

KBU10005 THRU KBU1010

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KBU10005 THRU KBU1010

10.0A Plastic Passivated Single-Phase Bridge Rectifiers 50V-1000V

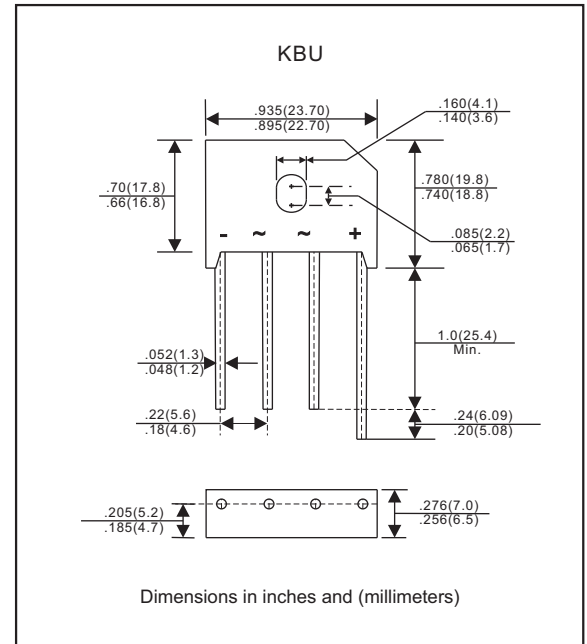
Features

- Surge overload rating 240 amperes peak
- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- Plastic Passivated chip junctions
- Lead-free parts meet RoHS requirements
- UL recognized file # E321971
- Suffix "-H" indicates Halogen-free part, ex. KBU10005-H

Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, KBU
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 8.00 gram

Package outline



Maximum ratings and Electrical characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	With heatsink, Note 1 at $T_C=100^{\circ}\text{C}$ Without heatsink	I_O			10.0 3.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			240	A
Reverse current	$V_R = V_{RRM} \quad T_J = 25^{\circ}\text{C}$ $V_R = V_{RRM} \quad T_J = 125^{\circ}\text{C}$	I_R			10 500	μA
I^2t Rating for fusing	$t < 8.3\text{ms}$	I^2t			240	A^2s
Storage temperature		T_{STG}	-55		+150	$^{\circ}\text{C}$

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	Operating temperature $T_J, (^{\circ}\text{C})$
KBU10005	50	35	50	1.0	-55 to +150
KBU1001	100	70	100		
KBU1002	200	140	200		
KBU1004	400	280	400		
KBU1006	600	420	600		
KBU1008	800	560	800		
KBU1010	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage @ $I_F=5.0\text{A}$

Note 1: Device mounted on 100mm*100mm*1.6mm Cu plate heatsink.

Rating and characteristic curves (KBU10005 THRU KBU1010)

