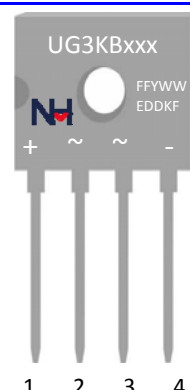


## UG3KB060 THRU UG3KB100

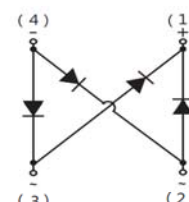
### BRIDGE RECTIFIERS



| VOLTAGE                                                                                                                                                                                                                                                                  | 600~1000 Volts | CURRENT | 3.0 Amperes | D3K | Marking & Schematic diagram |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|-------------|-----|-----------------------------|
| <b>FEATURES</b>                                                                                                                                                                                                                                                          |                |         |             |     |                             |
| <ul style="list-style-type: none"> <li>Glass passivated die construction</li> <li>low forward voltage drop</li> <li>High current capability</li> <li>High surge current capability</li> <li>Plastic material-UL flammability 94V-0</li> </ul>                            |                |         |             |     |                             |
| <b>MECHANICAL DATA</b>                                                                                                                                                                                                                                                   |                |         |             |     |                             |
| <ul style="list-style-type: none"> <li>Case: D3K , olded lastic</li> <li>Terminals: Plated Leads Solderable per MIL-STD-202, Method 208</li> <li>Polarity: As Marked on Case</li> <li>Mounting Position: Any</li> <li>Lead Free: For RoHS / Lead Free Version</li> </ul> |                |         |             |     |                             |
| <b>TYPICAL APPLICATIONS</b>                                                                                                                                                                                                                                              |                |         |             |     |                             |
| <ul style="list-style-type: none"> <li>For use in low voltage ,high frequency inverters ,DC/DC converters,free wheeling ,and polarity protection applications</li> </ul>                                                                                                 |                |         |             |     |                             |



| PIN | DISCRIPTION       |
|-----|-------------------|
| 1   | Output Anode(+)   |
| 2   | Input Pin(-)      |
| 3   | Input Pin(-)      |
| 4   | Output Cathode(-) |



**Remark:**

- NH=niuhang trademark
- FF=Product line code,According to actual changes  
YWW=Date code,According to actual changes  
EDDKF=Internal code,According to actual changes
- UG3KBxxx=Modle,xxx=060,080,100
- "+ ~ ~ -"=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      | UG3KB060   | UG3KB080 | UG3KB100 | Unit               |
|-------------------------------------------------------------------------------------------------|-------------|------------|----------|----------|--------------------|
| Maximum Repetitive Peak Reverse Voltage                                                         | $V_{RRM}$   | 600        | 800      | 1000     | V                  |
| Maximum RMS Votag                                                                               | $V_{RMS}$   | 420        | 560      | 700      | V                  |
| Maximum DC Blocking Voltage                                                                     | $V_{DC}$    | 600        | 800      | 1000     | V                  |
| Maximum Average Forward Rectified Current<br>@ TC=100°C (see fig.1)                             | $I_{F(AV)}$ | 3.0<br>1.2 |          |          | A                  |
| Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method) | $I_{FSM}$   | 80         |          |          | A                  |
| Current Squared Time Per Diode(t<8.3ms)                                                         | $I^2 t$     | 22.58      |          |          | A <sup>2</sup> sec |

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

| Parameter                                                        | Symbol    | UG3KB060 | UG3KB080 | UG3KB100 | Unit |
|------------------------------------------------------------------|-----------|----------|----------|----------|------|
| Maximum Forward Voltage Per Diode @3.0A (Note 1)                 | $V_{FM}$  | 1.1      |          |          | V    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 2) | $I_{RRM}$ | 5<br>300 |          |          | uA   |
| Typical Junction Capacitance Per Diode (Note 3)                  | $C_J$     | 34       |          |          | pF   |

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

| Parameter                            | Symbol          | UG3KB060    | UG3KB080 | UG3KB100 | 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 |
|                                      | $R_{\theta JL}$ | 7.60        |          |          |      |

- Notes: 1. Pulse test: 300  $\mu$ s pulse width,1% duty cycle  
2. Pulse test: pulse width $\leq$ 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.

