



MASTER INSTRUMENT CORPORATION

SINGLE-PHASE BRIDGE RECTIFIER
MB2505 THRU MB2510
KBPC25005 THRU KBPC2510

VOLTAGE RANGE 50 to 1000 Volts
CURRENT 25 Amperes

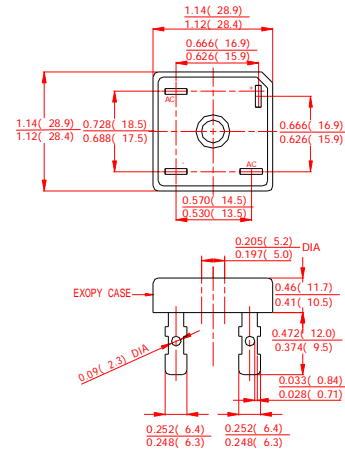
FEATURES

- l Low cost
- l This series is UL recognized under component index, file number E127707
- 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: Plated 0.25" (6.35mm) lug.
- l Polarity: Polarity symbols marked on case
- l Mounting: Thru hole for #10 screw, 20 in.-lbs torque max.
- l Weight: 1.02 ounce, 29 grams

MB-35



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 | MB2505 KBPC25005 | MB251 KBPC2501 | MB252 KBPC2502 | MB254 KBPC2504 | MB256 KBPC2506 | MB258 KBPC2508 | MB2510 KBPC2510 | UNITS |
|--|-------------------------|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|---------------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | Volts |
| Maximum RMS Voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | Volts |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | Volts |
| Maximum Average Forward Rectified Output Current, at $T_C=55^\circ\text{C}$ (Note 1,2) | $I_{(AV)}$ | 25 | | | | | | | Amps |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 300 | | | | | | | Amps |
| Rating for Fusing ($t < 8.3\text{ms}$) | I^2T | 373 | | | | | | | A^2S |
| Maximum Instantaneous Forward Voltage at 12.5A | V_F | 1.1 | | | | | | | Volts |
| Maximum DC Reverse Current at rated DC blocking voltage | $T_A=25^\circ\text{C}$ | 10 | | | | | | | μAmps |
| | $T_A=100^\circ\text{C}$ | 1.0 | | | | | | | mAmps |
| Isolation Voltage from case to lugs | V_{ISO} | 2500 | | | | | | | V_{AC} |
| Typical Thermal Resistance (Note 1,2) | $R_{\theta JC}$ | 2.0 | | | | | | | $^\circ\text{C}/\text{W}$ |
| Operating Temperature Range | T_J | -55 to +150 | | | | | | | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -55 to +150 | | | | | | | $^\circ\text{C}$ |

NOTES:

1. Unit mounted on 5"×6"×4.9" (12.8×15.2×12.4mm) Al. finned plate.
2. Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer efficiency with #10 screw.



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RATINGS AND CHARACTERISTIC CURVES MB2505 THRU MB2510

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

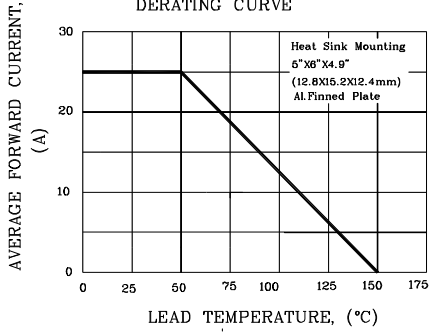


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

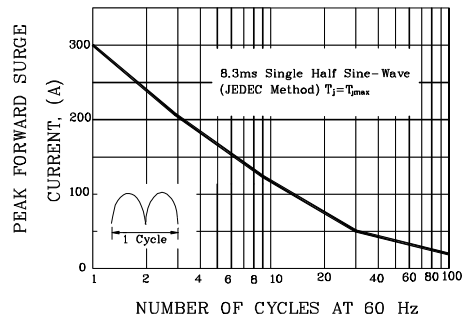


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

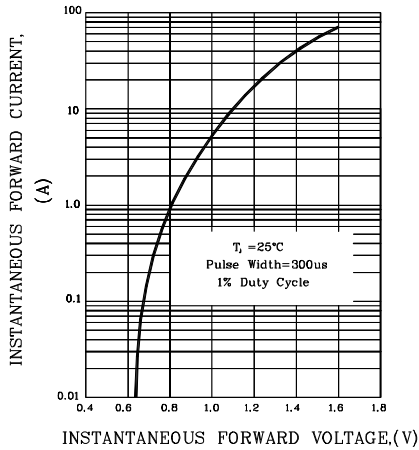


FIG.4-TYPICAL REVERSE CHARACTERISTICS

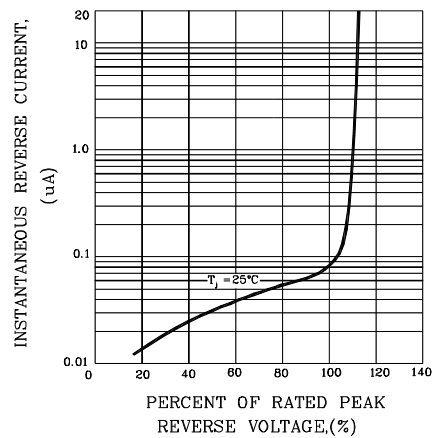


FIG.5-TYPICAL JUNCTION CAPACITANCE

