# 8A, 600V - 1000V Standard Bridge Rectifier

## FEATURES

- Ideal for printed circuit board
- High case dielectric strength
- High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

## APPLICATIONS

- Switching mode power supply
- Adapters
- Lighting application

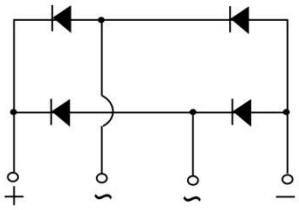
## MECHANICAL DATA

- Case: D3K
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Mounting torque: 0.80 N·m maximum
- Polarity: As marked
- Weight: 1.24g (approximately)

| KEY PARAMETERS | | |
|---|---|---|
| **PARAMETER** | **VALUE** | **UNIT** |
| $I_F$ | 8 | A |
| $V_{RRM}$ | 600 - 1000 | V |
| $I_{FSM}$ | 170 | A |
| $T_{J\ MAX}$ | 150 | °C |
| Package | D3K | |
| Configuration | Quad | |

Pb-Free RoHS COMPLIANT HALOGEN FREE

D3K



| **ABSOLUTE MAXIMUM RATINGS** ($T_A$ = 25°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 | $I_F$ | 8 | | | A |
| Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 170 | | | A |
| Rating for fusing (t<8.3ms) | $I^2t$ | 119.9 | | | $A^2s$ |
| Junction temperature | $T_J$ | - 55 to +150 | | | °C |
| Storage temperature | $T_{STG}$ | - 55 to +150 | | | °C |

## THERMAL PERFORMANCE

| PARAMETER | SYMBOL | TYP | 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” x 6” x 0.25” Al-plate

## ELECTRICAL SPECIFICATIONS ($T_A$ = 25°C unless otherwise noted)

| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
|---|---|---|---|---|---|
| Forward voltage per diode[1] | $I_F$ = 4A,$T_J$ = 25°C | $V_F$ | 0.93 | 1.10 | V |
| | $I_F$ = 8A,$T_J$ = 25°C | | 1.00 | 1.20 | V |
| | $I_F$ = 4A,$T_J$ = 125°C | | 0.81 | 1.00 | V |
| | $I_F$ = 8A,$T_J$ = 125°C | | 0.90 | 1.10 | V |
| Reverse current @ rated $V_R$ per diode[2] | $T_J$ = 25°C | $I_R$ | - | 10 | μA |
| | $T_J$ = 125°C | | - | 500 | μA |
| Junction capacitance per diode | 1MHz, $V_R$ = 4.0V | $C_J$ | 63 | - | pF |

**Notes:**

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

## ORDERING INFORMATION

| ORDERING CODE[1] | PACKAGE | PACKING |
|---|---|---|
| UR8KBx | D3K | 25 / Tube |

**Notes:**

1. “x” defines voltage from 600V(UR8KB60) to 1000V(UR8KB100)

## CHARACTERISTICS CURVES

($T_A$ = 25°C unless otherwise noted)

