



# THE DATASHEET OF DBL155G



## 1.5A, 50V - 1400V Standard Bridge Rectifier

### FEATURES

- AEC-Q101 qualified available
- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- High surge current capability
- UL Recognized File # E-326854
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

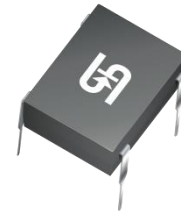
### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application

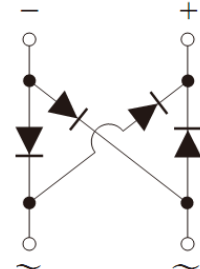
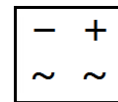
### MECHANICAL DATA

- Case: DBL
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.360g (approximately)

| KEY PARAMETERS |           |      |
|----------------|-----------|------|
| PARAMETER      | VALUE     | UNIT |
| $I_F$          | 1.5       | A    |
| $V_{RRM}$      | 50 - 1400 | V    |
| $I_{FSM}$      | 50        | A    |
| $T_{J\ MAX}$   | 150       | °C   |
| Package        | DBL       |      |
| Configuration  | Quad      |      |



DBL



| ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)        |              |              |          |          |          |          |          |          |          |          |                  |
|--|--------------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|------------------|
| PARAMETER  | SYMBOL       | DBL 151G     | DBL 152G | DBL 153G | DBL 154G | DBL 155G | DBL 156G | DBL 157G | DBL 158G | DBL 159G | UNIT             |
| Marking code on the device   |              | DBL 151G     | DBL 152G | DBL 153G | DBL 154G | DBL 155G | DBL 156G | DBL 157G | DBL 158G | DBL 159G |                  |
| Repetitive peak reverse voltage  | $V_{RRM}$    | 50           | 100      | 200      | 400      | 600      | 800      | 1000     | 1200     | 1400     | V                |
| Reverse voltage, total rms value   | $V_{R(RMS)}$ | 35           | 70       | 140      | 280      | 420      | 560      | 700      | 840      | 980      | V                |
| Forward current  | $I_F$        | 1.5          |          |          |          |          |          |          |          |          | A                |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$    | 50           |          |          |          |          |          |          |          |          | A                |
| Rating for fusing ( $t < 8.3\text{ms}$ )   | $I^2t$       | 10.3         |          |          |          |          |          |          |          |          | A <sup>2</sup> s |
| Junction temperature   | $T_J$        | - 55 to +150 |          |          |          |          |          |          |          |          | °C               |
| Storage temperature  | $T_{STG}$    | - 55 to +150 |          |          |          |          |          |          |          |          | °C               |

| <b>THERMAL PERFORMANCE</b>             |                 |            |             |
|--|-----------------|------------|-------------|
| <b>PARAMETER</b>                       | <b>SYMBOL</b>   | <b>TYP</b> | <b>UNIT</b> |
| Junction-to-lead thermal resistance    | $R_{\theta JL}$ | 15         | °C/W        |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 40         | °C/W        |

| <b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |   |   |               |            |            |               |
|---|---|---|---------------|------------|------------|---------------|
| <b>PARAMETER</b>  |   | <b>CONDITIONS</b>                           | <b>SYMBOL</b> | <b>TYP</b> | <b>MAX</b> | <b>UNIT</b>   |
| Forward voltage per diode <sup>(1)</sup>  | DBL151G<br>DBL152G<br>DBL153G<br>DBL154G<br>DBL155G<br>DBL156G<br>DBL157G | $I_F = 1.5\text{A}, T_J = 25^\circ\text{C}$ | $V_F$         | -          | 1.10       | V             |
|   | DBL158G<br>DBL159G  |   |               | -          | 1.25       | V             |
| Reverse current @ rated $V_R$ per diode <sup>(2)</sup>                              |   | $T_J = 25^\circ\text{C}$                    | $I_R$         | -          | 2          | $\mu\text{A}$ |
|   |   | $T_J = 125^\circ\text{C}$                   |               | -          | 500        | $\mu\text{A}$ |
| Junction capacitance per diode  |   | 1MHz, $V_R = 4.0\text{V}$                   | $C_J$         | 25         | -          | pF            |

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

| <b>ORDERING INFORMATION</b>            |                |                |
|--|----------------|----------------|
| <b>ORDERING CODE</b> <sup>(1)(2)</sup> | <b>PACKAGE</b> | <b>PACKING</b> |
| DBL15xG                                | DBL            | 50 / Tube      |
| DBL15xGH                               | DBL            | 50 / Tube      |