Fig.1 - Forward Current Derating Curve

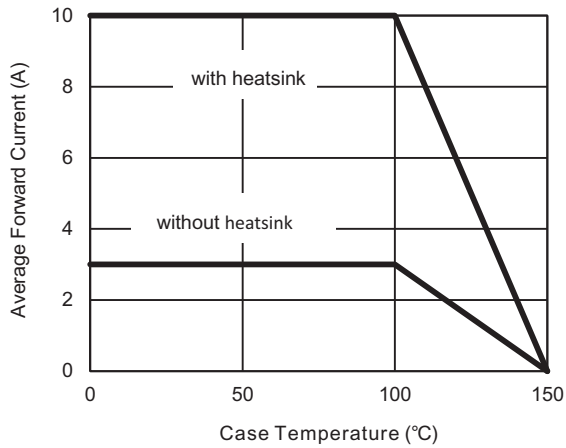


Fig.2 - Maximum Non-Repetitive Surge Current

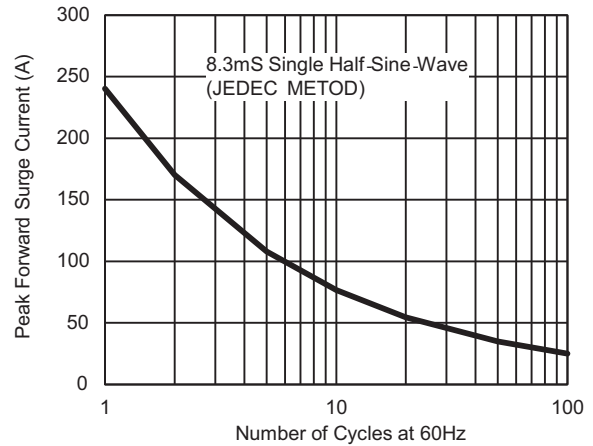


Fig.3 - Typical Reverse Characteristics

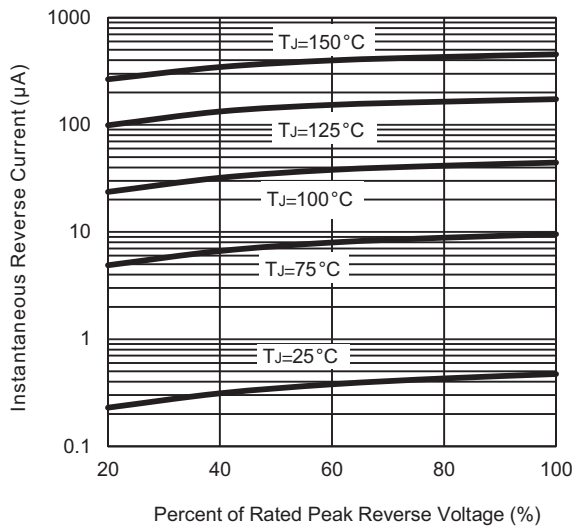
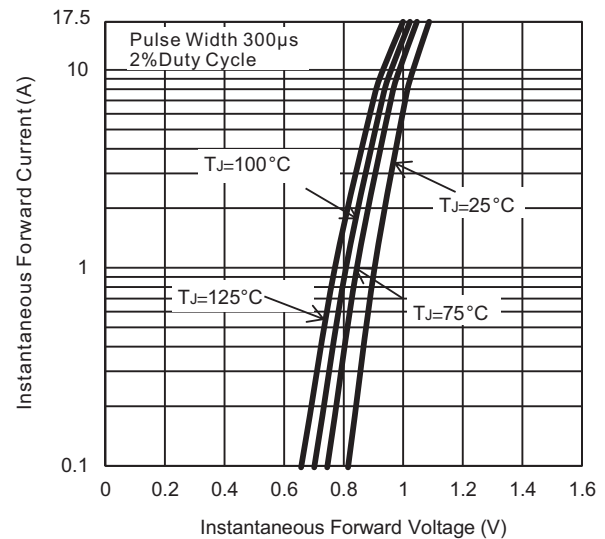
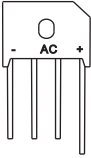
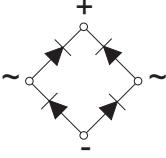