**Fig.1 Forward Current Derating Curve**

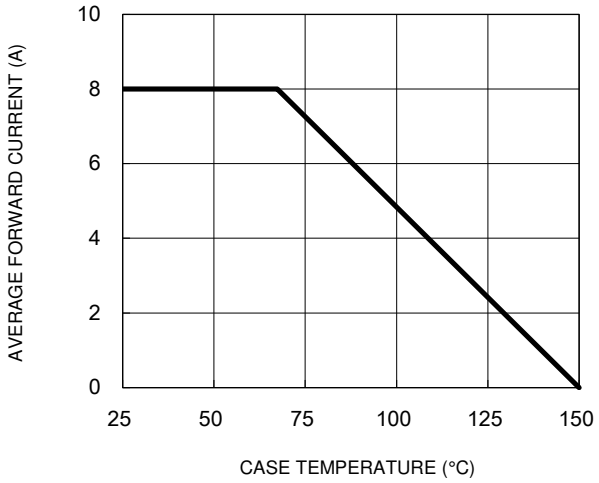



**Fig.2 Typical Junction Capacitance**

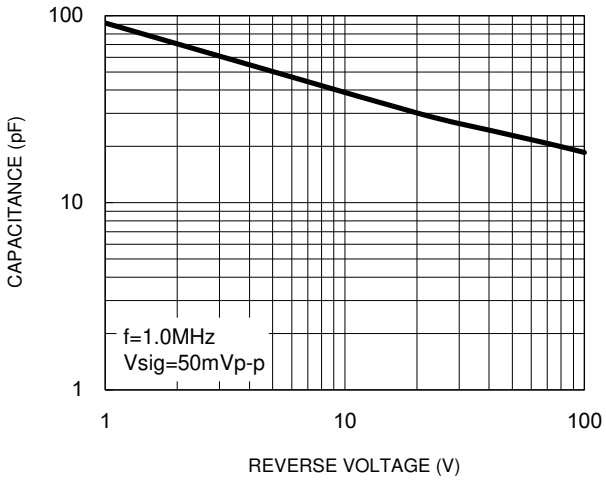



**Fig.3 Typical Reverse Characteristics**

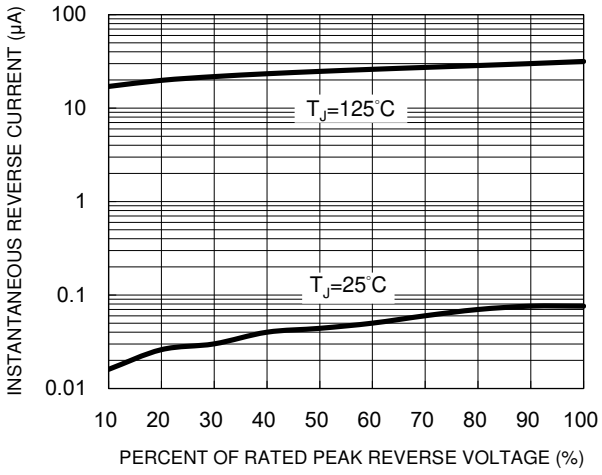
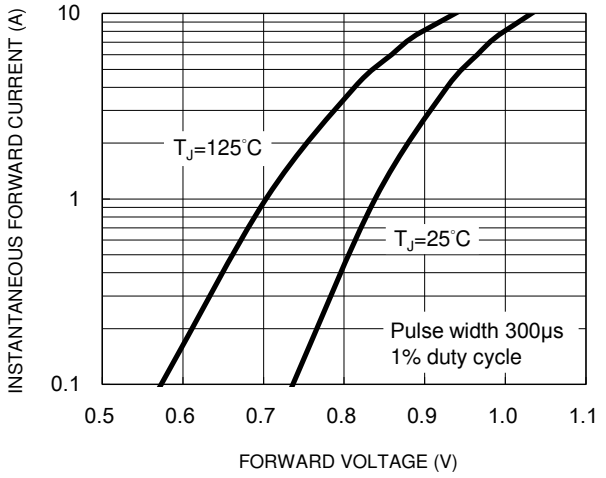
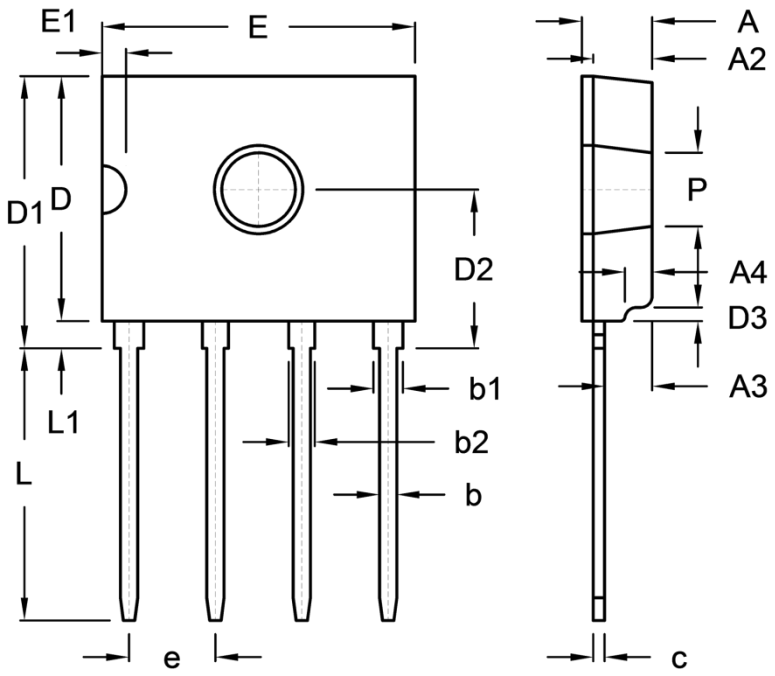



**Fig.4 Typical Forward Characteristics**



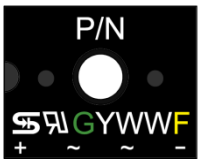
## PACKAGE OUTLINE DIMENSIONS

D3K




| DIM. | Unit (mm) | | Unit (inch) | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 2.90 | 3.30 | 0.114 | 0.130 |
| A2 | 2.40 | 2.80 | 0.094 | 0.110 |
| A3 | 1.80 | 2.40 | 0.071 | 0.094 |
| A4 | 1.00 | 1.40 | 0.039 | 0.055 |
| b | 0.66 | 0.86 | 0.026 | 0.034 |
| b1 | 1.10 | 1.50 | 0.043 | 0.059 |
| b2 | 1.05 | 1.25 | 0.041 | 0.049 |
| c | 0.40 | 0.60 | 0.016 | 0.024 |
| D | 10.50 | 11.10 | 0.413 | 0.437 |
| D1 | 11.70 | 12.30 | 0.461 | 0.484 |
| D2 | 6.70 | 7.30 | 0.264 | 0.287 |
| D3 | 0.40 | 0.80 | 0.016 | 0.031 |
| E | 13.50 | 14.10 | 0.531 | 0.555 |
| E1 | 0.70 | 1.40 | 0.028 | 0.055 |
| e | 3.51 | 4.11 | 0.138 | 0.162 |
| L | 11.70 | 12.30 | 0.461 | 0.484 |
| L1 | 1.10 | 1.40 | 0.043 | 0.055 |
| P | 3.10 | 3.40 | 0.122 | 0.134 |

## MARKING DIAGRAM




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

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