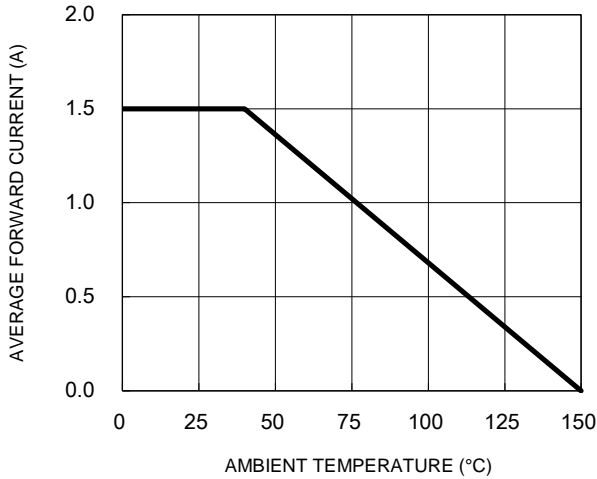
**Notes:**

1. "x" defines voltage from 50V(DBL151G) to 1400V(DBL159G)
2. "H" means AEC-Q101 qualified

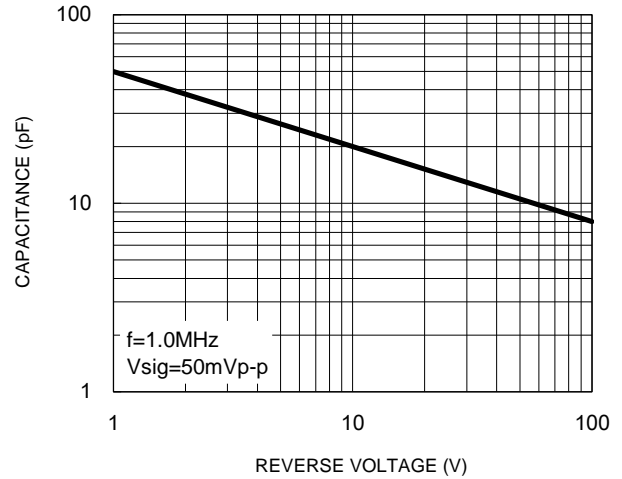
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

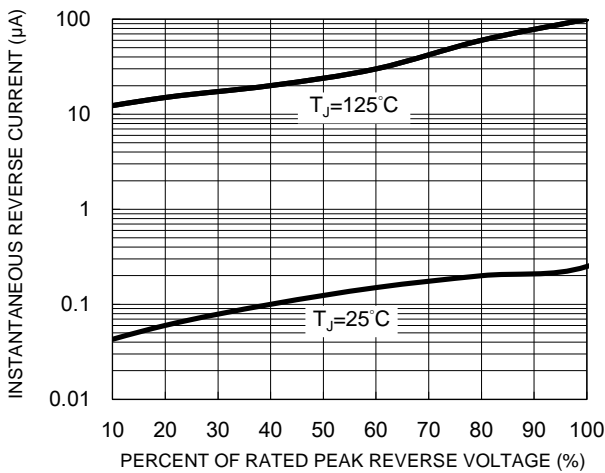
**Fig.1 Forward Current Derating Curve**



