

## 6A, 50V - 600V Glass Passivated High Efficient Rectifiers

### FEATURES

- Glass passivated chip junction
- High efficiency, Low VF
- High current capability
- High reliability
- 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



### MECHANICAL DATA

**Case:** R-6

Molding compound, UL flammability classification rating 94V-0

Part No. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

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

Meet JESD 201 class 2 whisker test

**Weight:** 1.65 g (approximately)

**R-6**

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER                                                                                       | SYMBOL             | HER<br>601G  | HER<br>602G | HER<br>603G | HER<br>604G | HER<br>605G | HER<br>606G | UNIT |
|-------------------------------------------------------------------------------------------------|--------------------|--------------|-------------|-------------|-------------|-------------|-------------|------|
| Maximum repetitive peak reverse voltage                                                         | V <sub>RRM</sub>   | 50           | 100         | 200         | 300         | 400         | 600         | V    |
| Maximum RMS voltage                                                                             | V <sub>RMS</sub>   | 35           | 70          | 140         | 210         | 280         | 420         | V    |
| Maximum DC blocking voltage                                                                     | V <sub>DC</sub>    | 50           | 100         | 200         | 300         | 400         | 600         | V    |
| Maximum average forward rectified current                                                       | I <sub>F(AV)</sub> | 6            |             |             |             |             |             | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load             | I <sub>FSM</sub>   | 150          |             |             |             |             |             | A    |
| Maximum instantaneous forward voltage (Note 1)<br>@ 6 A                                         | V <sub>F</sub>     | 1.0          |             |             |             | 1.3         | 1.7         | V    |
| Maximum reverse current @ rated V <sub>R</sub><br>T <sub>J</sub> =25°C<br>T <sub>J</sub> =125°C | I <sub>R</sub>     | 10<br>200    |             |             |             |             |             | μA   |
| Maximum reverse recovery time (Note 2)                                                          | t <sub>rr</sub>    | 50           |             |             |             |             | 75          | ns   |
| Typical junction capacitance (Note 2)                                                           | C <sub>J</sub>     | 80           |             |             |             |             | 65          | pF   |
| Typical thermal resistance                                                                      | R <sub>θJA</sub>   | 37           |             |             |             |             |             | °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.            | PART NO.<br>SUFFIX | PACKING CODE | PACKING CODE<br>SUFFIX (*) | PACKAGE | PACKING                |
|---------------------|--------------------|--------------|----------------------------|---------|------------------------|
| HER60xG<br>(Note 1) | H                  | A0           | G                          | R-6     | 700 / Ammo box         |
|                     |                    | R0           |                            | R-6     | 1,000 / 13" Paper reel |
|                     |                    | B0           |                            | R-6     | 400 / Bulk packing     |

Note 1: "x" defines voltage from 50V (HER601G) to 600V (HER606G)

\*: Optional available

**EXAMPLE**

| PREFERRED P/N | PART NO. | PART NO.<br>SUFFIX | PACKING CODE | PACKING CODE<br>SUFFIX | DESCRIPTION                          |
|---------------|----------|--------------------|--------------|------------------------|--------------------------------------|
| HER605GHA0G   | HER605G  | H                  | A0           | G                      | AEC-Q101 qualified<br>Green compound |