Fig.4 - Typical Forward Characteristics



KBU10005 THRU KBU1010**Pinning information**

Simplified outline	Symbol
	

Marking

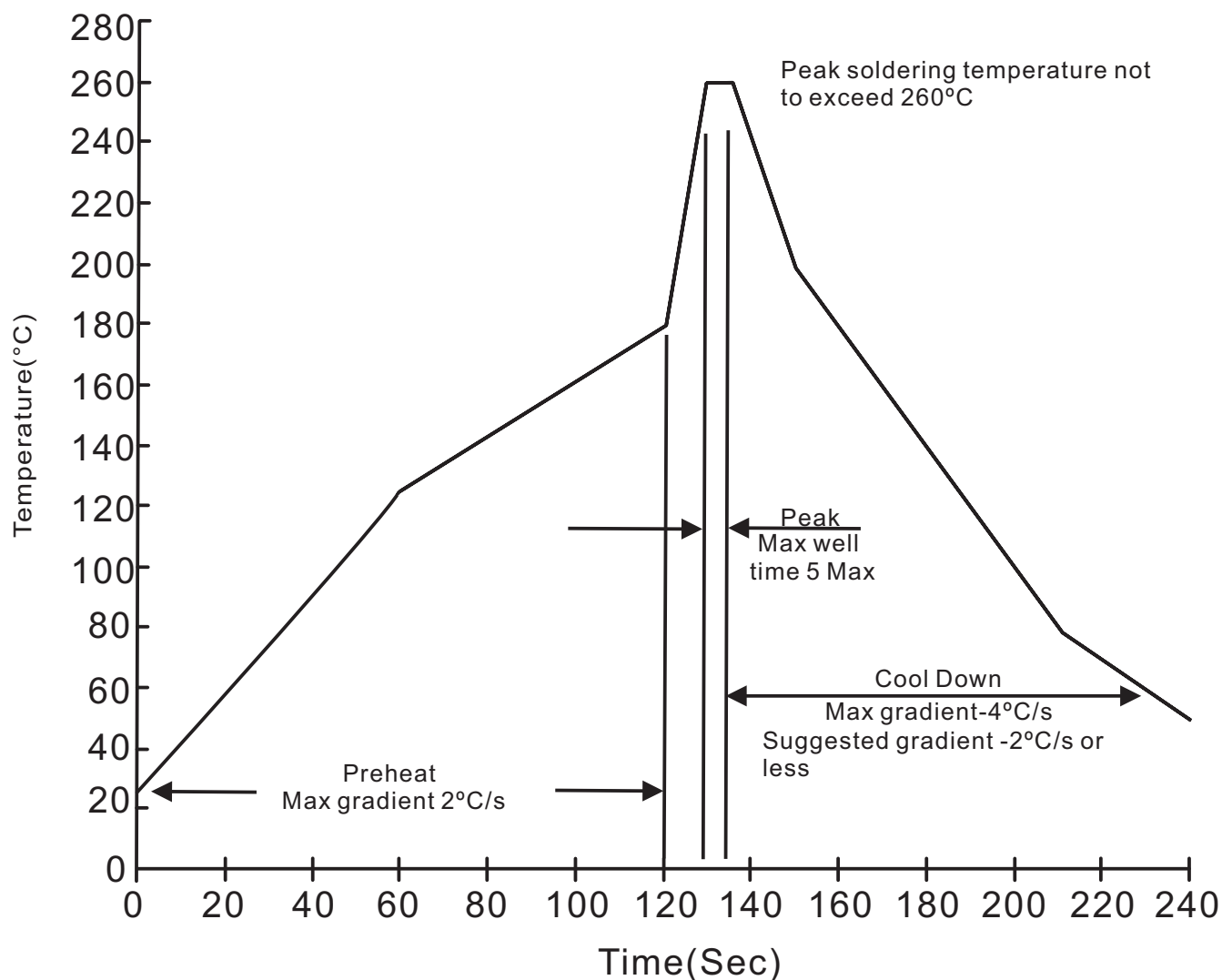
Type number	Marking code
KBU10005	KBU10005
KBU1001	KBU1001
KBU1002	KBU1002
KBU1004	KBU1004
KBU1006	KBU1006
KBU1008	KBU1008
KBU1010	KBU1010

Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
KBU	20	488*55.2*9.5	400	510*110*125	530*240*285	1,600	19.5

Bulk packing

PACKAGE	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
KBU	400	230*230*49	485*240*172	2,400	18.6

KBU10005 THRU KBU1010**Suggested thermal profiles for soldering processes****1. Lead free temperature profile wave-soldering**

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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260 \pm 5^\circ\text{C}$ for $10 \pm 2\text{sec.}$ immerse body into solder $1/16'' \pm 1/32''$	MIL-STD-750D METHOD-2031
2. Solderability	at $245 \pm 5^\circ\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R = 80\%$ rate at $T_J = 150^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A = 25^\circ\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^\circ\text{C}$, $I_F = I_O$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	$15P_{SIG}$ at $T_A = 121^\circ\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^\circ\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave, one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A = 85^\circ\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031