# UG3KB060 THRU UG3KB100

## BRIDGE RECTIFIERS



### RATING AND CHARACTERISTIC CURVES

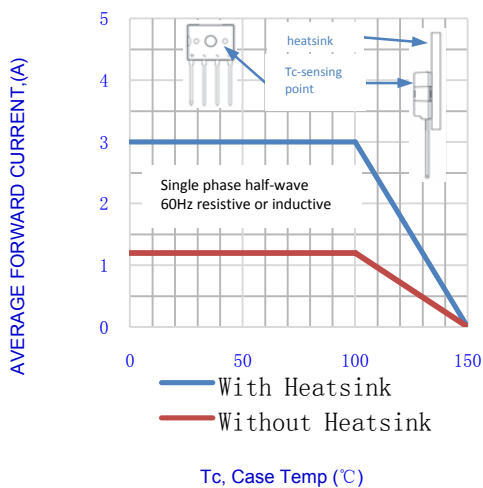


Fig.1-FORWARD CURRENT DERATING CURVE

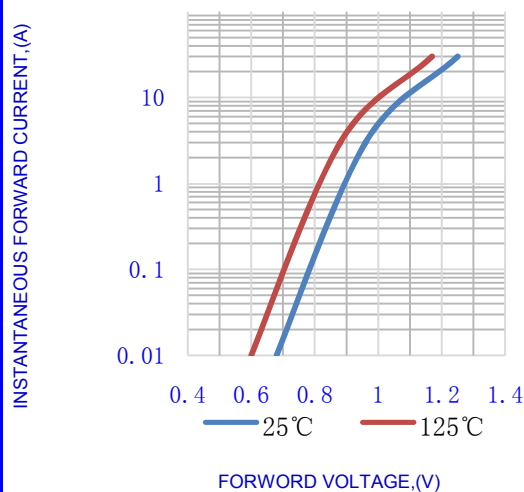


Fig.2- TYPICAL INSTANTANEOUS FORWARD

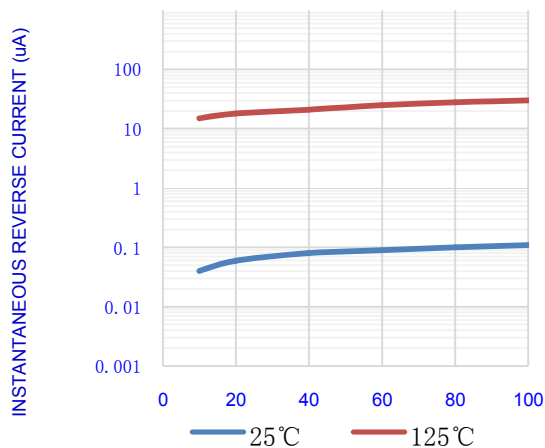


Fig.3- TYPICAL REVERSE CHARACTERISTICS

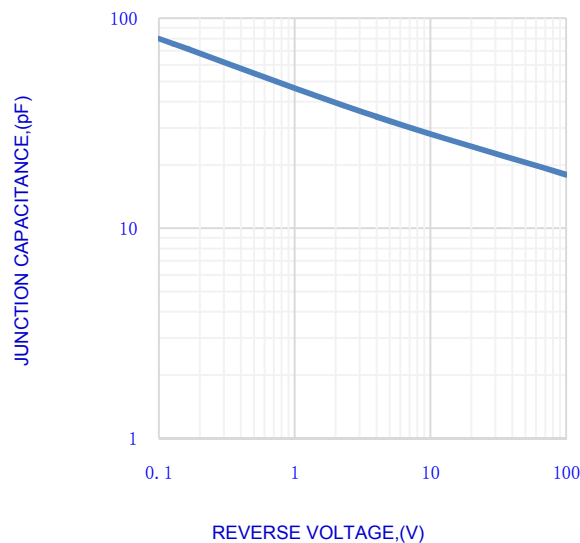


Fig.4- TYPICAL JUNCTION CAPACITANCE

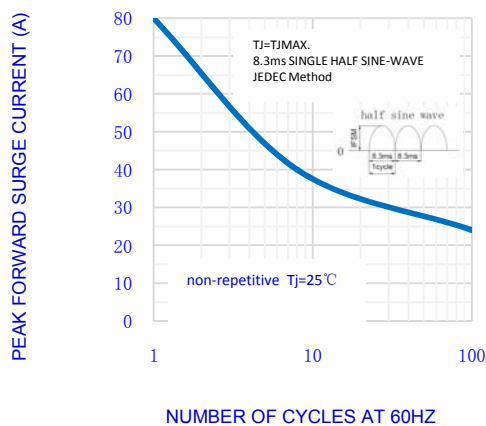


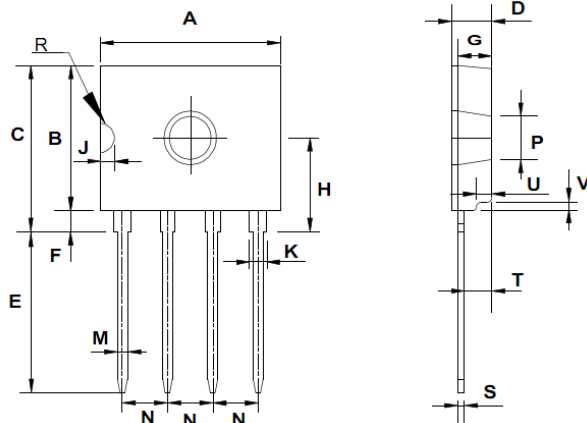
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

UG3KB060 THRU UG3KB100

BRIDGE RECTIFIERS



OUTLINE DRAWINGS



D3K

| 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 |

Packing Information

| Package | Pack | Quantity<br>(pcs/box) | Box Size<br>L×W×H (mm) | Carton Size<br>L×W×H (mm) | Quantity<br>(pcs/carton) |
|---------|------|-----------------------|------------------------|---------------------------|--------------------------|
| D3K     | B/P  | 500                   | 205×155×30             | 490×240×180               | 5000                     |

