

# KBP00 THRU KBP10

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深圳FMS Kinter 131 6803 0058

# KBP00 THRU KBP10

## 1.5A Miniature Single-Phase Silicon Bridge Rectifiers- 50-1000V

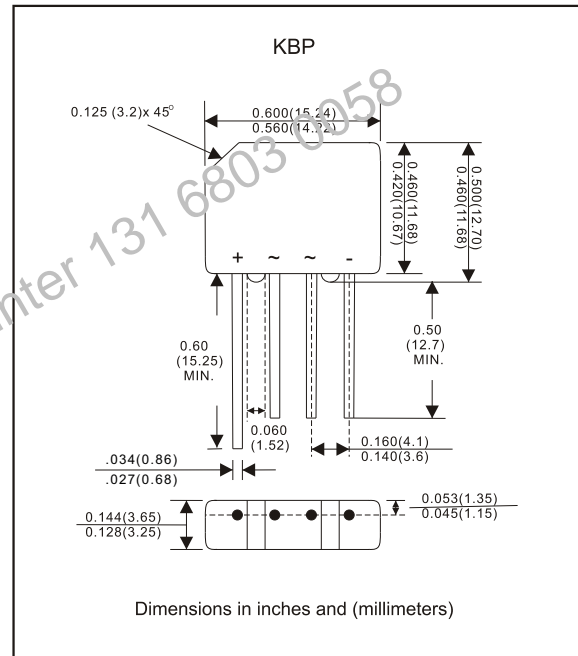
### Features

- Surge overload ratings to 50 amperes peak
- Ideal for printed circuit board
- Reliable low cost construction technique
- Open Junction chip cells inside
- High case dielectric strength
- Lead length at 5 lbs (2.3Kg) tension
- Lead-free parts for green partner, meet RoHS requirements
- UL recognized file # E321971.

### Mechanical data

- Case: Potted plastic round body KBP
- Epoxy: UL94-V0 rated flame retardant
- Terminals: Solderable per MIL-STD-750 Method 2026
- Polarity: As marked
- Mounting Position: Any
- Weight: Approximated 0.04 ounces, 1.04 grams

### Package outline



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

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	$I_o$			1.5	A
Forward surge current	8.3ms single halfsine-wave superimposed on rate load (JEDECmethode)	$I_{FSM}$			50	A
Reverse current	$V_R = V_{RRM} T_A = 25^{\circ}\text{C}$	$I_R$			5.0	uA
	$V_R = V_{RRM} T_A = 100^{\circ}\text{C}$				500	
$I^2t$ Rating for fusing	$t < 8.3 \text{ ms}$	$I^2t$		12.5		$\text{A}^2\text{s}$
Typical Junction capacitance	Note 1	$C_J$		30		pF
Typical thermal resistance	Note 2	$R_{\theta JL}$		11.0		$^{\circ}\text{C}/\text{W}$
Typical thermal resistance	Note 2	$R_{\theta JA}$		30.0		$^{\circ}\text{C}/\text{W}$
Storage temperature		$T_{STG}$	-65		+175	$^{\circ}\text{C}$

Note:

1. Measured at 1.0MHz and applied reverse voltage of 4.0V
2. Unit mounted in free air, no heatsink on P.B.C., 0.5"x0.5" (12x12mm) copper pads, 0.375"(9.5mm) lead length

SYMBOLS	$V_{RRM}^{*1}$ (V)	$V_{RMS}^{*2}$ (V)	$V_R^{*3}$ (V)	$V_F^{*4}$ (V)	Operating temperature $T_J, (^{\circ}\text{C})$
KBP00	50	35	50	1.10	-55 to +125
KBP01	100	70	100		
KBP02	200	140	200		
KBP04	400	280	400		
KBP06	600	420	600		
KBP08	800	560	800		
KBP10	1000	700	1000		

