

## 8A, 600V - 1000V 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

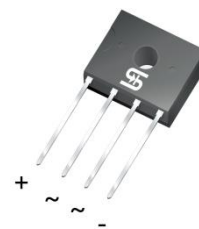
### APPLICATIONS

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

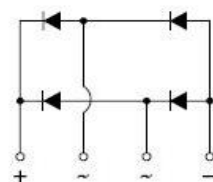
### MECHANICAL DATA

- 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
- Mounting torque: 0.8 Nm max.
- Polarity: As marked
- Weight: 1.24 g (approximately)

| KEY PARAMETERS |            |      |
|----------------|------------|------|
| PARAMETER      | VALUE      | UNIT |
| $I_{F(AV)}$    | 8          | A    |
| $V_{RRM}$      | 600 - 1000 | V    |
| $I_{FSM}$      | 170        | 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       | UR8KB60     | UR8KB80 | UR8KB100 | UNIT             |
| Marking code on the device                                                                    |              | UR8KB60     | UR8KB80 | UR8KB100 |                  |
| Repetitive peak reverse voltage                                                               | $V_{RRM}$    | 600         | 800     | 1000     | V                |
| Reverse voltage, total rms value                                                              | $V_{R(RMS)}$ | 420         | 560     | 700      | V                |
| Forward current                                                                               | $I_{F(AV)}$  | 8           |         |          | A                |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$    | 170         |         |          | A                |
| $I^2t$ value (of a surge on-state current)                                                    | $I^2t$       | 115         |         |          | A <sup>2</sup> s |
| Junction temperature                                                                          | $T_J$        | -55 to +150 |         |          | °C               |
| Storage temperature                                                                           | $T_{STG}$    | -55 to +150 |         |          | °C               |

**THERMAL PERFORMANCE**

| PARAMETER                              | SYMBOL          | LIMIT | UNIT |
|----------------------------------------|-----------------|-------|------|
| Junction-to-lead thermal resistance    | $R_{\theta JL}$ | 13    | °C/W |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 25    | °C/W |
| Junction-to-case thermal resistance    | $R_{\theta JC}$ | 14    | °C/W |

**Thermal Performance Note:** Mounted on Heat sink Size of 4"x6"x0.25" Al-Plate

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

| PARAMETER                                              | CONDITIONS                                 | SYMBOL | TYP  | MAX  | UNIT |
|--------------------------------------------------------|--------------------------------------------|--------|------|------|------|
| Forward voltage per diode <sup>(1)</sup>               | $I_F = 4\text{A}, T_J = 25^\circ\text{C}$  | $V_F$  | 0.93 | 1.10 | V    |
|                                                        | $I_F = 8\text{A}, T_J = 25^\circ\text{C}$  |        | 1.00 | 1.20 | V    |
|                                                        | $I_F = 4\text{A}, T_J = 125^\circ\text{C}$ |        | 0.81 | 1.00 | V    |
|                                                        | $I_F = 8\text{A}, T_J = 125^\circ\text{C}$ |        | 0.90 | 1.10 | V    |
| Reverse current @ rated $V_R$ per diode <sup>(2)</sup> | $T_J = 25^\circ\text{C}$                   | $I_R$  | -    | 10   | μA   |
|                                                        | $T_J = 125^\circ\text{C}$                  |        | -    | 0.5  | mA   |
| Junction capacitance                                   | 1 MHz, $V_R = 4\text{V}$                   | $C_J$  | 63   | -    | pF   |

**Notes:**

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

**ORDERING INFORMATION**

| PART NO.                | PACKING CODE | PACKING CODE SUFFIX | PACKAGE | PACKING     |
|-------------------------|--------------|---------------------|---------|-------------|
| UR8KBxxx<br>(Note 1, 2) | C2           | G                   | D3K     | 1,500 / BOX |

**Notes:**

1. "xxx" defines voltage from 600V (UR8KB60) to 1000V (UR8KB100)
2. Whole series with green compound(halogen-free)

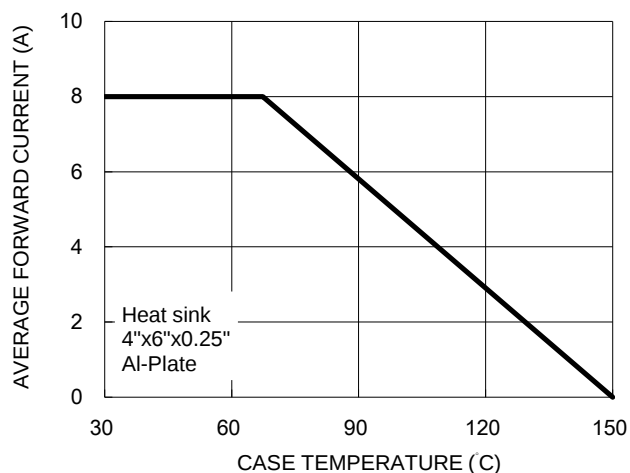
**EXAMPLE**

| EXAMPLE P/N  | PART NO. | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION    |
|--------------|----------|--------------|---------------------|----------------|
| UR8KB100 C2G | UR8KB100 | C2           | G                   | Green compound |

