

UG2KB060 THRU UG2KB100

BRIDGE RECTIFIERS



| VOLTAGE | 600~1000 Volts | CURRENT | 2.0 Amperes | D3K | Marking & Schematic diagram | | | | | | | | | | |
|--|-------------------|----------------|-------------|---|--|-----|-------------|---|-----------------|---|--------------|---|--------------|---|-------------------|
| FEATURES | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • Glass passivated die construction • low forward voltage drop • High current capability • High surge current capability • Plastic material-UL flammability 94V-0 | | | | | | | | | | | | | | | |
| MECHANICAL DATA | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • Case: D3K , olded lastic • Terminals: Plated Leads Solderable per MIL-STD-202, Method 208 • Polarity: As Marked on Case • Mounting Position: Any • Lead Free: For RoHS / Lead Free Version | | | | | | | | | | | | | | | |
| TYPICAL APPLICATIONS | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • For use in low voltage ,high frequency inverters ,DC/DC converters,free wheeling ,and polarity protection applications | | | | | | | | | | | | | | | |
| | | | | <table border="1"> <thead> <tr> <th>PIN</th> <th>DISCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Output Anode(+)</td> </tr> <tr> <td>2</td> <td>Input Pin(-)</td> </tr> <tr> <td>3</td> <td>Input Pin(-)</td> </tr> <tr> <td>4</td> <td>Output Cathode(-)</td> </tr> </tbody> </table> | | PIN | DISCRIPTION | 1 | Output Anode(+) | 2 | Input Pin(-) | 3 | Input Pin(-) | 4 | Output Cathode(-) |
| PIN | DISCRIPTION | | | | | | | | | | | | | | |
| 1 | Output Anode(+) | | | | | | | | | | | | | | |
| 2 | Input Pin(-) | | | | | | | | | | | | | | |
| 3 | Input Pin(-) | | | | | | | | | | | | | | |
| 4 | Output Cathode(-) | | | | | | | | | | | | | | |
| | | | | <p>Remark:</p> <ol style="list-style-type: none"> ①. NH=niuhang trademark ②. FF=Product line code,According to actual changes YWW=Data code,According to actual changes EDDKF=Inernal control code,According to actual changes ③. UG2KBxxx=Modle,xxx=060,080,100 ④. "+ ~ -"=Polarity mark | | | | | | | | | | | |

Single phase,half wave,60Hz,resistive or inductive load.For capacitive load,derate current by 20%

Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified)

| Parameter | Symbol | UG2KB060 | UG2KB080 | UG2KB100 | Unit |
|---|-------------|-----------------------------------|----------|------------|--------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 600 | 800 | 1000 | V |
| Maximum RMS Voltag | V_{RMS} | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | V_{DC} | 600 | 800 | 1000 | V |
| Maximum Average Forward Rectified Current @ TC=100°C (see fig.1) | $I_{F(AV)}$ | with heatsink without heatsink | | 2.0 1.0 | A |
| Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method) | I_{FSM} | | | 60 | A |
| Current Squared Time Per Diode(t<8.3ms) | $I^2 t$ | | | 14.94 | A ² sec |

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)

| Parameter | Symbol | UG2KB060 | UG2KB080 | UG2KB100 | Unit |
|--|-----------|---|----------|----------|------|
| Maximum Forward Voltage Per Diode @2.0A (Note 1) | V_{FM} | | | 1.0 | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 2) | I_{RRM} | T _c =25°C T _c =125°C | | 5 300 | uA |
| Typical Junction Capacitance Per Diode (Note 3) | C_J | | | 25 | pF |

Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)

| Parameter | Symbol | UG2KB060 | UG2KB080 | UG2KB100 | Unit |
|--------------------------------------|-----------------|----------|----------|-------------|------|
| Operating Junction Temperature Range | T_J | | | -55 to +150 | °C |
| Storage Temperature Range | T_{STD} | | | -55 to +150 | |
| Typical thermal resistance (Note 4) | $R_{\theta JA}$ | | | 31.0 | °C/W |
| | $R_{\theta JL}$ | | | 7.6 | |

- Notes:
1. Pulse test: 300 μs pulse width,1% duty cycle
 2. Pulse test: pulse width ≤40ms
 3. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 4. Device mounted on Device mounted on 75mm x 45mm x 2.5mm Aluminum Plate Heatsink.

