

## High Efficient Surface Mount Rectifiers

### FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low profile package
- Fast switching for high efficiency
- 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-214AC (SMA)

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:** 0.06 g (approximately)

**DO-214AC(SMA)**

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted) |                    |              |           |           |           |           |           |           |           |      |
|----------------------------------------------------------------------------------------------|--------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|
| PARAMETER                                                                                    | SYMBOL             | HS<br>2AA    | HS<br>2BA | HS<br>2DA | HS<br>2FA | HS<br>2GA | HS<br>2JA | HS<br>2KA | HS<br>2MA | UNIT |
| Maximum repetitive peak reverse voltage                                                      | V <sub>RRM</sub>   | 50           | 100       | 200       | 300       | 400       | 600       | 800       | 1000      | V    |
| Maximum RMS voltage                                                                          | V <sub>RMS</sub>   | 35           | 70        | 140       | 210       | 280       | 420       | 560       | 700       | V    |
| Maximum DC blocking voltage                                                                  | V <sub>DC</sub>    | 50           | 100       | 200       | 300       | 400       | 600       | 800       | 1000      | V    |
| Maximum average forward rectified current                                                    | I <sub>F(AV)</sub> | 1.5          |           |           |           |           |           |           |           | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load          | I <sub>FSM</sub>   | 50           |           |           |           |           |           |           |           | A    |
| Maximum instantaneous forward voltage (Note 1)<br>@ 1.5 A                                    | V <sub>F</sub>     | 1.0          |           |           |           | 1.3       | 1.7       |           |           | V    |
| Maximum reverse current @ rated VR    T <sub>J</sub> =25 °C<br>T <sub>J</sub> =125 °C        | I <sub>R</sub>     | 5<br>100     |           |           |           |           |           |           |           | μA   |
| Maximum reverse recovery time (Note 2)                                                       | T <sub>rr</sub>    | 50           |           |           |           |           | 75        |           |           | ns   |
| Typical junction capacitance (Note 3)                                                        | C <sub>j</sub>     | 50           |           |           |           |           | 30        |           |           | pF   |
| Typical thermal resistance                                                                   | R <sub>θJA</sub>   | 80           |           |           |           |           |           |           |           | °C/W |
| 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

Note 2: Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=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                  |
|-------------------|--------------------|--------------|---------------------|------------|--------------------------|
| HS2xA<br>(Note 1) | Prefix "H"         | R3           | Suffix "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" Plastic reel |
|                   |                    |              |                     |            |                          |

Note 1: "x" defines voltage from 50V (HS2AA) to 1000V (HS2MA)

**EXAMPLE**

| PREFERRED P/N | PART NO. | AEC-Q101 QUALIFIED | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION        |
|---------------|----------|--------------------|--------------|---------------------|--------------------|
| HS2MA R3      | HS2MA    |                    | R3           |                     |                    |
| HS2MA R3G     | HS2MA    |                    | R3           | G                   | Green compound     |
| HS2MAHR3      | HS2MA    | H                  | R3           |                     | AEC-Q101 qualified |

