

## 1A, 50V - 1000V Glass Passivated High Efficient Bridge Rectifiers

### FEATURES

- Ideal for automated placement
- Reliable low cost construction utilizing molded plastic technique
- High surge current capability
- UL Recognized File # E-326854
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



DBLS

### MECHANICAL DATA

**Case:** Molded plastic body

Molding compound, UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

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

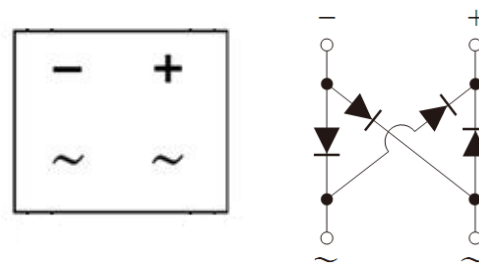
Packing code with suffix "G" means green compound (halogen-free)

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

Meet JESD 201 class 2 whisker test

**Polarity:** Polarity as marked on the body

**Weight:** 0.36 g (approximately)



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)    |                                      |               |               |               |               |               |               |               |                  |
|-------------------------------------------------------------------------------------------------|--------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------|
| PARAMETER                                                                                       | SYMBOL                               | HDBLS<br>101G | HDBLS<br>102G | HDBLS<br>103G | HDBLS<br>104G | HDBLS<br>105G | HDBLS<br>106G | HDBLS<br>107G | UNIT             |
| Maximum repetitive peak reverse voltage                                                         | V <sub>RRM</sub>                     | 50            | 100           | 200           | 400           | 600           | 800           | 1000          | V                |
| Maximum RMS voltage                                                                             | V <sub>RMS</sub>                     | 35            | 70            | 140           | 280           | 420           | 560           | 700           | V                |
| Maximum DC blocking voltage                                                                     | V <sub>DC</sub>                      | 50            | 100           | 200           | 400           | 600           | 800           | 1000          | V                |
| Maximum average forward rectified current                                                       | I <sub>F(AV)</sub>                   | 1             |               |               |               |               |               |               | A                |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load             | I <sub>FSM</sub>                     | 50            |               |               |               |               |               |               | A                |
| Rating for fusing (t<8.3ms)                                                                     | I <sup>2</sup> t                     | 10.3          |               |               |               |               |               |               | A <sup>2</sup> s |
| Maximum instantaneous forward voltage (Note 1)<br>I <sub>F</sub> = 1 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>                       | 5<br>500      |               |               |               |               |               |               | μA               |
| Maximum reverse recovery time (Note 2)                                                          | t <sub>rr</sub>                      | 50            |               |               |               | 75            |               |               | ns               |
| Typical thermal resistance                                                                      | R <sub>θJL</sub><br>R <sub>θJA</sub> | 15<br>40      |               |               |               |               |               |               | °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

| ORDERING INFORMATION  |                 |              |                         |         |                        |
|-----------------------|-----------------|--------------|-------------------------|---------|------------------------|
| PART NO.              | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE | PACKING                |
| HDBLS10xG<br>(Note 1) | H               | C1           | G                       | DBLS    | 50 / TUBE              |
|                       |                 | RD           |                         |         | 1,500 / 13" Paper reel |

Note 1: "x" defines voltage from 50V (HDBLS101G) to 1000V (HDBLS107G)

\*: Optional available

| EXAMPLE       |           |                 |              |                     |                                      |
|---------------|-----------|-----------------|--------------|---------------------|--------------------------------------|
| PREFERRED P/N | PART NO.  | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
| HDBLS107GHRDG | HDBLS107G | H               | RD           | G                   | AEC-Q101 qualified<br>Green compound |

## RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 FORWARD CURRENT DERATING CURVE

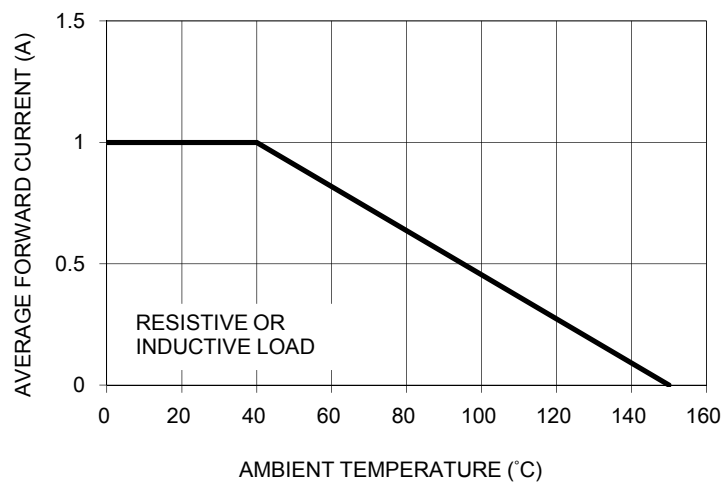


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

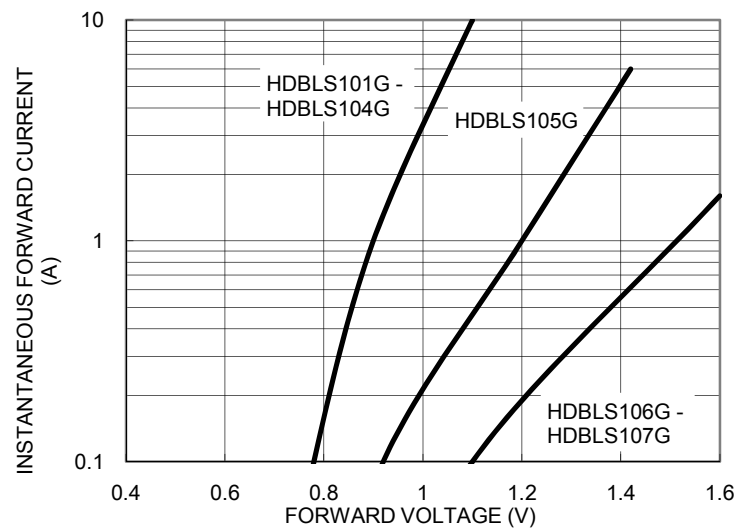


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

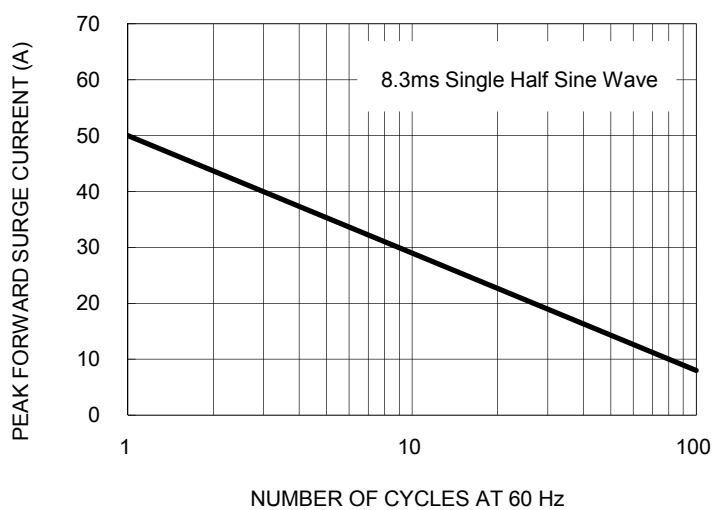


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

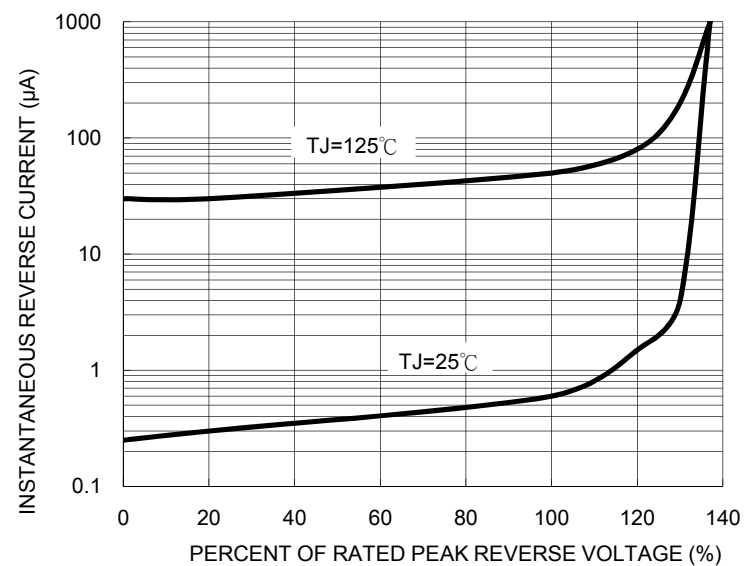


FIG. 5 TYPICAL JUNCTION CAPACITANCE

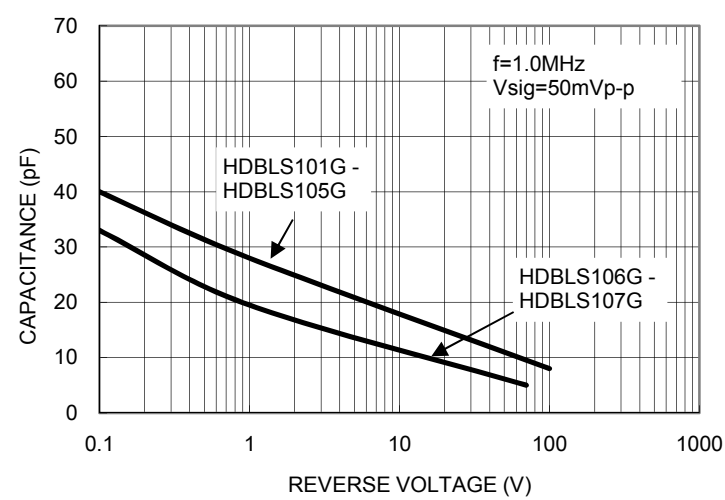
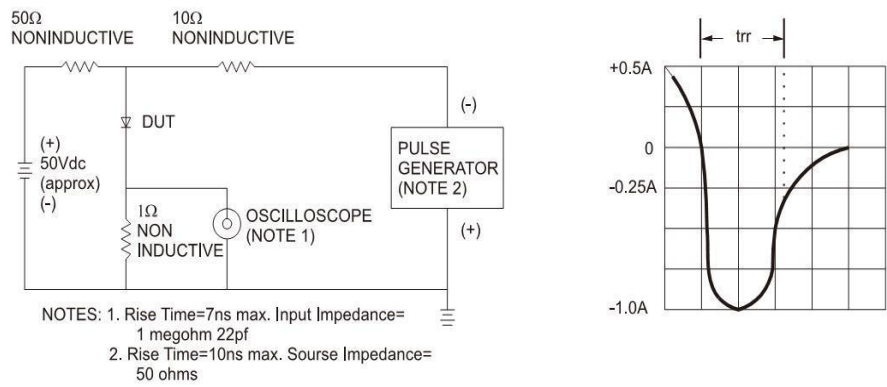
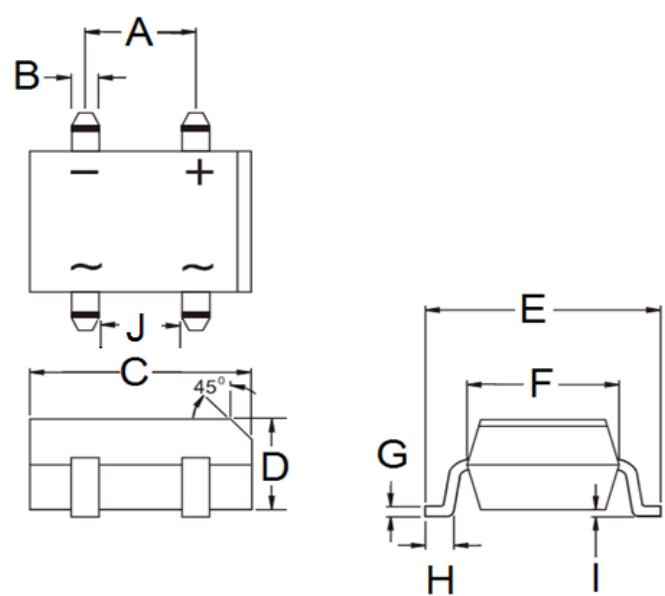


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

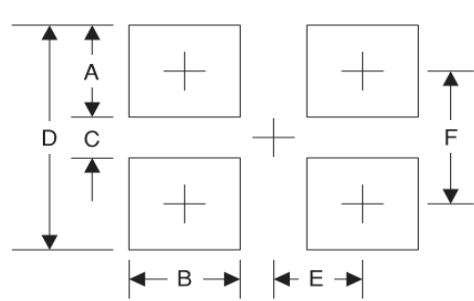


PACKAGE OUTLINE DIMENSIONS  
DBLS



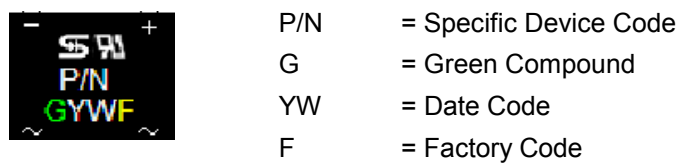
| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | 5.00      | 5.20  | 0.197       | 0.205 |
| B    | 1.02      | 1.20  | 0.040       | 0.047 |
| C    | 8.13      | 8.51  | 0.320       | 0.335 |
| D    | 2.40      | 2.60  | 0.094       | 0.102 |
| E    | 9.80      | 10.30 | 0.386       | 0.406 |
| F    | 6.20      | 6.50  | 0.244       | 0.256 |
| G    | 0.22      | 0.33  | 0.009       | 0.013 |
| H    | 1.02      | 1.53  | 0.040       | 0.060 |
| I    | 0.076     | 0.33  | 0.003       | 0.013 |
| J    | 3.90      | 4.10  | 0.154       | 0.161 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 2.3       | 0.091       |
| B      | 1.3       | 0.051       |
| C      | 6.9       | 0.272       |
| D      | 11.5      | 0.453       |
| E      | 2.6       | 0.102       |
| F      | 9.2       | 0.362       |

MARKING DIAGRAM



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