

## Glass Passivated Bridge Rectifier

### FEATURES

- Ideal for printed circuit board
- High case dielectric strength
- High surge current capability
- UL Recognized File # E-326243
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

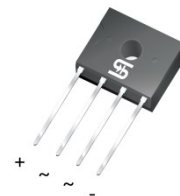
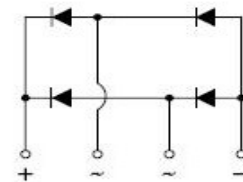
### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

### MECHANICAL DATA

- Case: D3K
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal : Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight: 1.24 g (approximately)
- Mounting Torque: 0.8 N.M max.

| KEY PARAMETERS |            |      |
|----------------|------------|------|
| PARAMETER      | VALUE      | UNIT |
| $V_{RRM}$      | 600 - 1000 | V    |
| $I_{FSM}$      | 90         | A    |
| $T_{J\ MAX}$   | 150        | °C   |
| Package        | D3K        |      |
| Configuration  | Quad       |      |


**D3K**


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

| PARAMETER   | SYMBOL                                      | UR3KB60     | UR3KB80 | UR3KB100 | UNIT                 |
|---|---|-------------|---------|----------|----------------------|
| Marking code on the device  |   | UR3KB60     | UR3KB80 | UR3KB100 |                      |
| Repetitive peak reverse voltage   | $V_{RRM}$                                   | 600         | 800     | 1000     | V                    |
| Reverse voltage, total rms value  | $V_{R(RMS)}$                                | 420         | 560     | 700      | V                    |
| Maximum DC blocking voltage   | $V_{DC}$                                    | 600         | 800     | 1000     |                      |
| Maximum average forward current<br>60Hz sine wave resistance load                   | Without heat sink<br>$T_A=29^\circ\text{C}$ | 1.2         |         |          | A                    |
|   | With heat sink<br>$T_C=140^\circ\text{C}$   | 3.0         |         |          |                      |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$                                   | 90          |         |          | A                    |
| $I^2t$ value (of a surge on-state current) <sup>(1)</sup>                           | $I^2t$                                      | 35          |         |          | $\text{A}^2\text{s}$ |
| Junction temperature  | $T_J$                                       | -55 to +150 |         |          | °C                   |
| Storage temperature   | $T_{STG}$                                   | -55 to +150 |         |          | °C                   |

#### Note:

1. Pulse test with PW=8.3 ms

| <b>THERMAL PERFORMANCE</b>             |                 |              |             |
|--|-----------------|--------------|-------------|
| <b>PARAMETER</b>                       | <b>SYMBOL</b>   | <b>LIMIT</b> | <b>UNIT</b> |
| Junction-to-lead thermal resistance    | $R_{\theta JL}$ | 5.5          | °C/W        |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 13.7         | °C/W        |
| Junction-to-case thermal resistance    | $R_{\theta JC}$ | 5.2          | °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 <sup>(1)</sup>  | $I_F = 1.5 \text{ A}, T_J = 25^\circ\text{C}$ | $V_F$         | -          | 1.0        | V             |
| Reverse current @ rated $V_R$ <sup>(2)</sup>  | $T_J = 25^\circ\text{C}$                      | $I_R$         | -          | 10         | $\mu\text{A}$ |

**Notes:**

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

| <b>ORDERING INFORMATION</b> |                     |                            |                |                |
|-----------------------------|---------------------|----------------------------|----------------|----------------|
| <b>PART NO.</b>             | <b>PACKING CODE</b> | <b>PACKING CODE SUFFIX</b> | <b>PACKAGE</b> | <b>PACKING</b> |
| UR3KBx0<br>(Note 1,2)       | C2                  | G                          | D3K            | 1,500 / BOX    |

**Notes:**

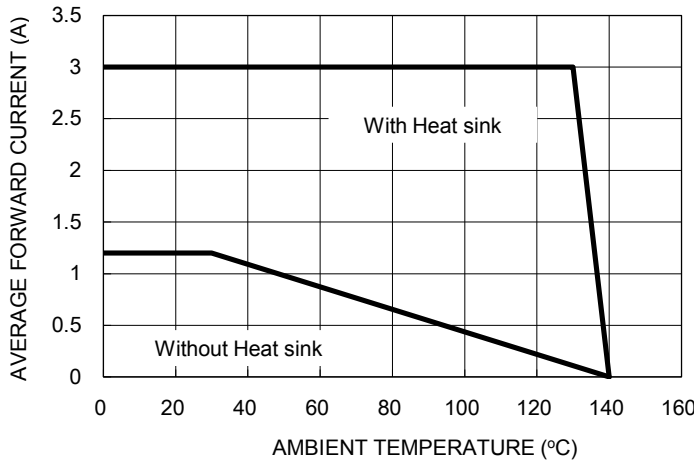
1. "x" defines voltage from 600V (UR3KB60) to 1000V (UR3KB100)
2. Whole series with green compound

