



# KBL4005 THRU KBL410

Reverse Voltage - 50 to 1000 V olts Forward Current - 4.0 Amperes

## SILICON BRIDGE RECTIFIERS

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Ideal for printed circuit boards
- ◆ Low reverse leakage
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:  
260°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

### Mechanical Data

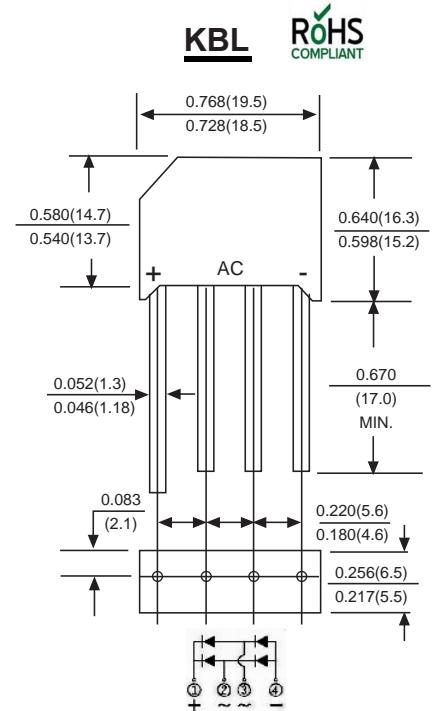
**Case :** JEDEC KBL Molded plastic body

**Terminals :** Solder plated, solderable per MIL-STD-750, Method 2026

**Polarity :** Polarity symbol marking on body

**Mounting Position :** Any

**Weight :** 0.22 ounce , 6.21 grams



Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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

Parameter	SYMBOLS	MDD	MDD	MDD	MDD	MDD	MDD	MDD	UNITS
		KBL4005	KBL401	KBL402	KBL404	KBL406	KBL408	KBL410	
Marking Code									
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward output rectified current at $T_c=50^\circ\text{C}$ (Note 2) $T_A=50^\circ\text{C}$ (Note 3)	$I_{AV}$					4.0			A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$					125			A
Rating for Fusing ( $t < 8.3\text{ms}$ )	$I^2t$					166			A <sup>2</sup> s
Maximum instantaneous forward voltage drop per bridge element at 4.0A	$V_F$					1.0			V
Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$	$I_R$					10			$\mu\text{A}$
						1.0			mA
Typical Junction Capacitance (Note 1)	$C_J$					105			pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$					20			$^\circ\text{C}/\text{W}$
Operating junction temperature range	$T_J$					-65 to +150			$^\circ\text{C}$
storage temperature range	$T_{STG}$					-55 to +150			$^\circ\text{C}$

**NOTES:**

1. Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts.
2. Unit mounted on 3.0" x 3.0" x 0.11" thick (7.5x7.5x0.3cm) Al. plate.
3. P.C. Board mounted with 0.5" x 0.5" (12x12mm) copper pads, 0.375" (9.5mm) lead length.



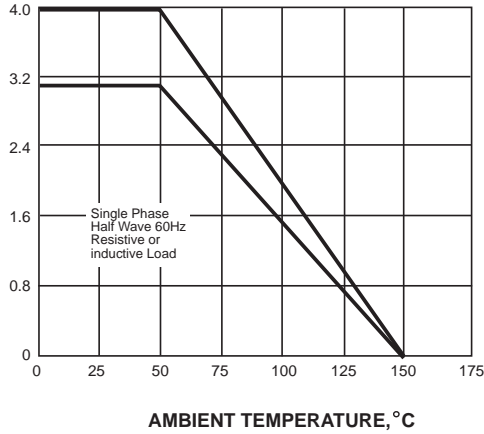
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## Ratings And Characteristic Curves

AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

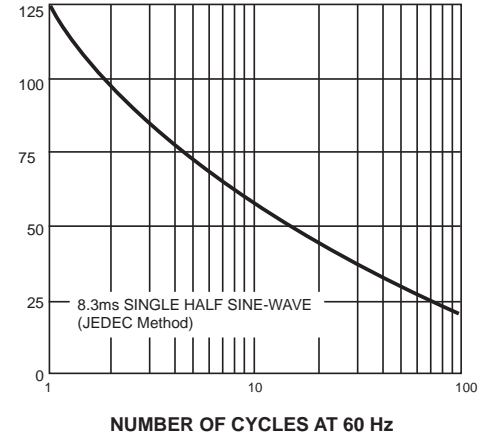
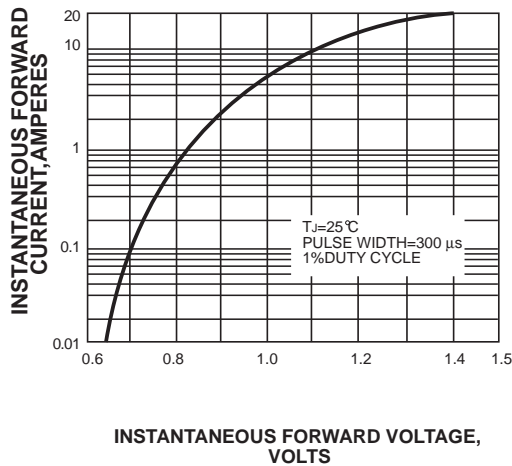


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

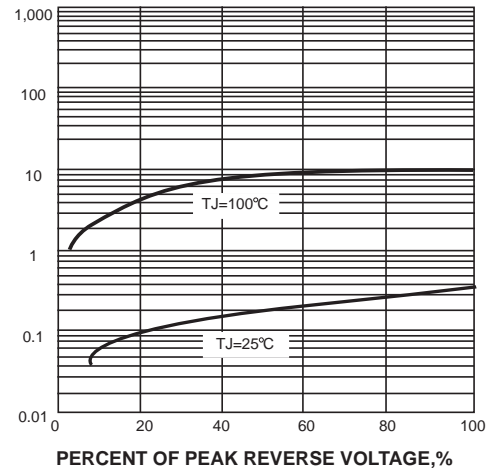
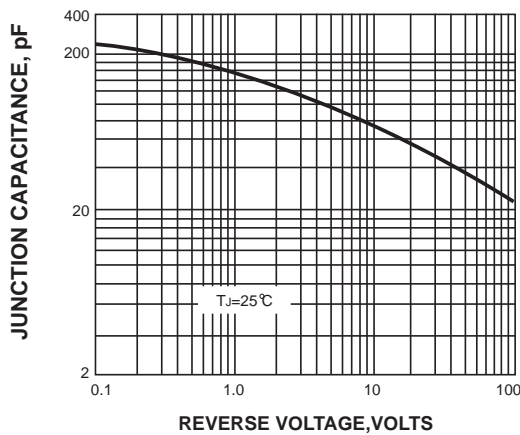
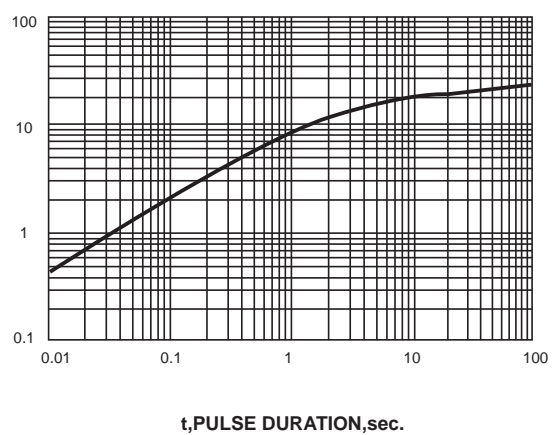


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



The curve above is for reference only.



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## Packing information



unit:mm

Item	Symbol	Tolerance	ABS
Carrier width	A	0.1	5.45
Carrier length	B	0.1	7.00
Carrier depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D <sub>1</sub>	min	50.00
Feed hole diameter	D <sub>2</sub>	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.50
Punch hole pitch	P	0.1	8.00
Sprocket hole pitch	P <sub>0</sub>	0.1	4.00
Embossment center	P <sub>1</sub>	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	12.00
Reel width	W <sub>1</sub>	1.0	12.40

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

## Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (mm)	BOX (pcs)	INNER BOX (mm)	REEL DIA, (mm)	CARTON SIZE (mm)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
ABS	13"	3,000	4.0	6000	xxx*XXX*XX	330	360*360*360	48000	11.0

## Suggested Pad Layout

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