

UG4KB060 THRU UG4KB100

BRIDGE RECTIFIERS



**VOLTAGE:** 600-1000 Volts

**CURRENT:** 4.0 Amperes

**D3K** Marking and Polarity

**FEATURES**

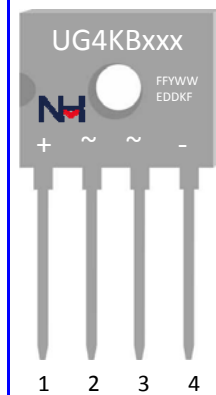
- Glass passivated die construction
- low forward voltage drop
- High current capability
- High surge current capability
- Plastic material-UL flammability 94V-0

**MECHANICAL DATA**

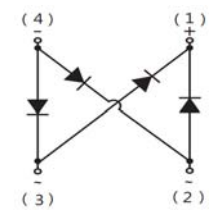
- Case: D3K , olded lastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: As Marked on Case
- Mounting Position: Any
- Lead Free: For RoHS / Lead Free Version

**TYPICAL APPLICATIONS**

- For use in low voltage ,high frequency inverters ,DC/DC converters,free wheeling ,and polarity protection applications



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



Remark:

- ①. NH=niuhang trademark
- ②. FF=Product line code,According to actual changes  
YWW=Date code,According to actual changes  
EDDKF=Inernal code,According to actual changes
- ③. UG4KBxxx=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	UG4KB060	UG4KB080	UG4KB100	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 4.0 without heatsink 2.0			A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method)	$I_{FSM}$			120	A
Current Squared Time Per Diode( $t < 8.3ms$ )	$I^2 t$			59.76	A <sup>2</sup> sec

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

Parameter	Symbol	UG4KB060	UG4KB080	UG4KB100	Unit
Maximum Forward Voltage Per Diode (Note 1)	$V_{FM}$	@4.0A 1.1 @2.0A 1.0			V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 2)	$I_{RRM}$	TC=25°C 5 TC=125°C 300			uA
Typical Junction Capacitance Per Diode (Note 3)	$C_J$			38	pF

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

Parameter	Symbol	UG4KB060	UG4KB080	UG4KB100	Unit
Operating Junction Temperature Range	$T_J$				°C
Storage Temperature Range	$T_{STD}$	-55 to +150			
Typical thermal resistance (Note 4)	$R_{\theta JA}$ $R_{\theta JL}$	31.0 7.6			°C/W

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

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RATING AND CHARACTERISTIC CURVES