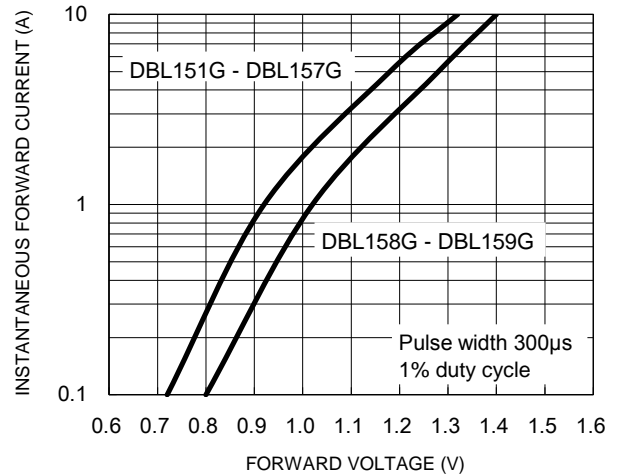
**Fig.2 Typical Junction Capacitance**



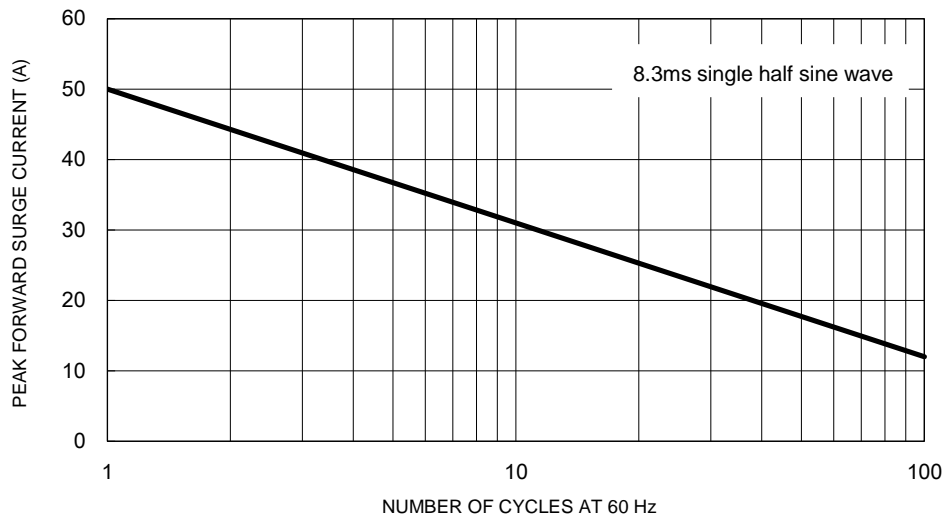
**Fig.3 Typical Reverse Characteristics**



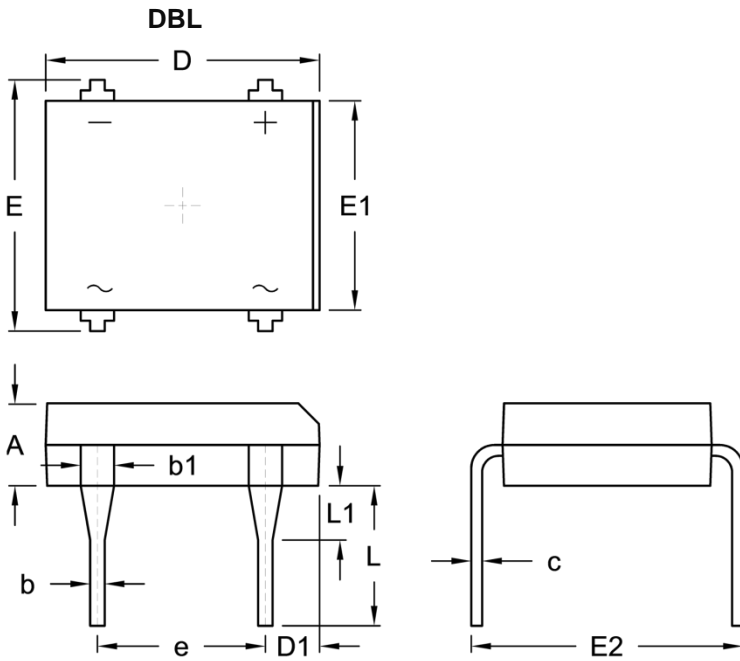
**Fig.4 Typical Forward Characteristics**



**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**PACKAGE OUTLINE DIMENSIONS**



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min.      | Max. | Min.        | Max.  |
| A    | 2.40      | 2.60 | 0.094       | 0.102 |
| b    | 0.46      | 0.58 | 0.018       | 0.023 |
| b1   | 0.89      | 1.14 | 0.035       | 0.045 |
| c    | 0.22      | 0.33 | 0.009       | 0.013 |
| D    | 8.12      | 8.51 | 0.320       | 0.335 |
| D1   | 1.39      | 1.90 | 0.055       | 0.075 |
| e    | 5.00      | 5.20 | 0.197       | 0.205 |
| E    | 7.24      | 8.00 | 0.285       | 0.315 |
| E1   | 6.20      | 6.50 | 0.244       | 0.256 |
| E2   | 7.60      | 8.90 | 0.299       | 0.350 |
| L    | 3.81      | 4.69 | 0.150       | 0.185 |
| L1   | 1.27      | 2.03 | 0.050       | 0.080 |

**MARKING DIAGRAM**



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

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