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RATING AND CHARACTERISTIC CURVES

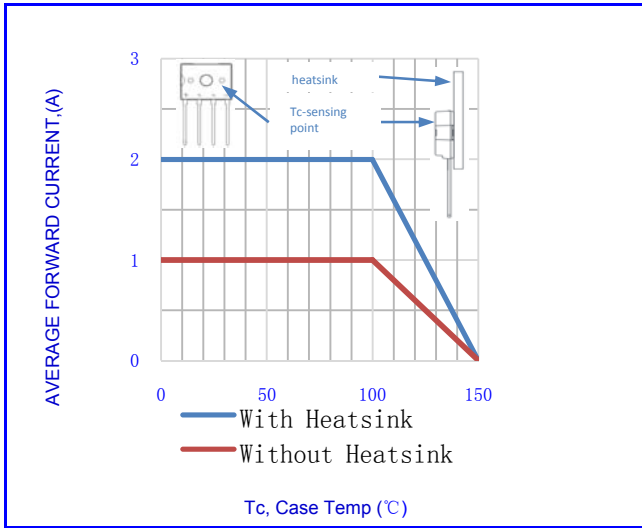


Fig.1-FORWARD CURRENT DERATING CURVE

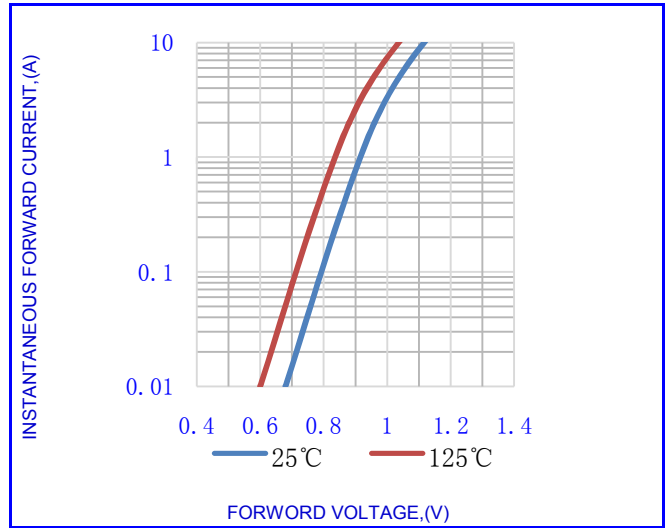


Fig.2- TYPICAL INSTANTANEOUS FORWARD

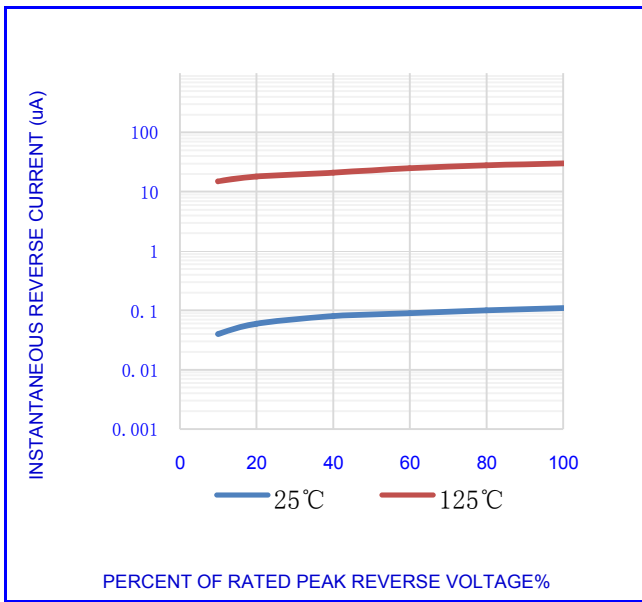