**UG3KB060 THRU UG3KB100**

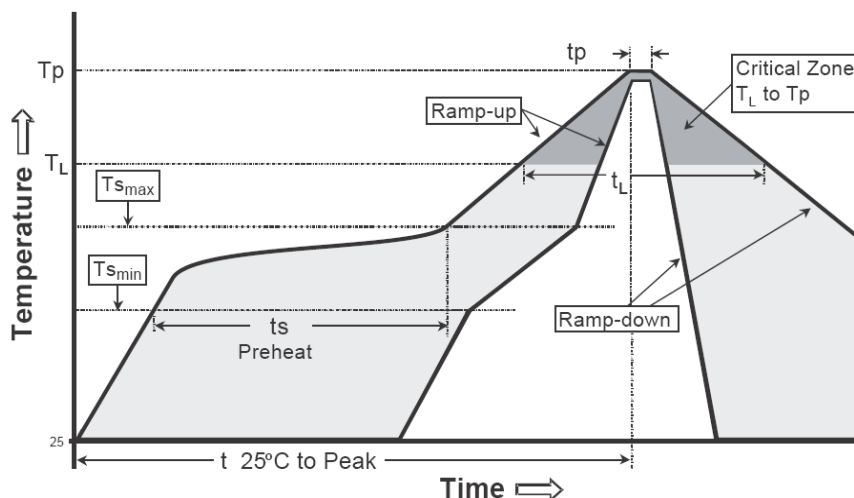
**BRIDGE RECTIFIERS**



**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<br>(Tsmmax to Tp)                                                     | 3°C/second max.                  | 3°C/second max.                  |
| Preheat<br>-Temperature Min(TS min)<br>-Temperature Max(TS max)<br>-Time(ts min to ts max) | 100°C<br>150°C<br>60-120 seconds | 150°C<br>200°C<br>60-180 seconds |
| Time maintained above:<br>-Temperature (TL)<br>- Time (tL)                                 | 183°C<br>60-150 seconds          | 217°C<br>60-150 seconds          |
| Peak Temperature(TP)                                                                       | 240 +0/-5 °C                     | 260 +0/-5 °C                     |
| Time within 5°C of actual peak<br>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.

**UG3KB060 THRU UG3KB100**

**BRIDGE RECTIFIERS**



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