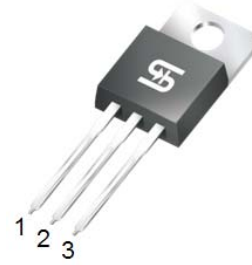


## 16A, 50V - 1000V Glass Passivated High Efficient Rectifiers

### FEATURES

- High efficiency, low VF
- High current capability
- High surge current capability
- Low power loss
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



**TO-220AB**



### MECHANICAL DATA

**Case:** TO-220AB

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)

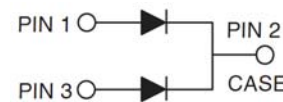
**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

**Polarity:** As marked

**Mounting torque:** 0.56 Nm max.

**Weight:** 1.82 g (approximately)



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted) |                    |              |           |           |           |           |           |           |           |      |    |
|--|--------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|----|
| PARAMETER  | SYMBOL             | HER 1601G    | HER 1602G | HER 1603G | HER 1604G | HER 1605G | HER 1606G | HER 1607G | HER 1608G | 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> | 16           |           |           |           |           |           |           |           | A    |    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load          | I <sub>FSM</sub>   | 125          |           |           |           |           |           |           |           | A    |    |
| Maximum instantaneous forward voltage (Note 1) @ 8 A   | V <sub>F</sub>     | 1.0          |           |           | 1.3       |           | 1.7       |           |           | V    |    |
| Maximum reverse current @ rated V <sub>R</sub>   | I <sub>R</sub>     | 10<br>400    |           |           |           |           |           |           |           | μA   |    |
| Maximum reverse recovery time (Note 2)   | t <sub>rr</sub>    | 50           |           |           |           |           | 80        |           |           |      | ns |
| Typical junction capacitance (Note 3)  | C <sub>J</sub>     | 80           |           |           |           |           | 50        |           |           |      | pF |
| Typical thermal resistance   | R <sub>θJC</sub>   | 1.5          |           |           |           |           |           |           |           | °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: 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 DC.

| ORDERING INFORMATION |                 |              |                         |          |           |
|----------------------|-----------------|--------------|-------------------------|----------|-----------|
| PART NO.             | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE  | PACKING   |
| HER160xG (Note 1)    | H               | C0           | G                       | TO-220AB | 50 / Tube |

Note 1: "x" defines voltage from 50V (HER1601G) to 1000V (HER1608G)

\*: Optional available

| EXAMPLE          |          |                 |              |                     |                                   |
|------------------|----------|-----------------|--------------|---------------------|-----------------------------------|
| EXAMPLE PART NO. | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                       |
| HER1601GHC0G     | HER1601G | H               | C0           | G                   | AEC-Q101 qualified Green compound |