Fig.3- TYPICAL REVERSE CHARACTERISTICS

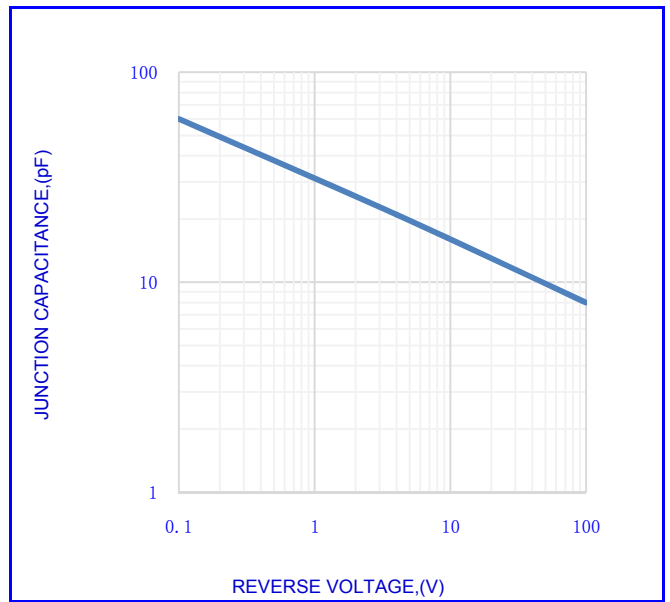


Fig.4- TYPICAL JUNCTION CAPACITANCE

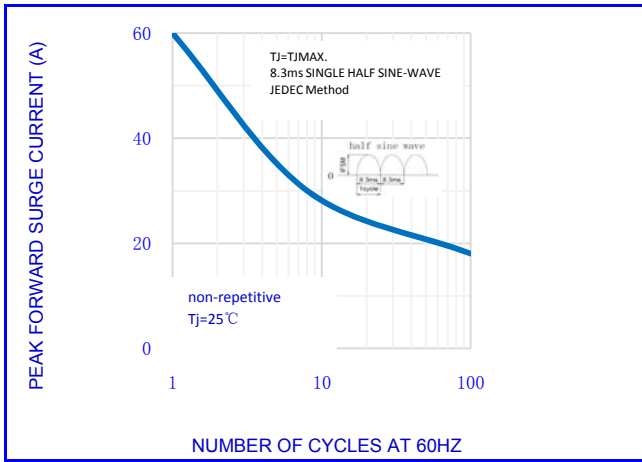


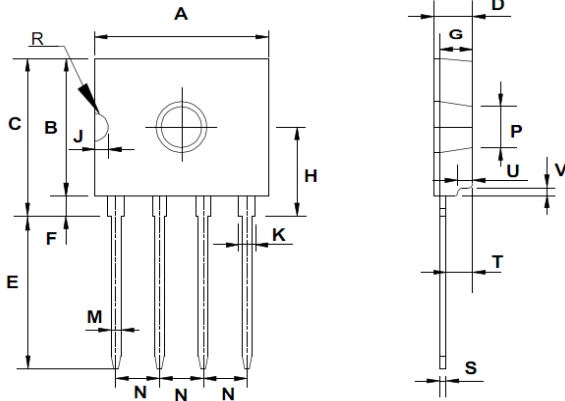
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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OUTLINE DRAWINGS



