

Surface Mount Rectifiers

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Low forward voltage drop
- 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 - green compound (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: 0.09 g (approximately)

DO-214AA (SMB)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted) | | | | | | | | | |
|--|--------------------------------------|------------------------|-----|-----|-----|-----|-----|------|------|
| PARAMETER | SYMBOL | S2A | S2B | S2D | S2G | S2J | S2K | S2M | Unit |
| Maximum repetitive peak reverse voltage | V _{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V _{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V _{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current | I _{F(AV)} | 2 | | | | | | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 50 | | | | | | | A |
| Maximum instantaneous forward voltage (Note 1) @ 2 A | V _F | 1.15 | | | | | | | V |
| Maximum reverse current @ rated VR | I _R | 1 | | | | | | | μA |
| | | T _J =25 °C | | | | | | | |
| | | T _J =125 °C | | | | | | | 125 |
| Typical reverse recovery time (Note 2) | T _{rr} | 1.5 | | | | | | | μs |
| Typical junction capacitance (Note 3) | C _j | 30 | | | | | | | pF |
| Typical thermal resistance | R _{θJL} R _{θJA} | 16 53 | | | | | | | °C/W |
| 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

Note 2: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

| ORDERING INFORMATION | | | | | |
|----------------------|--------------------|--------------|---------------------|---------|--------------------------|
| PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | PACKAGE | PACKING |
| S2x (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: "x" defines voltage from 50V (S2A) to 1000V (S2M)

| EXAMPLE | | | | | |
|---------------|----------|--------------------|--------------|---------------------|--------------------|
| PREFERRED P/N | PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION |
| S2M R5 | S2M | | R5 | | |
| S2M R5G | S2M | | R5 | G | Green compound |
| S2MHR5 | S2M | H | R5 | | AEC-Q101 qualified |

RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

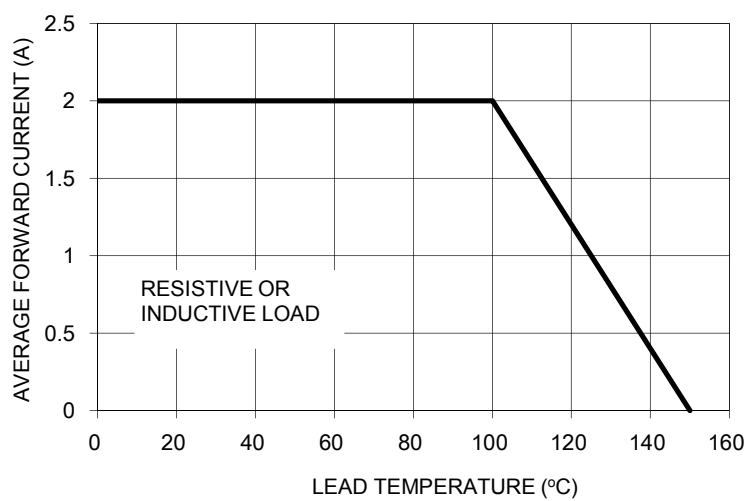


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

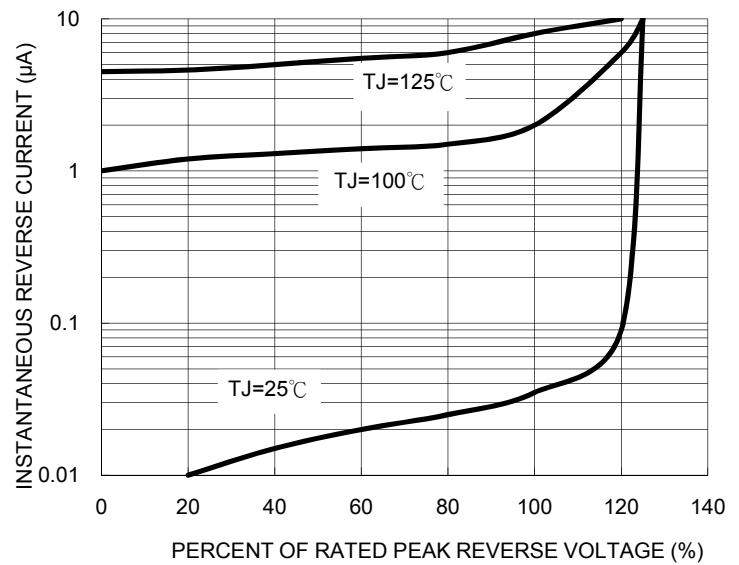


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

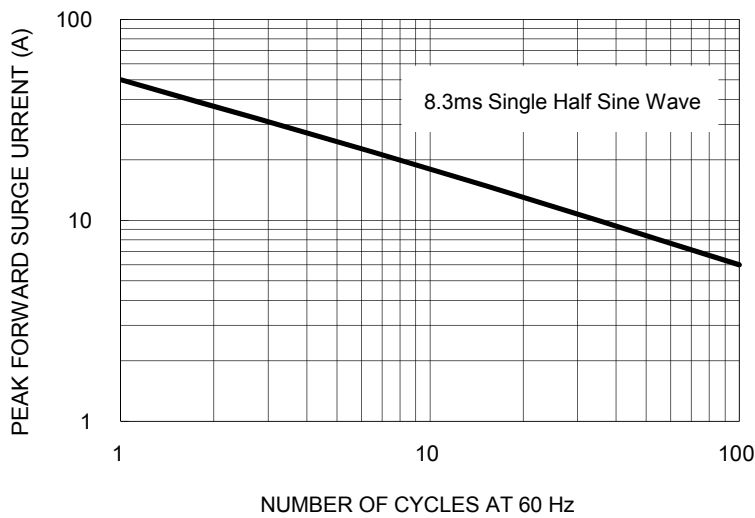


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

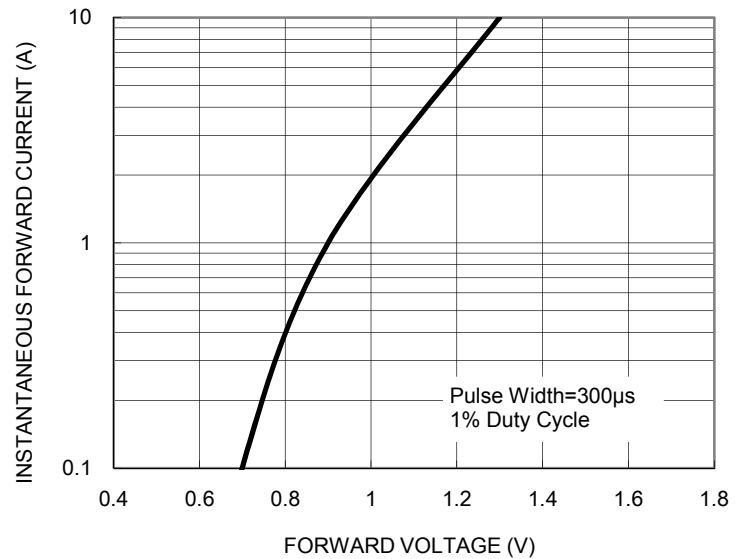


FIG. 5 TYPICAL JUNCTION CAPACITANCE

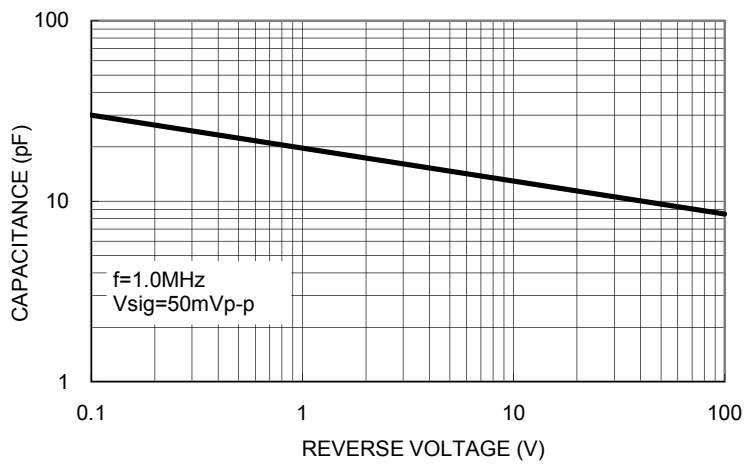
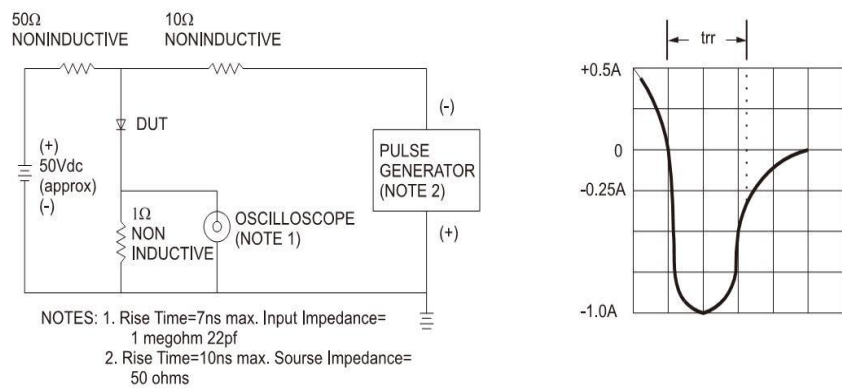
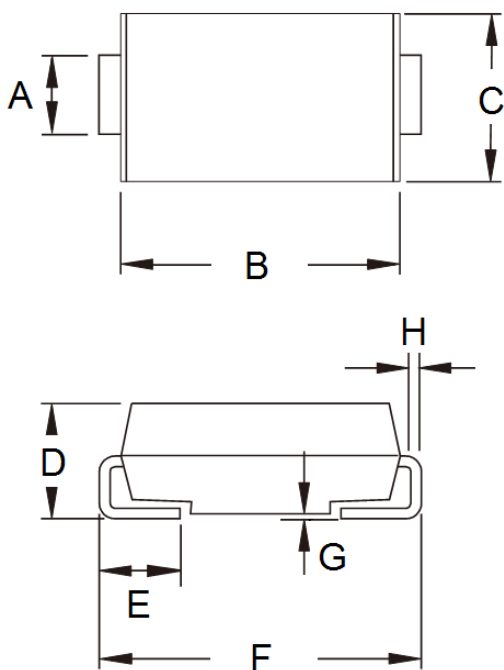


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

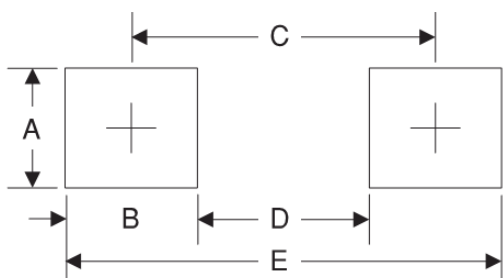


PACKAGE OUTLINE DIMENSIONS



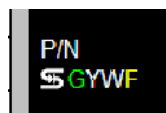
| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 1.95 | 2.10 | 0.077 | 0.083 |
| B | 4.25 | 4.75 | 0.167 | 0.187 |
| C | 3.48 | 3.73 | 0.137 | 0.147 |
| D | 1.99 | 2.61 | 0.078 | 0.103 |
| E | 0.90 | 1.41 | 0.035 | 0.056 |
| F | 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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