



## MASTER INSTRUMENT CORPORATION

### SINGLE-PHASE BRIDGE RECTIFIER KBPC1005 THRU KBPC1010 BR305 THRU BR310

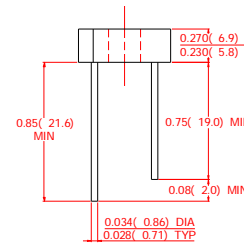
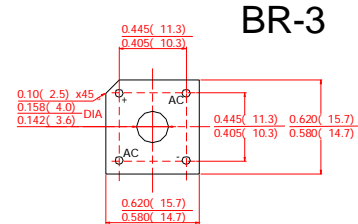
**VOLTAGE RANGE** 50 to 1000 Volts  
**CURRENT** 3.0 Amperes

#### FEATURES

- l Low cost construction
- l High forward surge current capability
- l Ideal for printed circuit board
- l High isolation voltage from case to leads
- l High temperature soldering guaranteed:  
260°C/10 second, at 5 lbs. (2.3kg) tension.

#### MECHANICAL DATA

- l Case: Molded plastic body
- l Terminal: Lead solderable per MIL-STD-202E method 208C.
- l Polarity: Polarity symbols molded on case
- l Mounting: Thru hole for #6 screw, 5 in.-lbs torque max.
- l Weight: 0.093ounce, 2.62 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 derate current by 20%.

	SYMBOLS	KBPC1005 BR305	KBPC101 BR31	KBPC102 BR32	KBPC104 BR34	KBPC106 BR36	KBPC108 BR38	KBPC1010 BR310	UNITS
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Output Current, at	T <sub>C</sub> =50°C (Note 2)	3.0							Amps
	T <sub>A</sub> =25°C (Note 2)	2.0							
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	60							Amps
Rating for Fusing(t<8.3ms)	I <sup>2</sup> T	15							A <sup>2</sup> S
Maximum Instantaneous Forward Voltage at 5.0A	V <sub>F</sub>	1.0							Volts
Maximum DC Reverse Current at rated DC blocking voltage per element	T <sub>A</sub> =25°C	5.0							μAmps
	T <sub>A</sub> =100°C	0.5							mAmps
Isolation Voltage from case to leads	V <sub>ISO</sub>	2500							μAmps
Typical Junction Capacitance Resistance (Note 1)	C <sub>J</sub>	20							°C/W
Typical Thermal Resistance per element (Note 2)	R <sub>θJA</sub>	12							°C/W
Operating Temperature Range	T <sub>J</sub>	-55 to +150							°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150							°C

#### NOTES:

1. Measured at 1.0 MHz and applied reverse voltage of 4.0 volts
2. Unit mounted on 4.0"×4.0"×0.11" thick (10.5×10.5×0.3mm) Al. plate.
3. Unit mounted on P.C.B at 0.375" (9.5mm) lead length with 0.5"×0.5" (12×12mm) copper pads.



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**KBPC1005 THRU KBPC1010**  
**BR305 THRU BR310**

**VOLTAGE RANGE 50 to 1000 Volts**  
**CURRENT 3.0 Amperes**

RATINGS AND CHARACTERISTIC CURVES KBPC1005 THRU KBPC110  
 BR305 THRU BR310

FIG.1-DERATING CURVE FOR  
 OUTPUT DERTAINING CURVE

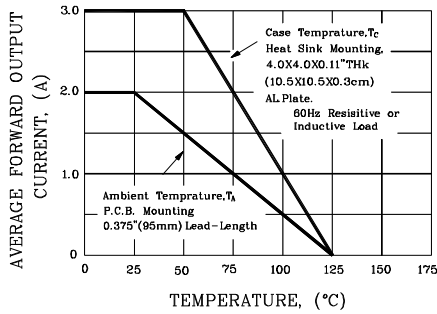


FIG.2-MAXIMUM NON-REPETITIVE PEAK  
 FORWARD SURGE CURRENT PER ELEMENT

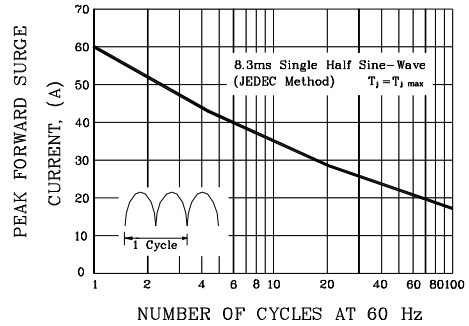


FIG.3-TYPICAL FORWARD CHARACTERISTICS  
 PER BRIDGE ELEMENT

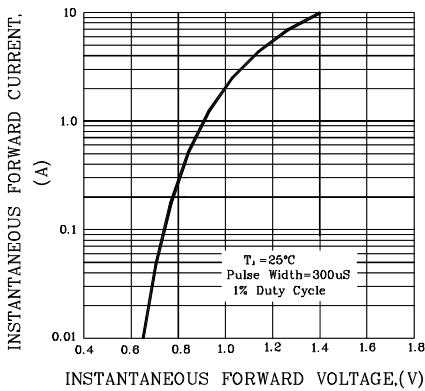


FIG.4-TYPICAL REVERSE CHARACTERISTICS  
 PER BRIDGE ELEMENT

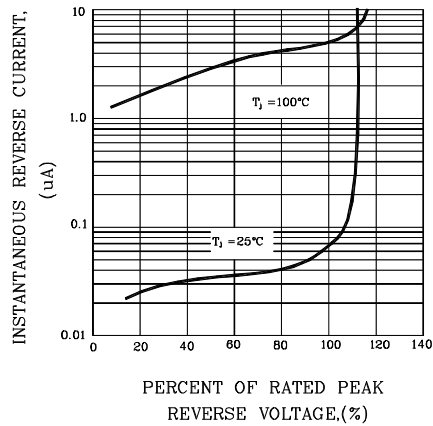


FIG.5-TYPICAL JUNCTION CAPACITANCE  
 PER BRIDGE ELEMENT