OUTLINE DIMENSIONS

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|-------|-------|--------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 13.50 | - | 14.10 | 0.531 | - | 0.555 |
| B | 10.50 | - | 11.10 | 0.413 | - | 0.437 |
| C | 11.70 | - | 12.30 | 0.461 | - | 0.484 |
| D | 2.90 | - | 3.30 | 0.114 | - | 0.130 |
| E | 11.70 | - | 12.30 | 0.461 | - | 0.484 |
| F | 1.20 | - | 1.40 | 0.047 | - | 0.055 |
| G | 2.40 | - | 2.80 | 0.094 | - | 0.110 |
| H | 6.40 | - | 7.00 | 0.252 | - | 0.276 |
| J | - | 1.450 | - | - | 0.057 | - |
| K | 1.10 | - | 1.50 | 0.043 | - | 0.059 |
| M | 0.66 | - | 0.86 | 0.026 | - | 0.034 |
| N | 3.51 | - | 4.11 | 0.138 | - | 0.162 |
| P | 3.10 | - | 3.40 | 0.122 | - | 0.134 |
| R | - | 1.450 | - | - | 0.057 | - |
| S | 0.40 | - | 0.60 | 0.016 | - | 0.024 |
| T | 1.80 | - | 2.40 | 0.071 | - | 0.094 |
| U | - | 0.600 | - | - | 0.024 | - |
| V | 1.00 | - | 1.40 | 0.039 | - | 0.055 |

D3K

Packing Information

| Package | Pack | Quantity (pcs/box) | Box Size L×W×H (mm) | Carton Size L×W×H (mm) | Quantity (box/carton) |
|---------|------|--------------------|---------------------|------------------------|-----------------------|
| D3K | B/P | 500 | 205×155×30 | 490×240×180 | 18 |

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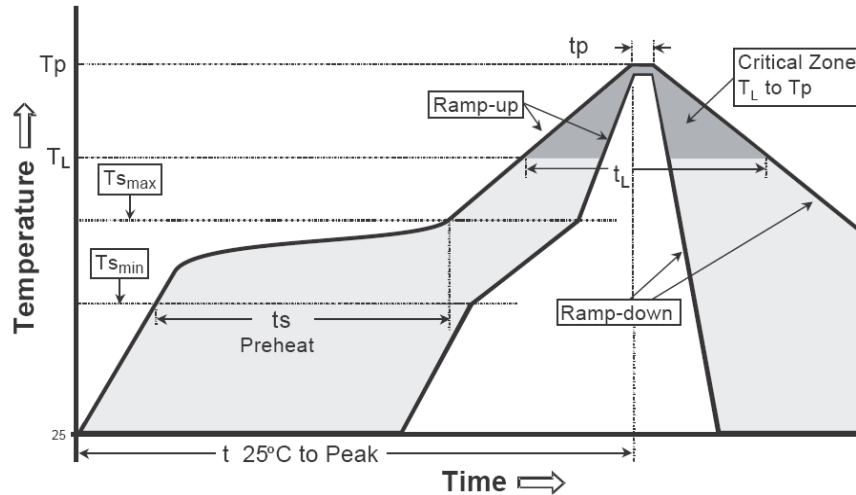
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Recommended wave soldering condition

| Product | Peak Temperature | Soldering Time |
|-----------------|------------------|-----------------|
| Pb-free devices | 260 +0/-5 °C | 5 +1/-1 seconds |

Recommended temperature profile for IR reflow



| Profile feature | Sn-Pb eutectic Assembly | Pb-free Assembly |
|--|----------------------------------|----------------------------------|
| Average ramp-up rate (T _{Smax} to T _p) | 3°C/second max. | 3°C/second max. |
| Preheat - Temperature Min(T _{S min}) - Temperature Max(T _{S max}) - Time(t _{s min} to t _{s max}) | 100°C 150°C 60-120 seconds | 150°C 200°C 60-180 seconds |
| Time maintained above: - Temperature (T _L) - Time (t _L) | 183°C 60-150 seconds | 217°C 60-150 seconds |
| Peak Temperature(T _p) | 240 +0/-5 °C | 260 +0/-5 °C |
| Time within 5°C of actual peak temperature(tp) | 10-30 seconds | 20-40 seconds |
| Ramp down rate | 6°C/second max. | 6°C/second max. |
| Time 25 °C to peak temperature | 6 minutes max. | 8 minutes max. |

Note : All temperatures refer to topside of the package, measured on the package body surface.

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