**RATINGS AND CHARACTERISTICS CURVES**

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

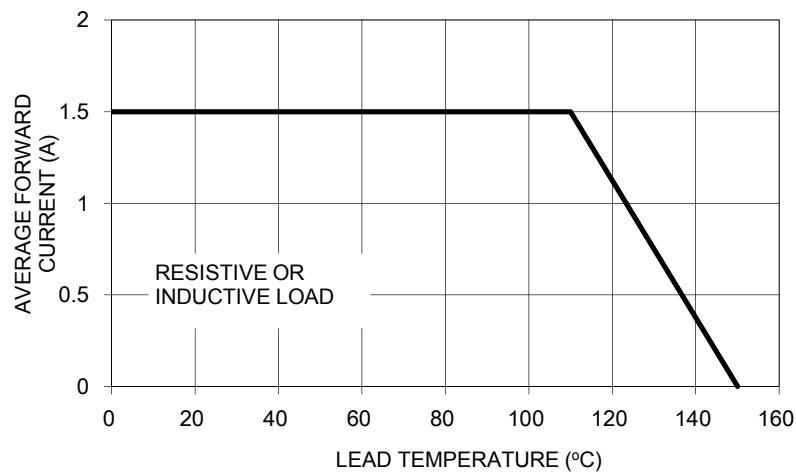


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

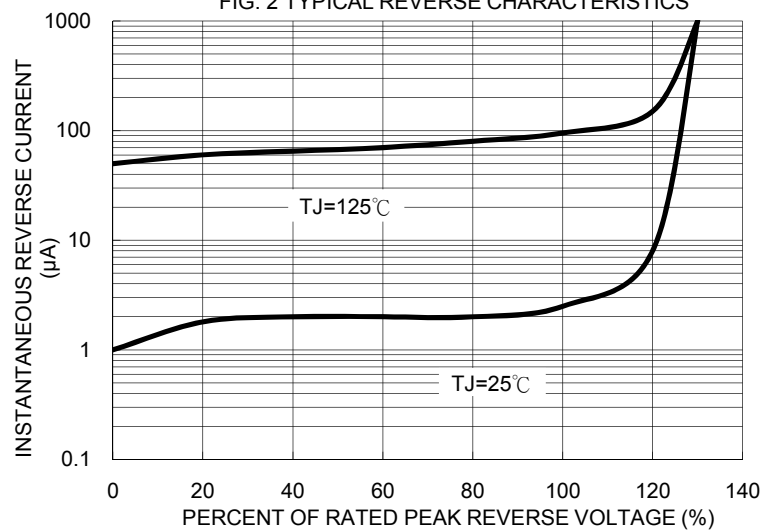


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

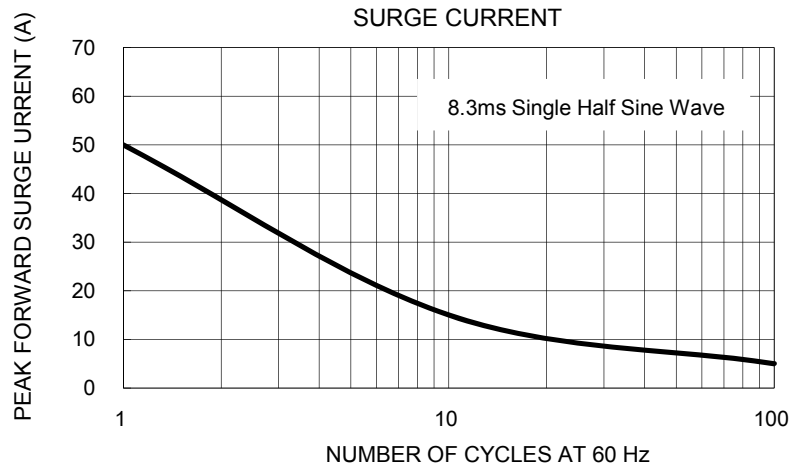


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

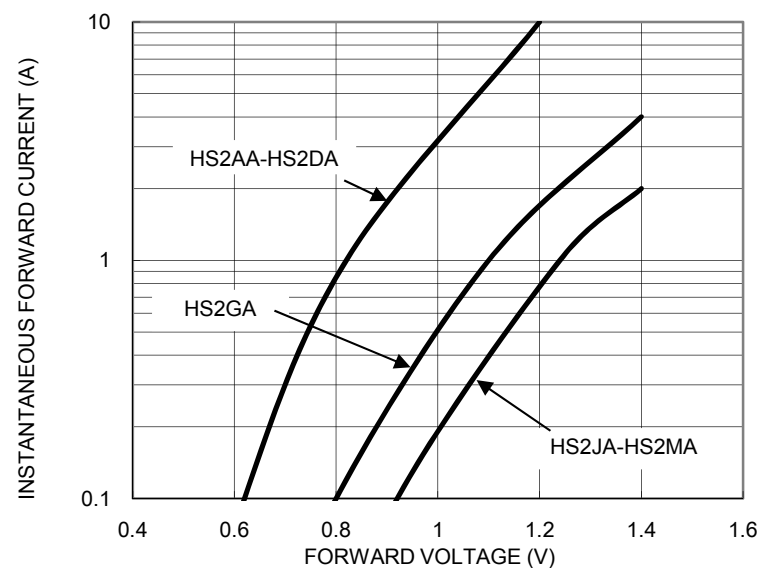