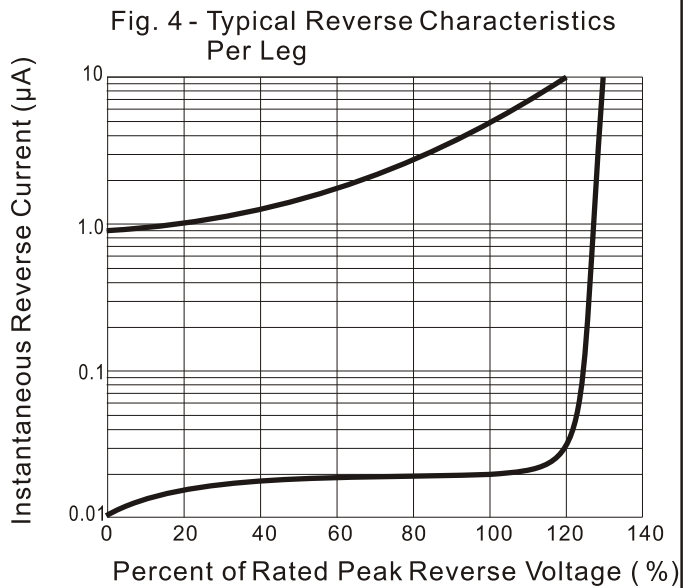
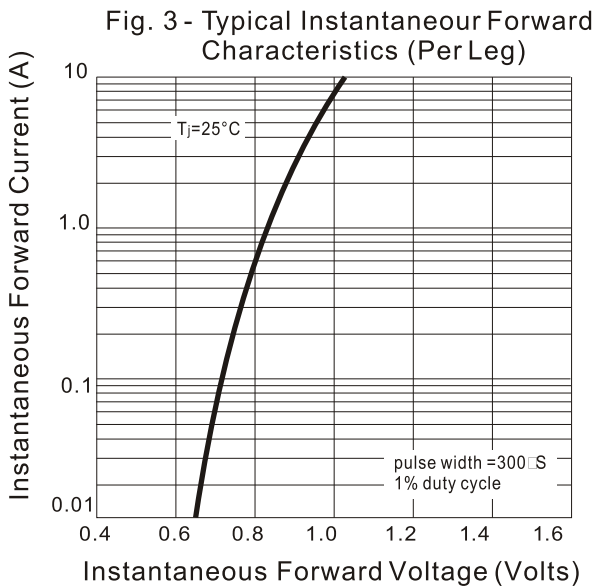
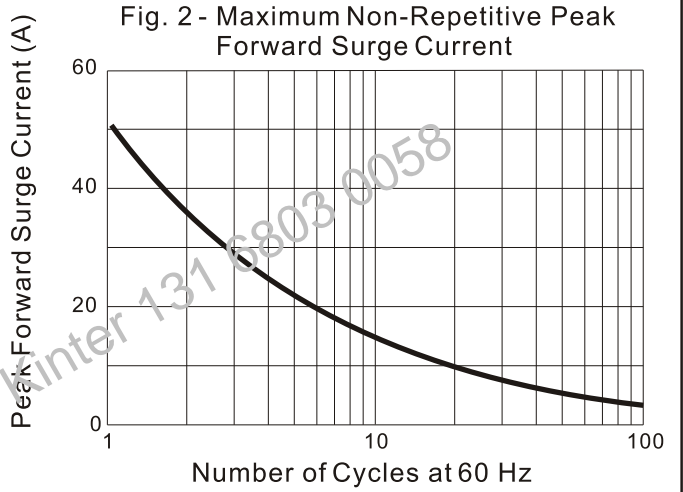
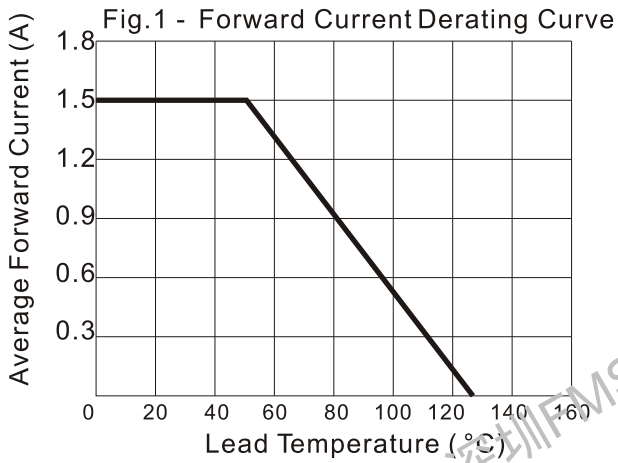
\*1 Repetitive peak reverse voltage