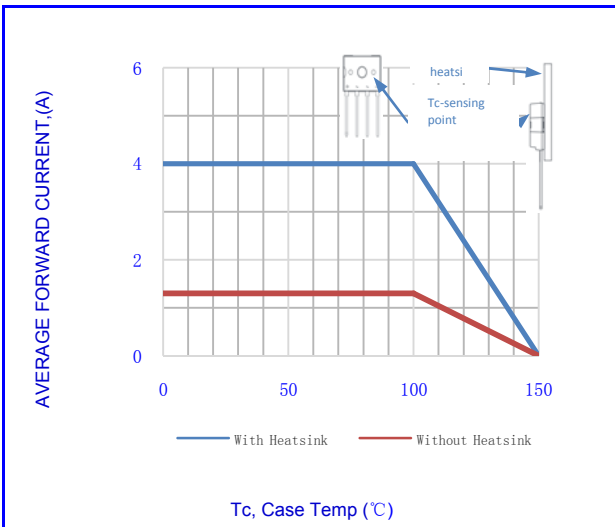


Fig.1-FORWARD CURRENT DERATING CURVE

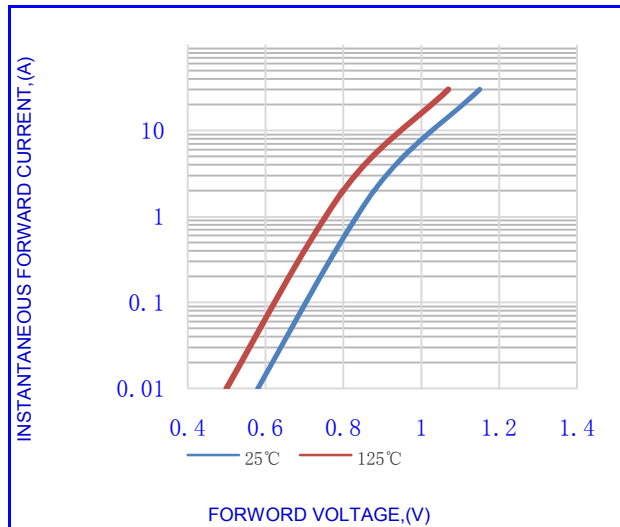


Fig.2- TYPICAL INSTANTANEOUS FORWARD

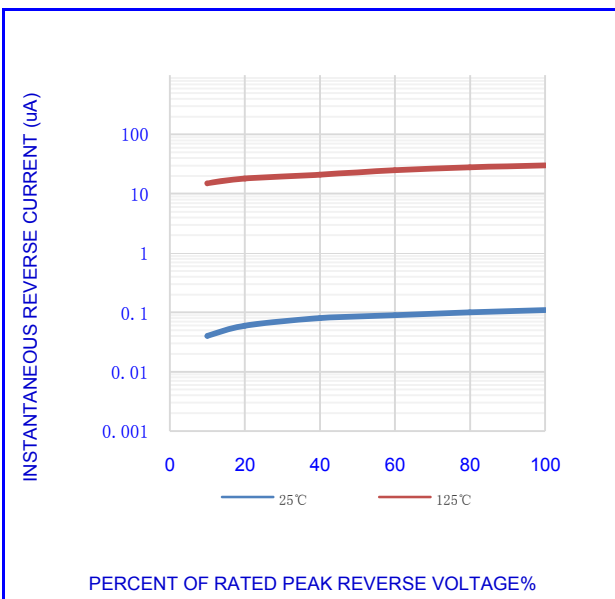


Fig.3- TYPICAL REVERSE CHARACTERISTICS

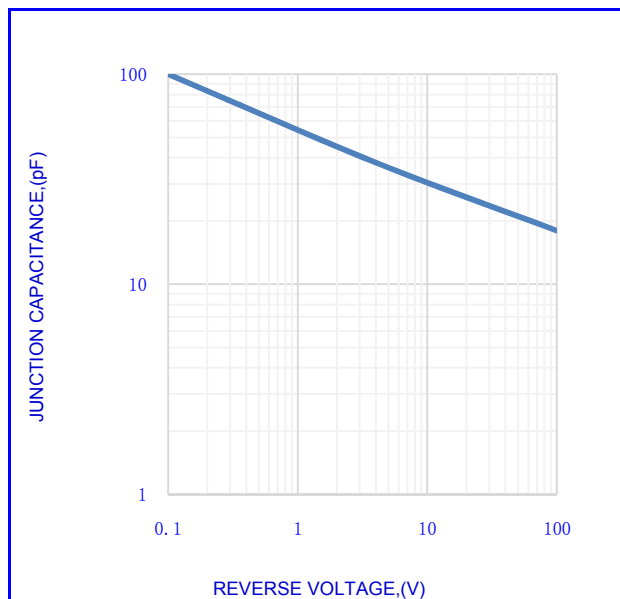


Fig.4- TYPICAL JUNCTION CAPACITANCE

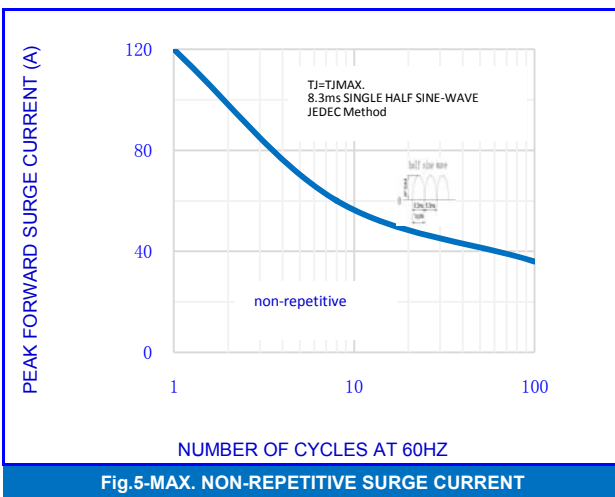


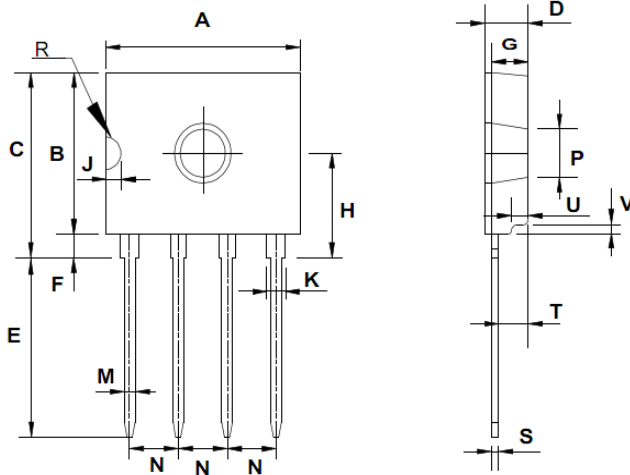
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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OUTLINE DRAWINGS



DIM	OUTLINE DIMENSIONS					
	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 (PCS/carton)
D3K	B/P	500	205×155×30	490×240×180	5000

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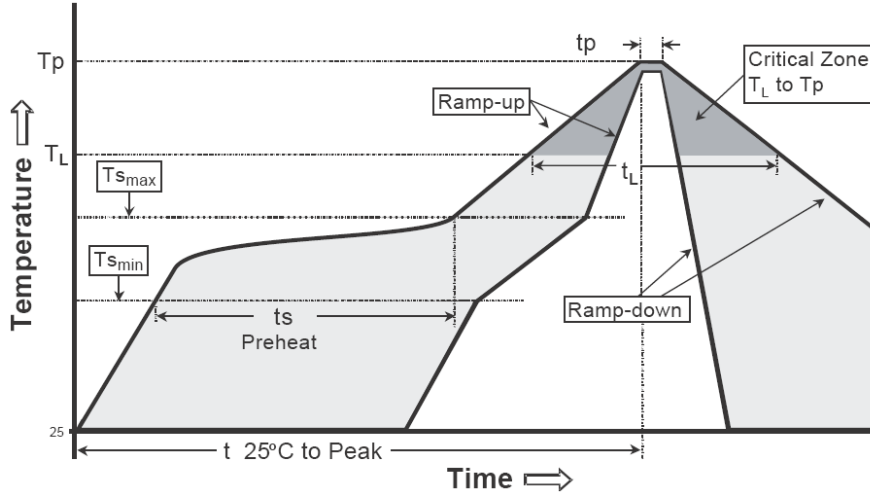
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**Recommended wave soldering condition**

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 <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T <sub>S min</sub> ) -Temperature Max(T <sub>S max</sub> ) -Time(t <sub>s min</sub> to t <sub>s max</sub> )	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T <sub>L</sub> ) - Time (t <sub>L</sub> )	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T <sub>P</sub> )	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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