| <b>EXAMPLE</b>       |                 |                     |                            |                    |
|----------------------|-----------------|---------------------|----------------------------|--------------------|
| <b>PREFERRED P/N</b> | <b>PART NO.</b> | <b>PACKING CODE</b> | <b>PACKING CODE SUFFIX</b> | <b>DESCRIPTION</b> |
| UR3KB60 C2G          | UR3KB60         | C2                  | G                          | Green compound     |

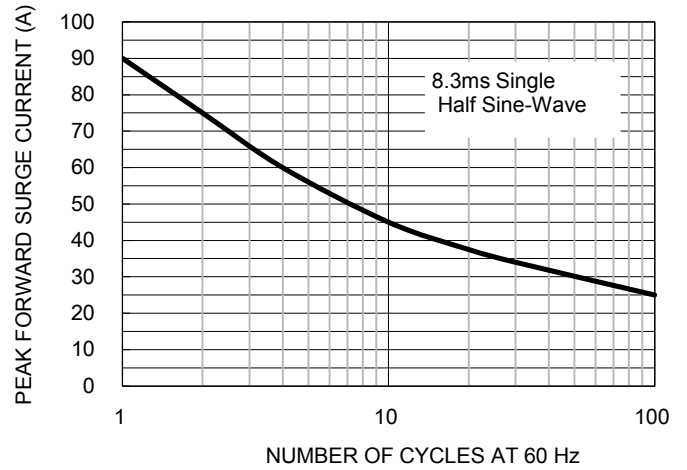
**RATINGS AND CHARACTERISTICS CURVES**

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

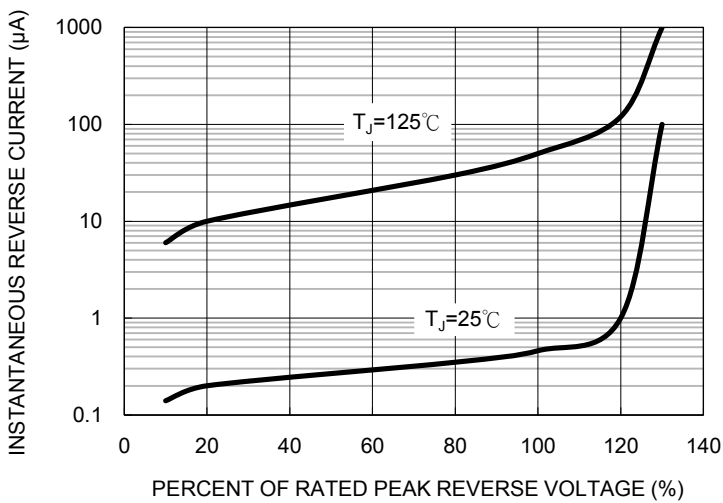
**Fig1. Maximum Derating Curve For Output current**



