

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

### FEATURES

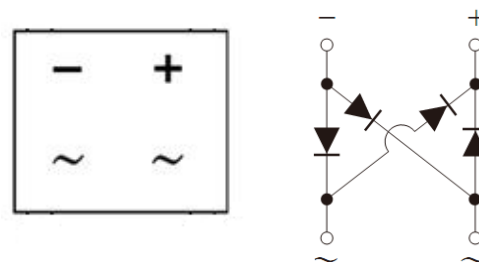
- Ideal for automated placement
- Reliable low cost construction utilizing molded plastic technique
- High surge current capability
- UL Recognized File # E-326854
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



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 101G   | HDBLS 102G | HDBLS 103G | HDBLS 104G | HDBLS 105G | HDBLS 106G | HDBLS 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 Green compound |

**RATINGS AND CHARACTERISTICS CURVES**

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

FIG. 1 FORWARD CURRENT DERATING CURVE

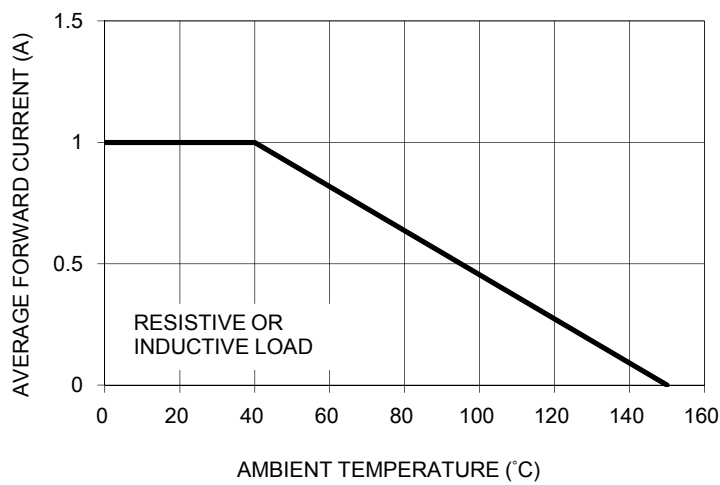


