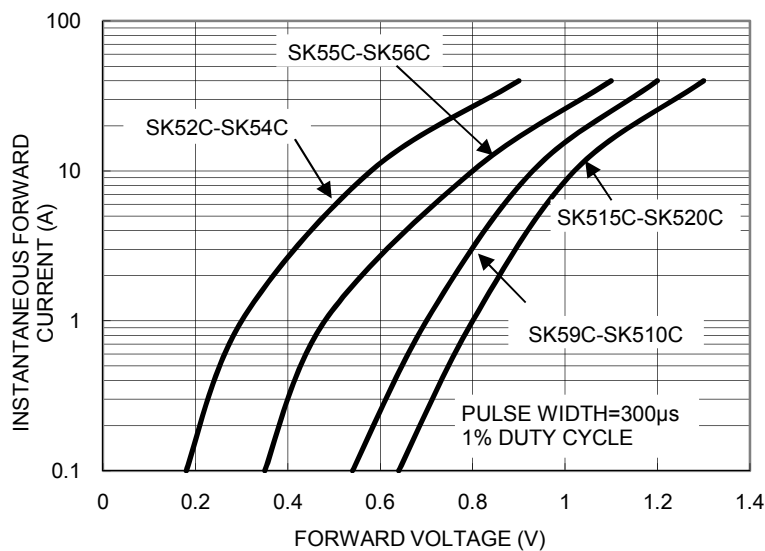


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

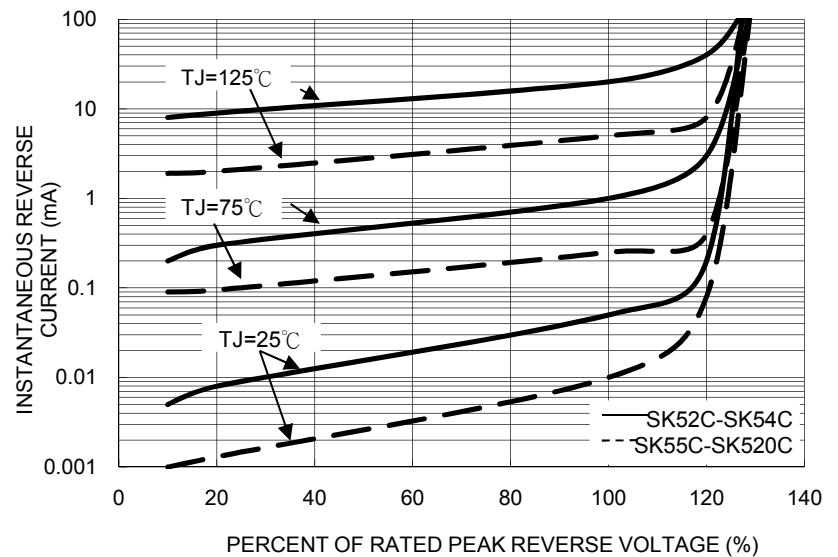


FIG. 5 TYPICAL JUNCTION CAPACITANCE

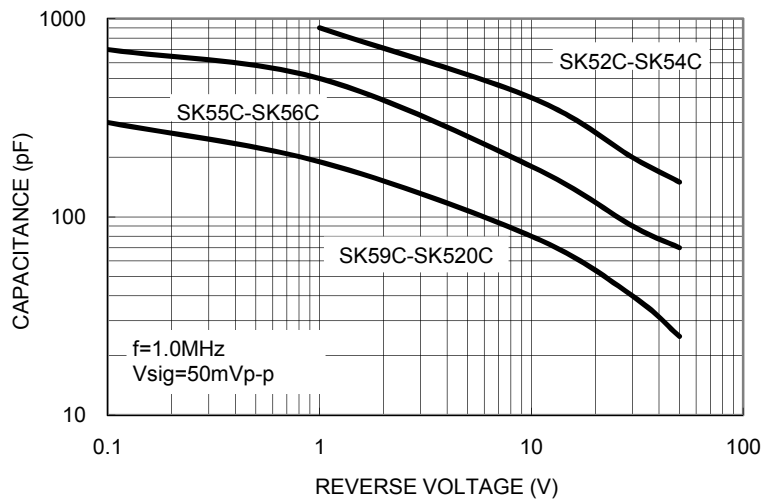
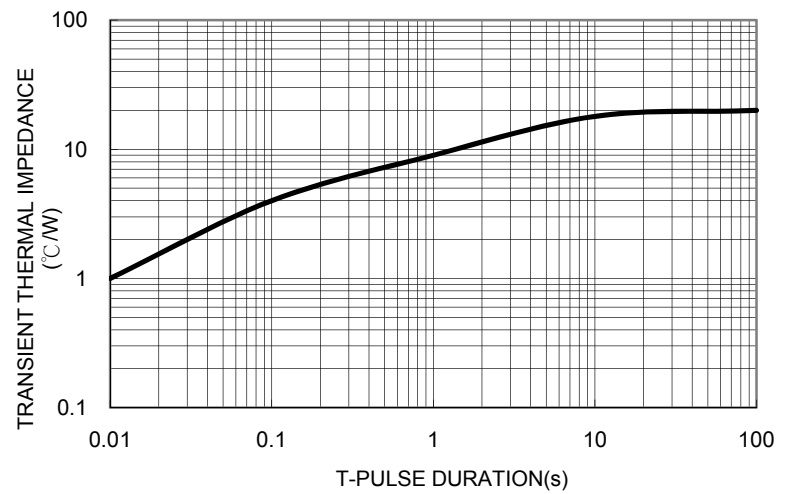
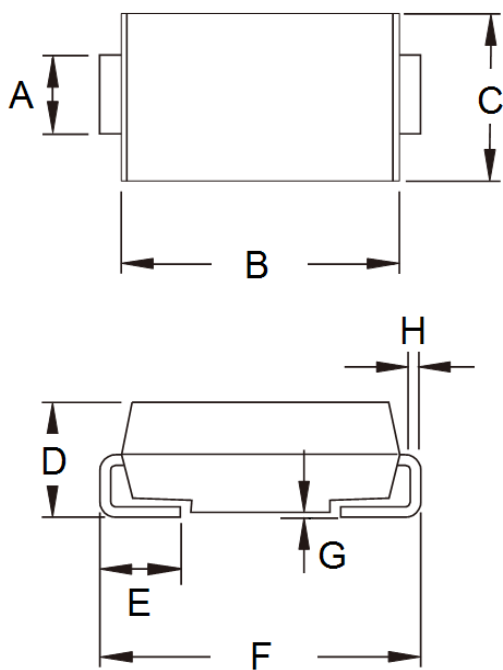


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

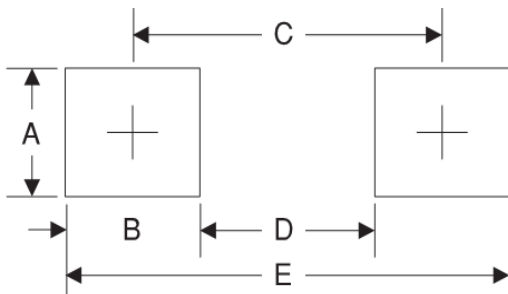


PACKAGE OUTLINE DIMENSIONS



| 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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