\*2 RMS voltage

\*3 Continuous reverse voltage

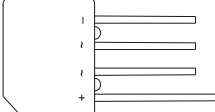
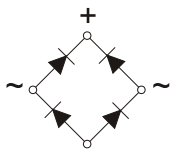
\*4 Maximum forward voltage @1.5A

## Rating and characteristic curves (KBP00 THRU KBP10)



# KBP00 THRU KBP10

## Pinning information

Simplified outline	Symbol
	

## Marking

Type number	Marking code
KBP00	KBP00
KBP01	KBP01
KBP02	KBP02
KBP04	KBP04
KBP06	KBP06
KBP08	KBP08
KBP10	KBP10

## 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)
KBP	30	474*37.4*7.4	1,200	490*145*100	505*325*235	4,800	17.0

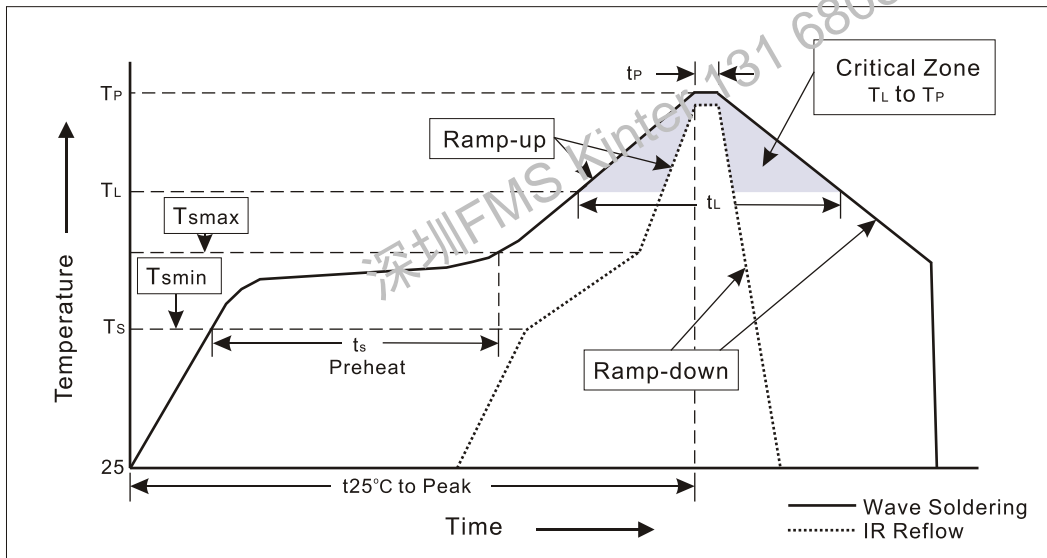
## Bulk packing

PACKAGE	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
KBP	500	200*200*35	445*215*260	6,000	15.0

# KBP00 THRU KBP10

## Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=10°C~35°C Humidity=65%±15%
- 2.Reflow soldering of surface-mount devices



### 3.Flow (wave)soldering (solder dipping)

Profile Feature	Soldering Condition
Average ramp-up rate( $T_L$ to $T_P$ )	<3°C/sec
Preheat -Temperature Min( $T_{smin}$ ) -Temperature Max( $T_{smax}$ ) -Time(min to max)( $t_s$ )	100°C 150°C 60~120sec
$T_{smax}$ to $T_L$ -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature( $T_L$ ) -Time( $t_L$ )	183°C 60~150sec
Peak Temperature( $T_P$ )	255°C-0/+5°C
Time within 5°C of actual Peak Temperature( $t_P$ )	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

**KBP00 THRU KBP10****High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_A=125^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1026
4. Forward Operation Life	Rated average rectifier current at $T=25^\circ\text{C}$ 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 <sub>SIG</sub> at $T_A=121^\circ\text{C}$ for 4 hrs.	
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
9. Forward Surge	8.3ms single halfsine-wave superimposed on rated load, one surge.	MIL-STD-750D METHOD-4066-2
10. Humidity	at $T_A=65^\circ\text{C}$ , RH=98% for 1000hrs.	MIL-STD-750D METHOD-1038
11. High Temperature Storage Life	at 175°C for 1000hrs.	MIL-STD-750D METHOD-1031
12. Solvent Resistance	Dip into Freon at 25°C for 1 min.	MIL-STD-202F METHOD-215