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

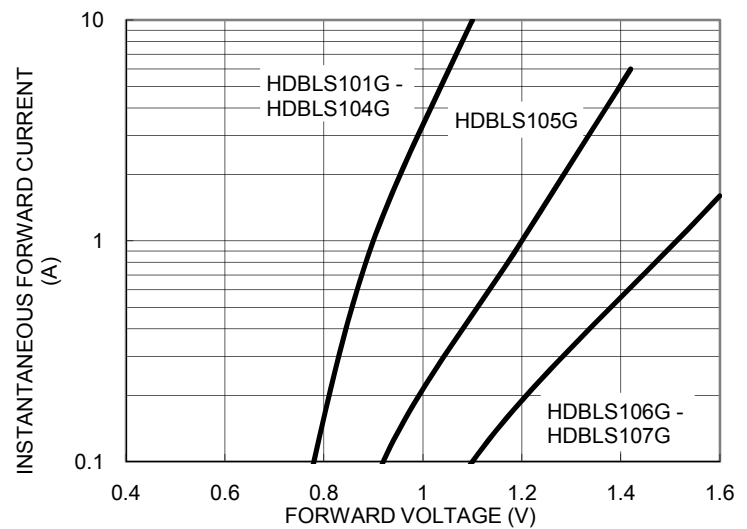


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

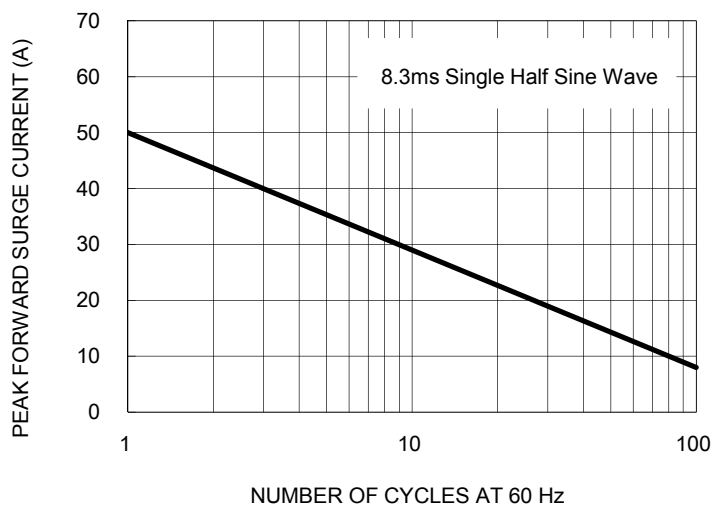


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

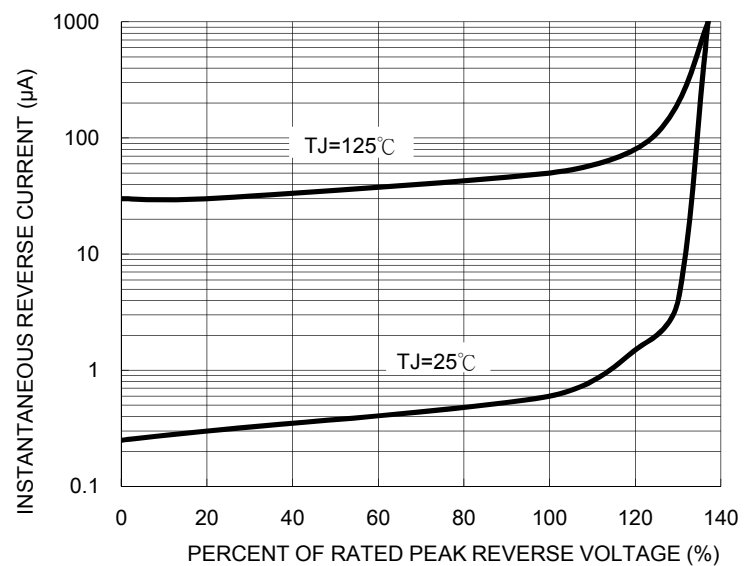


FIG. 5 TYPICAL JUNCTION CAPACITANCE

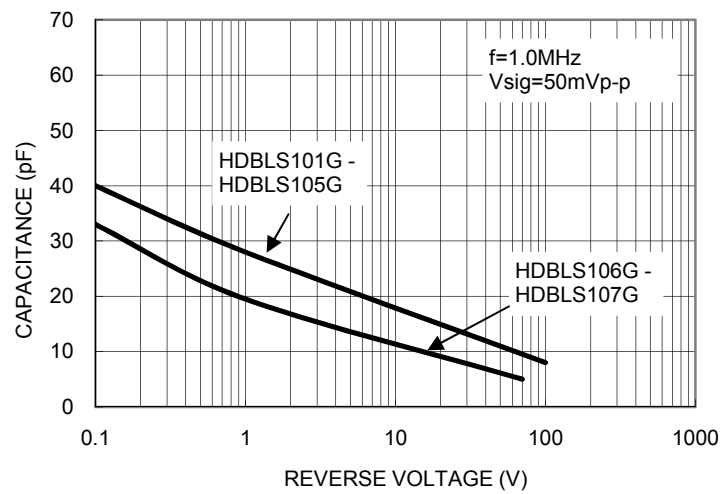
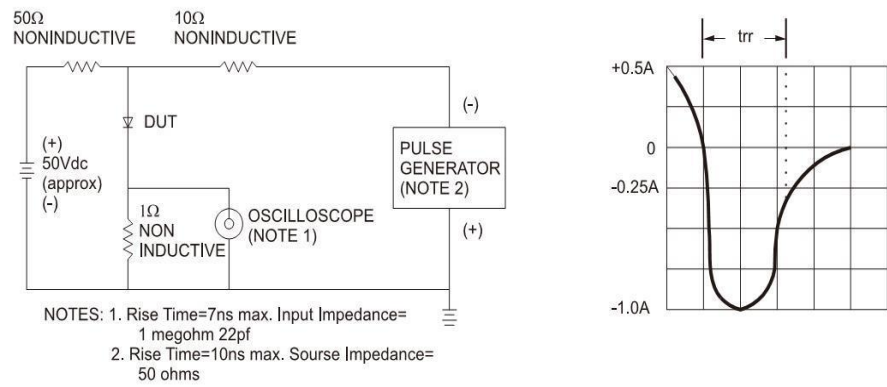
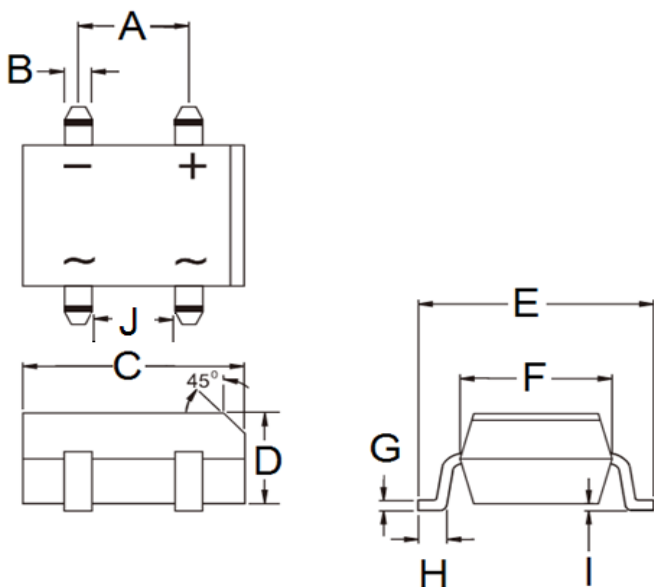


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



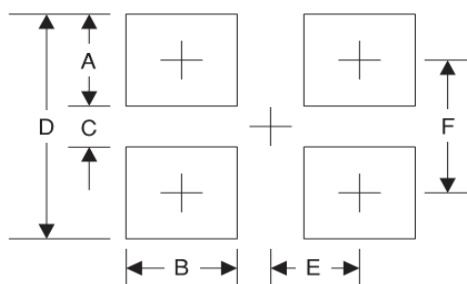
PACKAGE OUTLINE DIMENSIONS

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



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

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