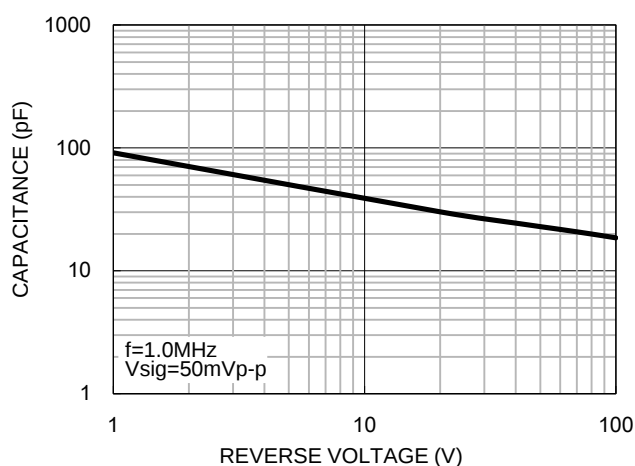
## CHARACTERISTICS CURVES

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

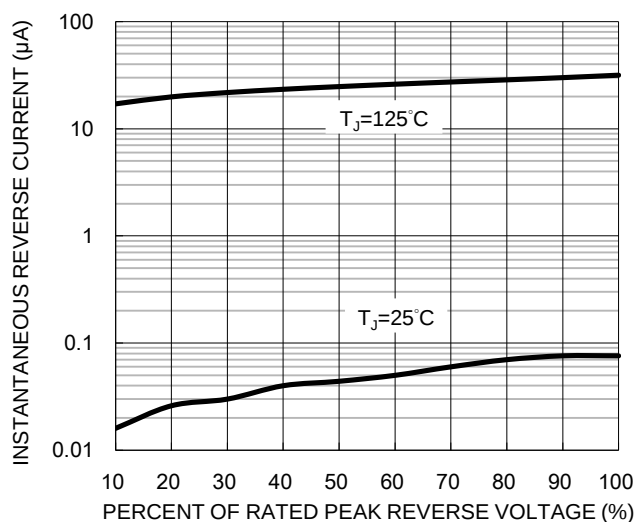
**Fig.1 Forward Current Derating Curve**



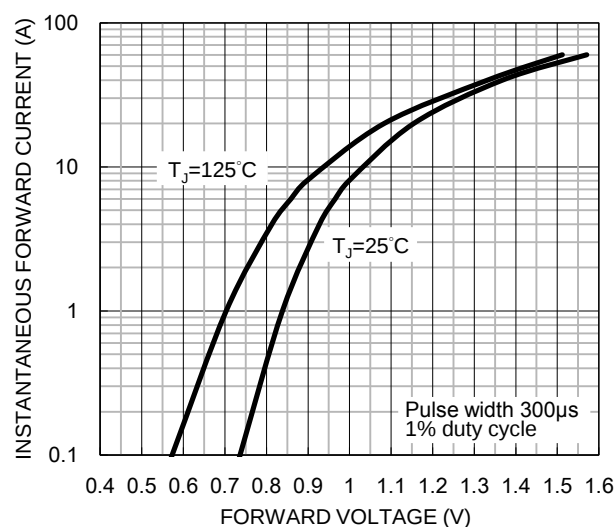
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**

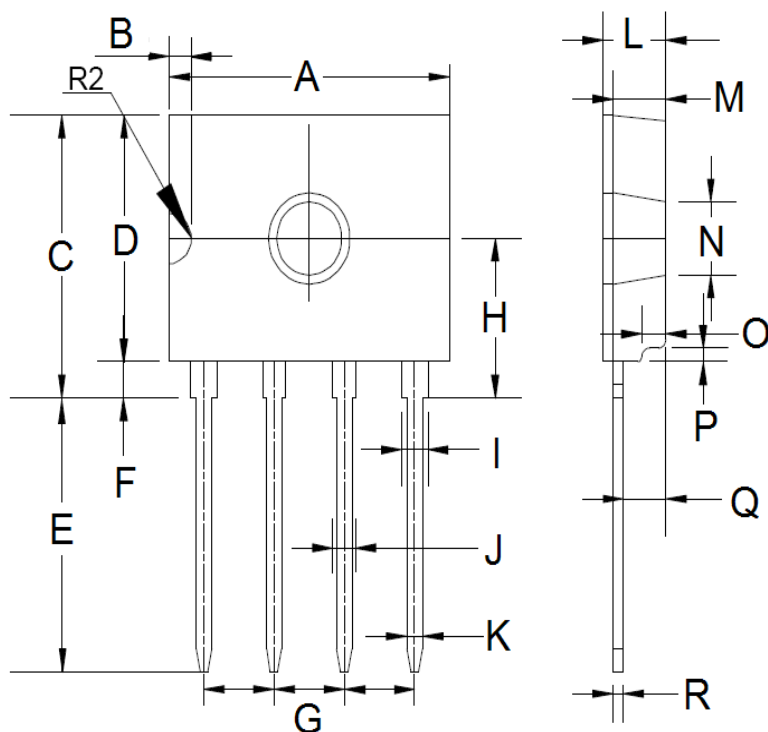


**Fig.4 Typical Forward Characteristics**



## 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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