FIG. 5 TYPICAL JUNCTION CAPACITANCE

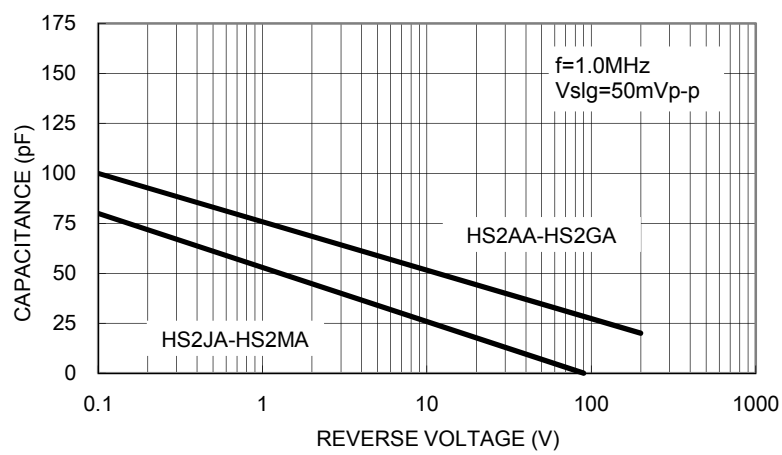
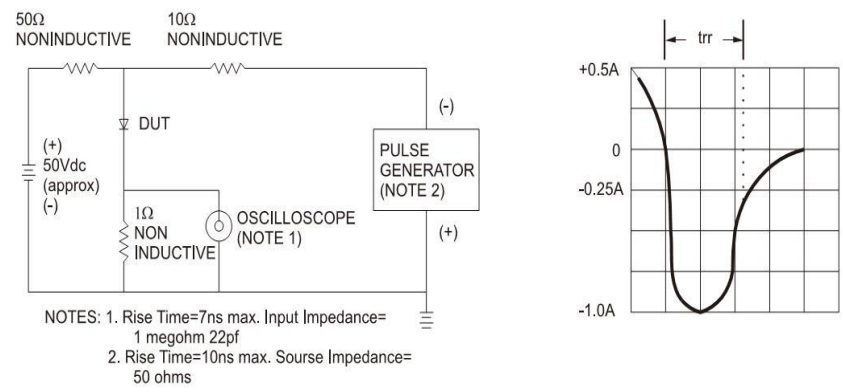
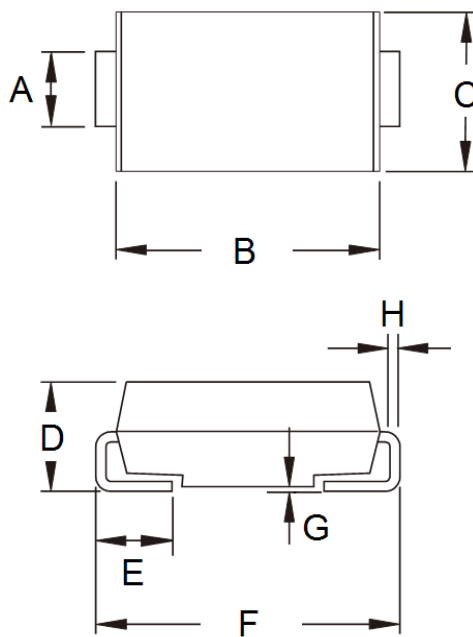


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

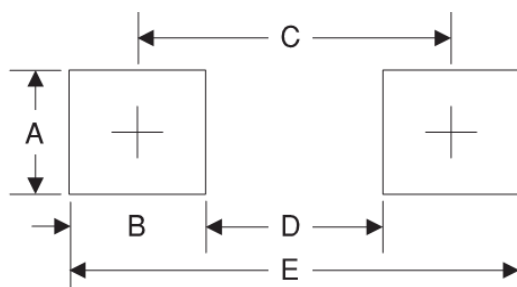


## PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 1.27      | 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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