**RATINGS AND CHARACTERISTICS CURVES**

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

FIG.1 MAXIMUM FORWARD CURRENT  
DERATING CURVE

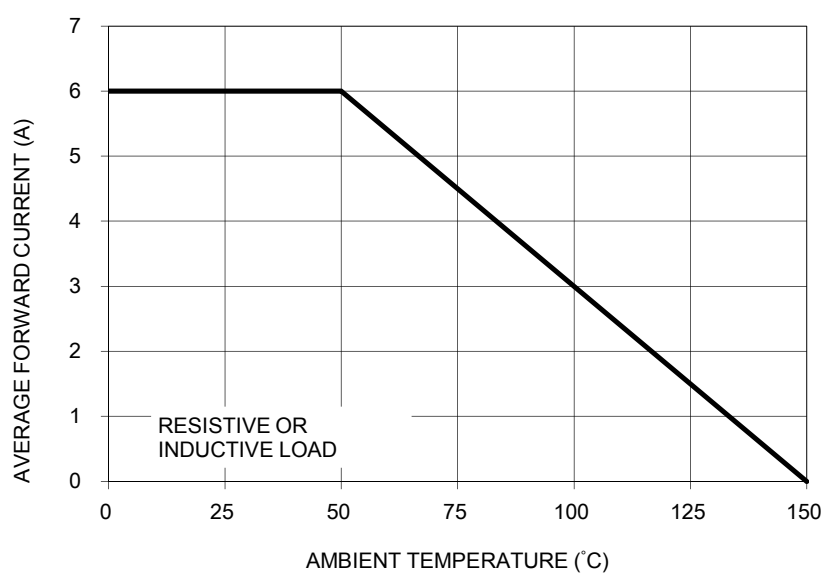


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

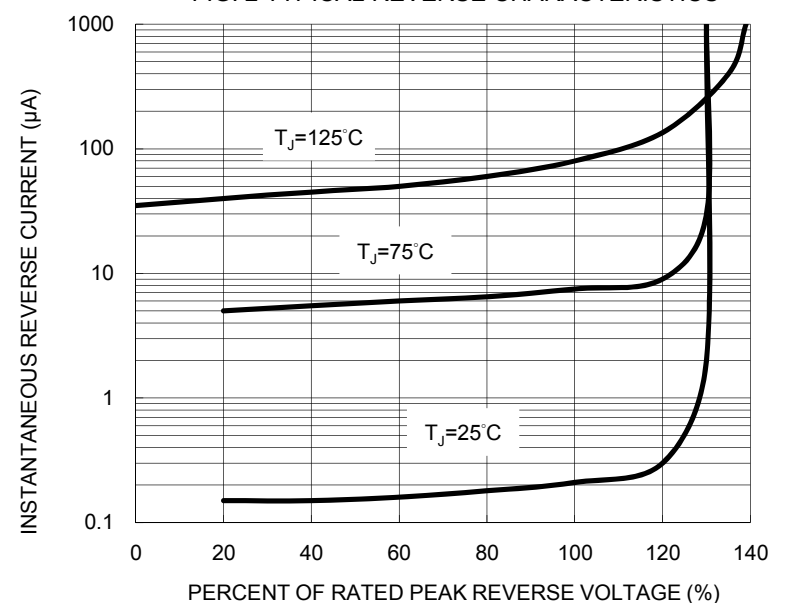


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD  
SURGE CURRENT

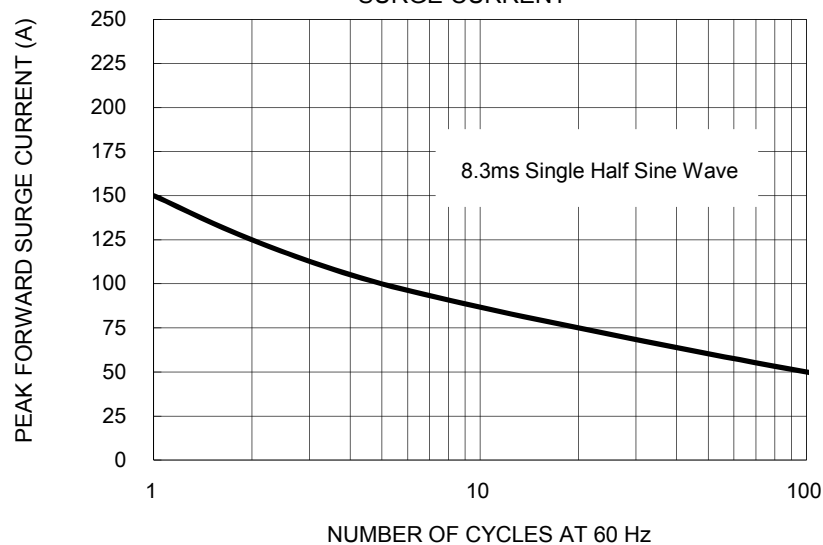


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

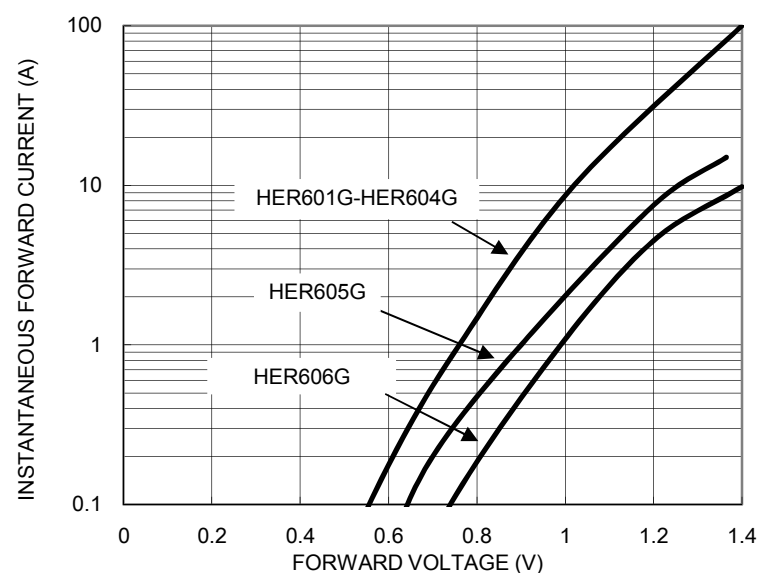


FIG. 5 TYPICAL JUNCTION CAPACITANCE

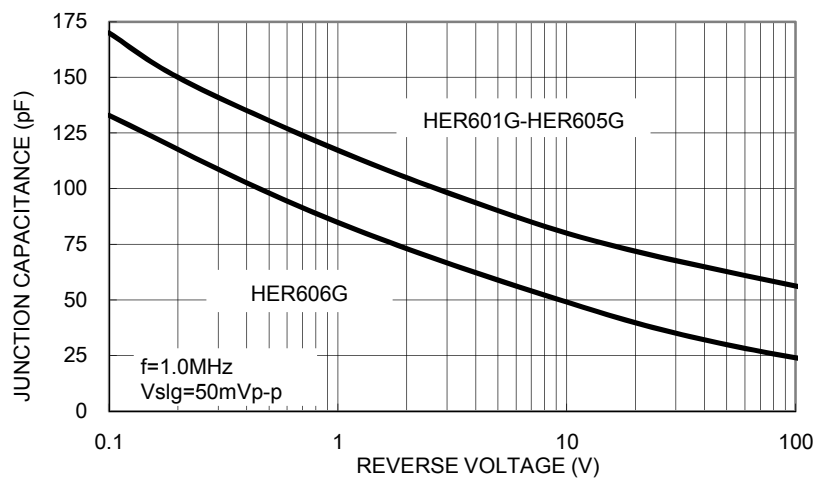
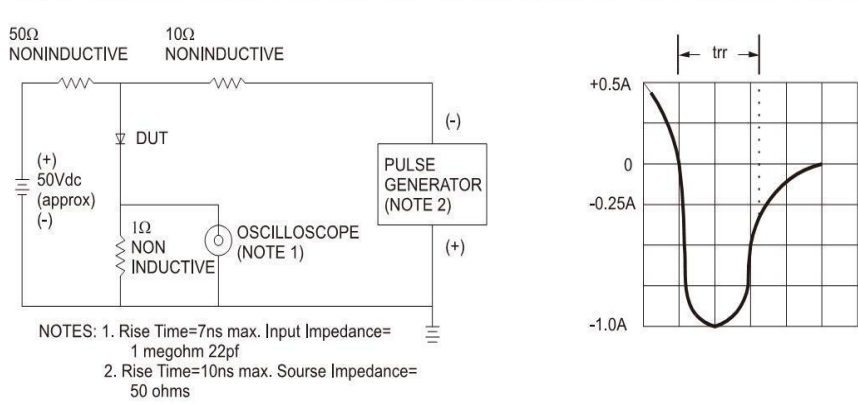
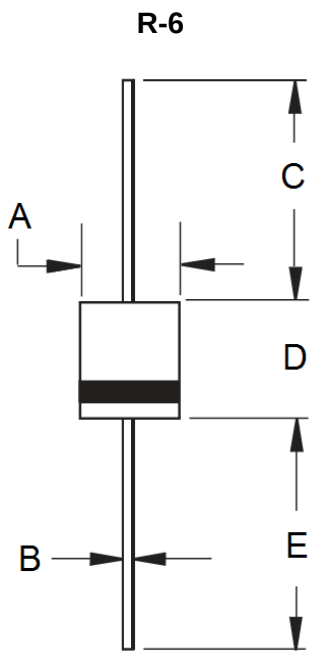


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 6.80      | 7.20 | 0.268       | 0.283 |
| B    | 1.20      | 1.30 | 0.047       | 0.051 |
| C    | 25.40     | -    | 1.000       | -     |
| D    | 8.60      | 9.10 | 0.339       | 0.358 |
| E    | 25.40     | -    | 1.000       | -     |

MARKING DIAGRAM



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

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### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

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