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An IATF 16949, ISO9001 and ISO 14001 Certified Company



## SILICON BRIDGE RECTIFIERS

*Reverse Voltage - 50 to 1000 Volts*

*Forward Current - 35.0 Amperes*



KBPC / MB-35

### FEATURES:

1. The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
2. Ideal for printed circuit boards
3. Low reverse leakage
4. High forward surge current capability
5. High temperature soldering guaranteed: 260 °C/10 seconds, at 5 lbs. (2.3kg) tension
6. Electrically isolated metal case for maximum heat dissipation

**APPLICATIONS:** Single phase input rectification.

## KBPC35005 to KBPC3510

**KBPC/MB-35**

**Surface Mount Package**

**RoHS compliant**



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## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Ratings at  $T_a = 25^\circ\text{C}$  unless specified otherwise, single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.)

DESCRIPTION	SYMBOLS	KBPC 35005	KBPC 3501	KBPC 3502	KBPC 3504	KBPC 3506	KBPC 3508	KBPC 3510	UNITS
		MB 3505	MB 351	MB 352	MB 354	MB 356	MB 358	MB 3510	
Maximum repetitive peak reverse volt.	$V_{RRM}$	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 1,2)	$I_{(AV)}$	35							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	400							A
Rating for Fusing( $t<8.3\text{ms}$ )	$I^2t$	664							$\text{A}^2\text{s}$
Maximum instantaneous forward voltage drop per bridge element at 17.5A	$V_F$	1.1							V
Maximum DC reverse current at rated DC blocking voltage	$I_R$	$T_A=25^\circ\text{C}$							$\mu\text{A}$
		$T_A=100^\circ\text{C}$							mA
Isolation voltage from case to leads	$V_{ISO}$	2500							$V_{AC}$
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	2							$^\circ\text{C/W}$
Operating junction temperature range	$T_J$	-65 to +150							$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-65 to +150							$^\circ\text{C}$

### NOTES:

- Unit mounted on 9" x 3.5" x 4.6" thick(23cmx9cmx11.8cm)Al.plate.
- Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer efficiency with #8 screw.



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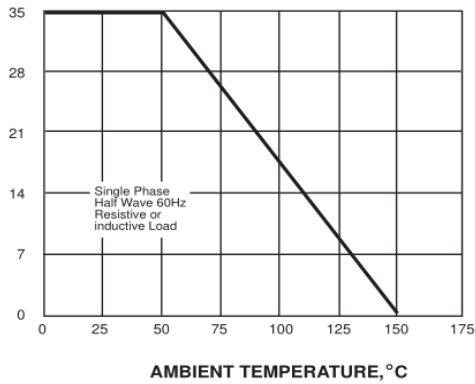
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### TYPICAL CHARACTERISTIC CURVES

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

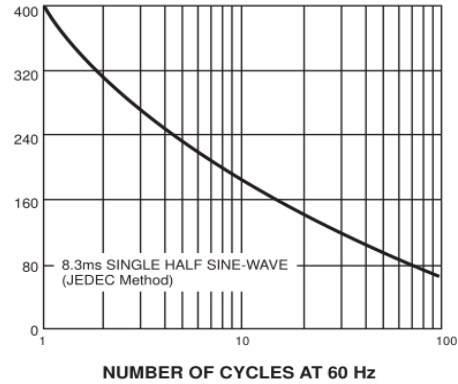
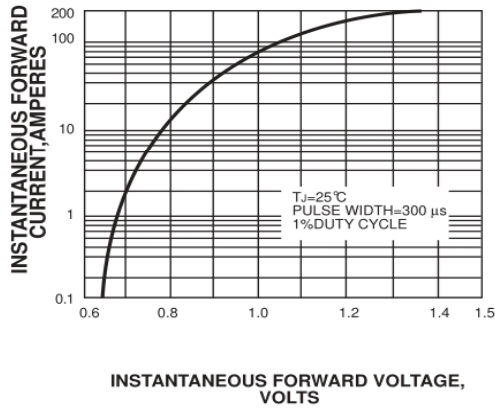


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

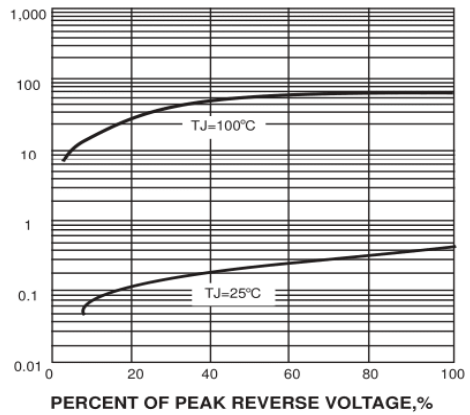
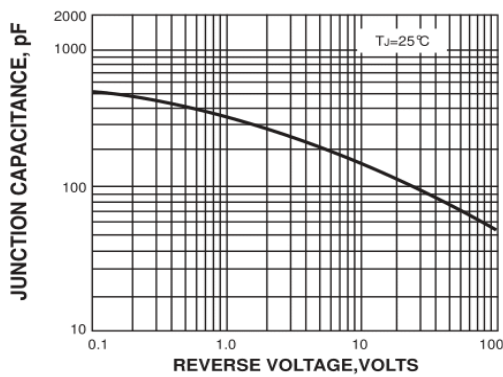
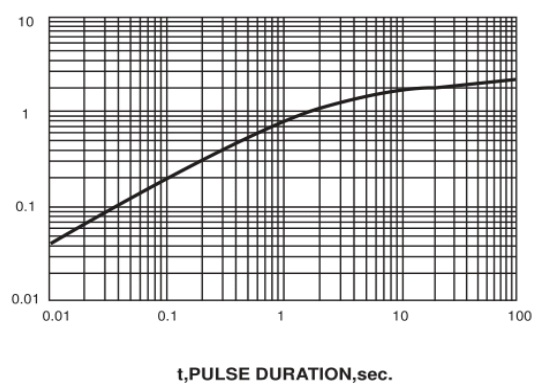