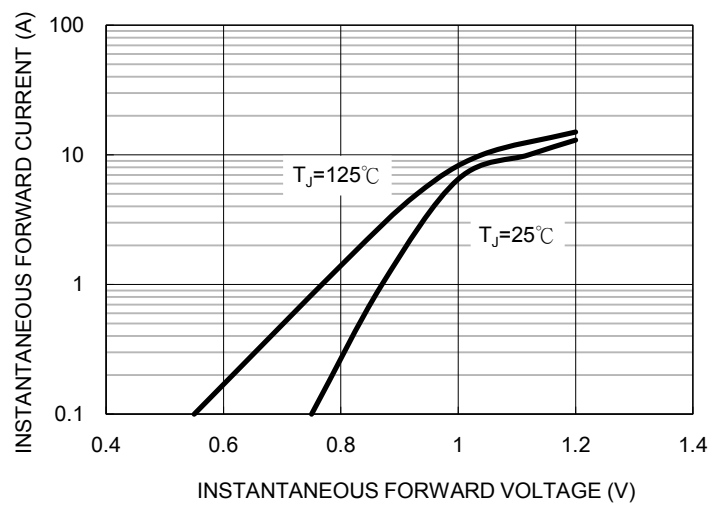
**Fig2. Maximum Forward Surge Current**



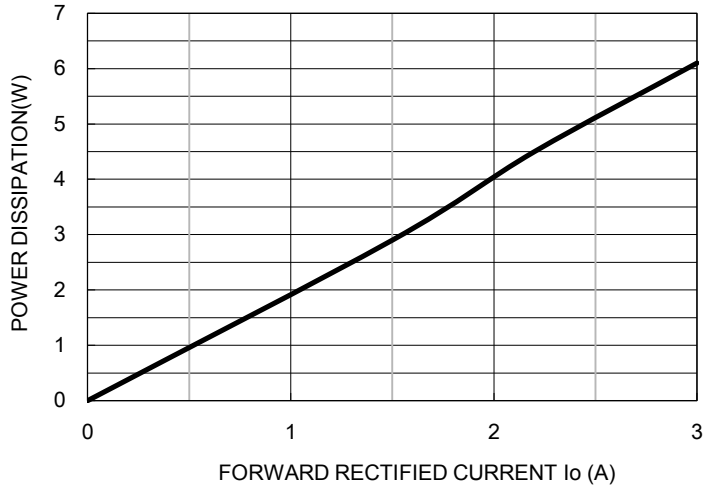
**Fig3. Typical Reverse Characteristics**



**Fig4. Typical Forward Characteristics**

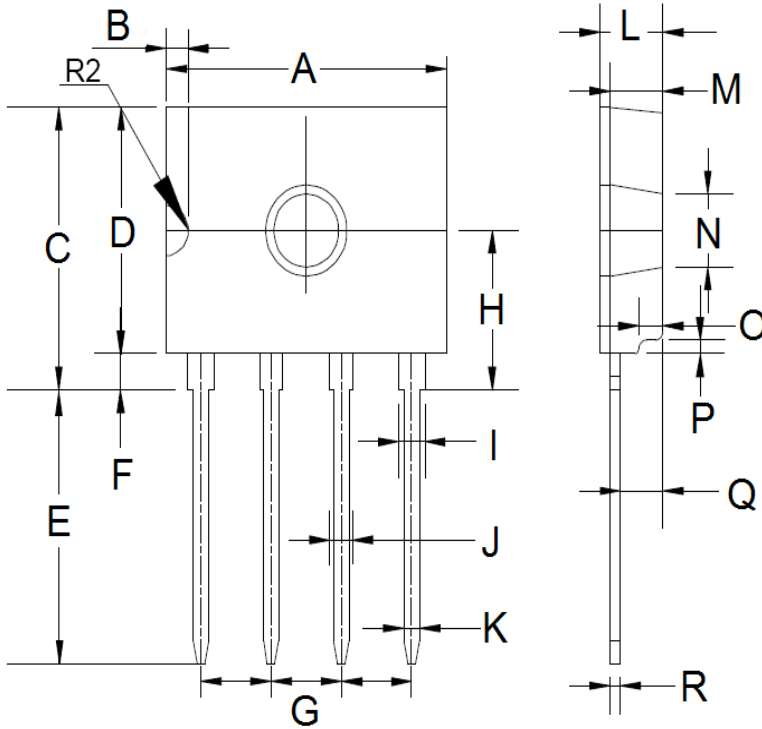


**Fig5. Forward Power Dissipation**



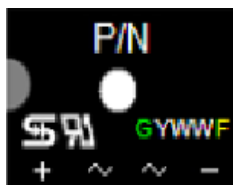
**PACKAGE OUTLINE DIMENSIONS**

D3K



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | 13.50     | 14.10 | 0.531       | 0.555 |
| B    | 0.70      | 1.40  | 0.028       | 0.055 |
| C    | 11.70     | 12.30 | 0.461       | 0.484 |
| D    | 10.50     | 11.10 | 0.413       | 0.437 |
| E    | 11.70     | 12.30 | 0.461       | 0.484 |
| F    | 1.10      | 1.40  | 0.043       | 0.055 |
| G    | 3.51      | 4.11  | 0.138       | 0.162 |
| H    | 6.70      | 7.30  | 0.264       | 0.287 |
| I    | 1.10      | 1.50  | 0.043       | 0.059 |
| J    | 1.05      | 1.25  | 0.041       | 0.049 |
| K    | 0.66      | 0.86  | 0.026       | 0.034 |
| L    | 2.90      | 3.30  | 0.114       | 0.130 |
| M    | 2.40      | 2.80  | 0.094       | 0.110 |
| N    | 3.10      | 3.40  | 0.122       | 0.134 |
| O    | 1.00      | 1.40  | 0.039       | 0.055 |
| P    | 0.40      | 0.80  | 0.016       | 0.031 |
| Q    | 1.80      | 2.40  | 0.071       | 0.094 |
| R    | 0.40      | 0.60  | 0.016       | 0.024 |

**MARKING DIAGRAM**



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

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