**RATINGS AND CHARACTERISTICS CURVES**

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

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

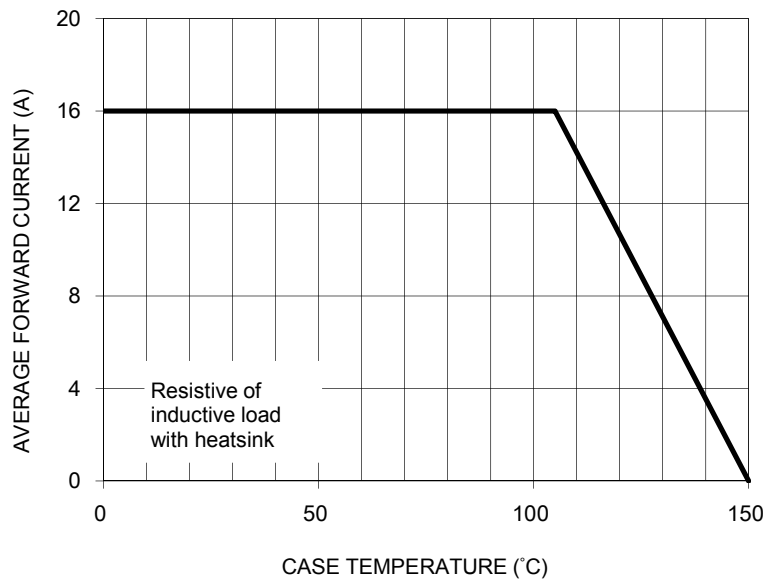


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

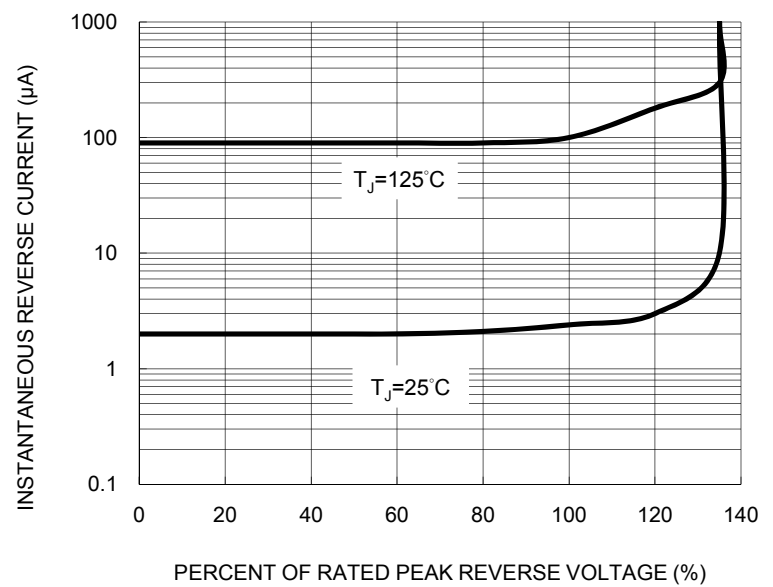


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

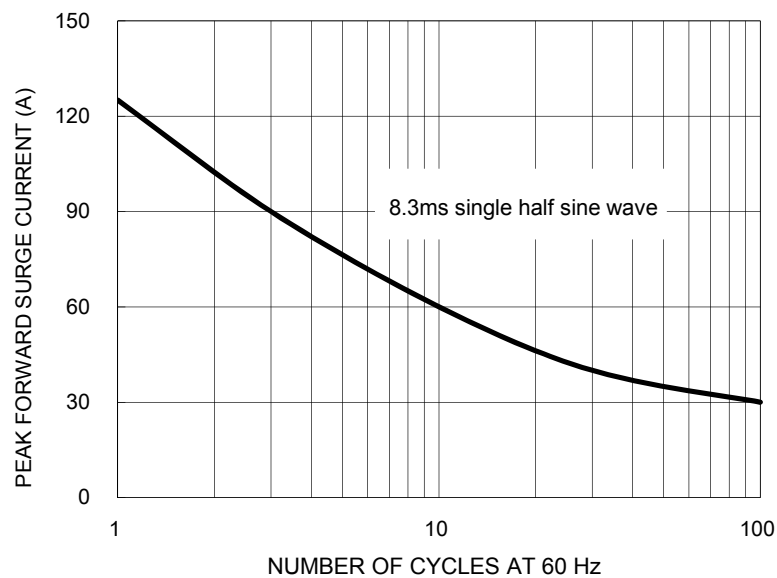


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

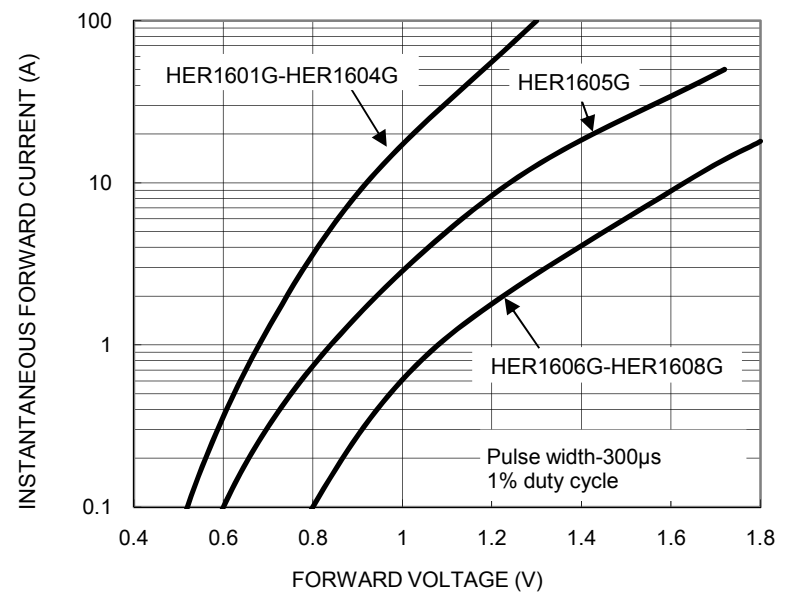


FIG. 5 TYPICAL JUNCTION CAPACITANCE

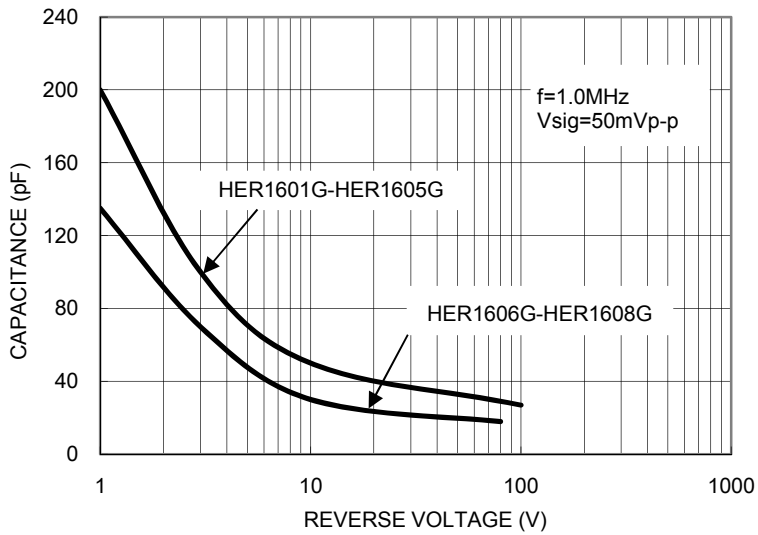
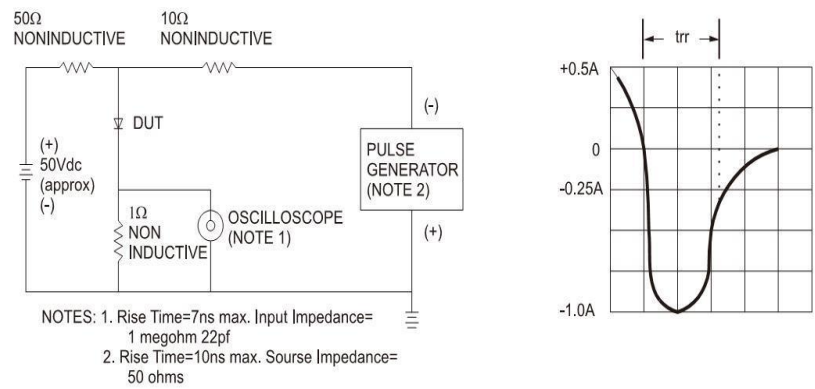
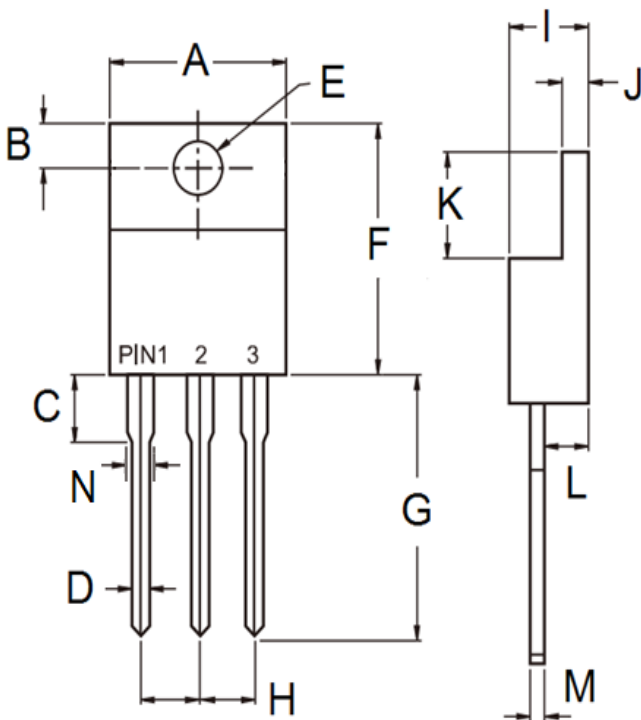


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

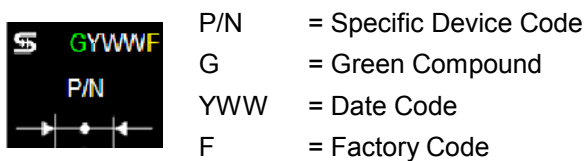


PACKAGE OUTLINE DIMENSIONS  
**TO-220AB**



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | -         | 10.50 | -           | 0.413 |
| B    | 2.62      | 3.44  | 0.103       | 0.135 |
| C    | 2.80      | 4.20  | 0.110       | 0.165 |
| D    | 0.68      | 0.94  | 0.027       | 0.037 |
| E    | 3.54      | 4.00  | 0.139       | 0.157 |
| F    | 14.60     | 16.00 | 0.575       | 0.630 |
| G    | 13.19     | 14.79 | 0.519       | 0.582 |
| H    | 2.41      | 2.67  | 0.095       | 0.105 |
| I    | 4.42      | 4.76  | 0.174       | 0.187 |
| J    | 1.14      | 1.40  | 0.045       | 0.055 |
| K    | 5.84      | 6.86  | 0.230       | 0.270 |
| L    | 2.20      | 2.80  | 0.087       | 0.110 |
| M    | 0.35      | 0.64  | 0.014       | 0.025 |
| N    | 1.14      | 1.77  | 0.045       | 0.070 |

MARKING DIAGRAM



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[HER1608G C0](#) [HER1601G C0](#)