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE





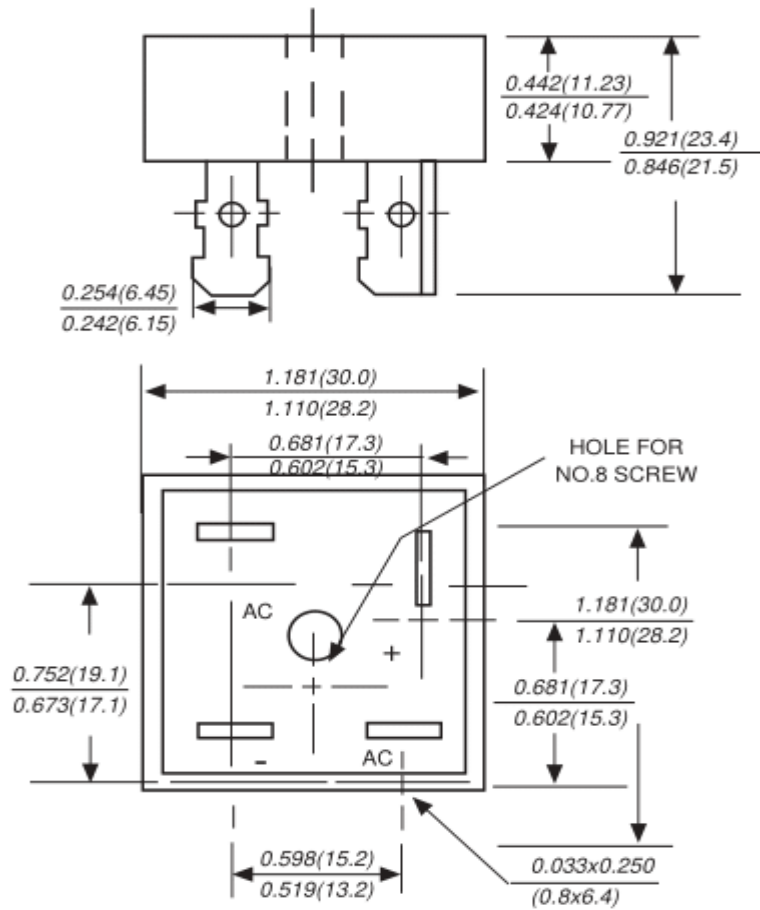
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## PACKAGE DETAILS

### KBPC/MB-35



*Dimensions in inches and (millimeters)*

**Case:** Metal case

**Terminals:** Plated 0.25" (6.35mm) lug.

**Polarity:** Polarity symbols marked on case

**Mounting:** Through hole for #8 screw, 20in.-lbs. torque max.

**Weight:** 1.02 ounce, 29 grams



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## Recommended Product Storage Environment for Discrete Semiconductor Devices

This storage environment assumes that the Diodes and transistors are packed properly inside the original packing supplied by CDIL.

- Temperature 5 °C to 30 °C
- Humidity between 40 to 70 %RH
- Air should be clean.
- Avoid harmful gas or dust.
- Avoid outdoor exposure or storage in areas subject to rain or water spraying .
- Avoid storage in areas subject to corrosive gas or dust. Product shall not be stored in areas exposed to direct sunlight.
- Avoid rapid change of temperature.
- Avoid condensation.
- Mechanical stress such as vibration and impact shall be avoided.
- The product shall not be placed directly on the floor.
- The product shall be stored on a plane area. They should not be turned upside dawn.  
They should not be placed against the wall.

### **Shelf Life of CDIL Products**

The shelf life of products is the period from product manufacture to shipment to customers. The product can be unconditionally shipped within this period. The period is defined as 2 years.

If products are stored longer than the shelf life of 2 years the products shall be subjected to quality check as per CDIL quality procedure.

The products are further warranted for another one year after the date of shipment subject to the above conditions in CDIL original packing.

### **Floor Life of CDIL Products and MSL Level**

When the products are opened from the original packing, the floor life will start.

For this, the following JEDEC table may be referred:

JEDEC MSL Level		
Level	Time	Condition
1	Unlimited	≤30 °C / 85%
2	1 Year	≤30 °C / 60%
2a	4 Weeks	≤30 °C / 60%
3	168 Hours	≤30 °C / 60%
4	72 Hours	≤30 °C / 60%
5	48 Hours	≤30 °C / 60%
5a	24 Hours	≤30 °C / 60%
6	Time on Label(TOL)	≤30 °C / 60%



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## Customer Notes

### Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

### Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



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CIN No. U32109DL1964PTC004291