



**DC COMPONENTS CO., LTD.**

**RECTIFIER SPECIALISTS**

KBPC / MB  
15005 / 1505

THRU

KBPC / MB  
1510 / 1510

## TECHNICAL SPECIFICATIONS OF SINGLE-PHASE SILICON BRIDGE RECTIFIER

VOLTAGE RANGE - 50 to 1000 Volts

CURRENT - 15 Amperes

### FEATURES

- \* Metal case for Maximum Heat Dissipation
- \* Surge overload ratings-300 Amperes
- \* Low forward voltage drop

### MECHANICAL DATA

- \* Case: Metal case, electrically isolated
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Plated .25"(6.35mm) Faston lugs, Solderable per MIL-STD-202E, Method 208 guaranteed
- \* Polarity: As marked
- \* Mounting position: Any
- \* Weight: 30 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

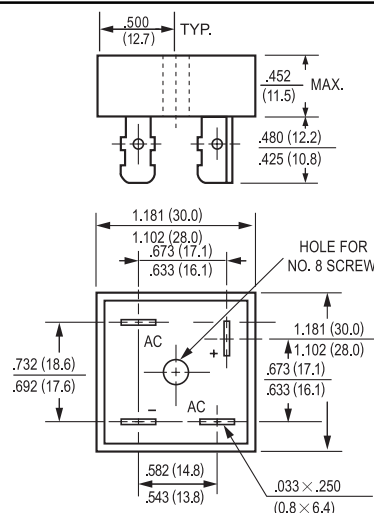
Ratings at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%.



MB-25



Dimensions in inches and (millimeters)

|                                                                                                   |                  | KBPC<br>15005  | KBPC<br>1501 | KBPC<br>1502 | KBPC<br>1504 | KBPC<br>1506 | KBPC<br>1508 | KBPC<br>1510 |                    |       |
|---------------------------------------------------------------------------------------------------|------------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------------|-------|
|                                                                                                   | SYMBOL           | MB1505         | MB151        | MB152        | MB154        | MB156        | MB158        | MB1510       | UNITS              |       |
| Maximum Recurrent Peak Reverse Voltage                                                            | V <sub>RRM</sub> | 50             | 100          | 200          | 400          | 600          | 800          | 1000         | Volts              |       |
| Maximum RMS Bridge Input 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 Tc = 55°C                                     | I <sub>O</sub>   | 15.0           |              |              |              |              |              |              | Amps               |       |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | I <sub>FSM</sub> | 300            |              |              |              |              |              |              | Amps               |       |
| Maximum Forward Voltage Drop per element at 7.5A DC                                               | V <sub>F</sub>   | 1.1            |              |              |              |              |              |              | Volts              |       |
| Maximum DC Reverse Current at Rated                                                               | @ Ta = 25°C      | I <sub>R</sub> | 10           |              |              |              |              |              |                    | uAmps |
| DC Blocking Voltage per element                                                                   | @ Tc = 100°C     |                | 500          |              |              |              |              |              |                    |       |
| I <sup>2</sup> t Rating for Fusing (t<8.3ms)                                                      | I <sup>2</sup> t | 374            |              |              |              |              |              |              | A <sup>2</sup> Sec |       |
| Typical Junction Capacitance ( Note1)                                                             | C <sub>J</sub>   | 40             |              |              |              |              |              |              | pF                 |       |
| Typical Thermal Resistance (Note 2)                                                               | RθJA             | 19             |              |              |              |              |              |              | °C/W               |       |
| Operating and Storage Temperature Range                                                           | TJ,TSTG          | -55 to + 175   |              |              |              |              |              |              | °C                 |       |

NOTES : 1. Measured at 1 MHz and applied reverse voltage of 4.0 volts

2. Thermal Resistance from Junction to Ambient and from junction to lead mounted on P.C.B. with 0.47 x 0.47" (12x12mm) copper pads.

Diode, Bridge  
**INDEX 1**  
Rectifiers

Diode, Bridge  
**INDEX 2**  
Rectifiers

Transistors,  
**INDEX 1**  
SCR, I.C

Transistors,  
**INDEX 2**  
SCR, I.C



# RATING AND CHARACTERISTIC CURVES ( KBPC15005 MB1505 THRU KBPC1510 MB1510 )

FIG. 1 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

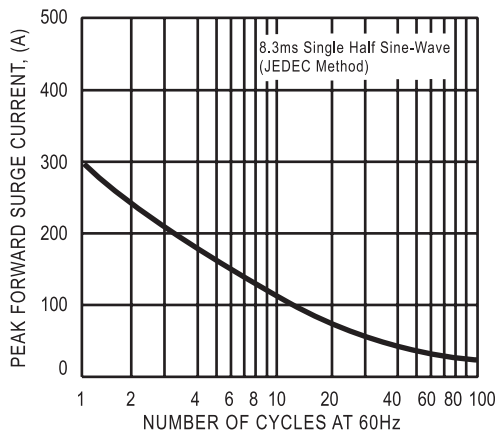


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

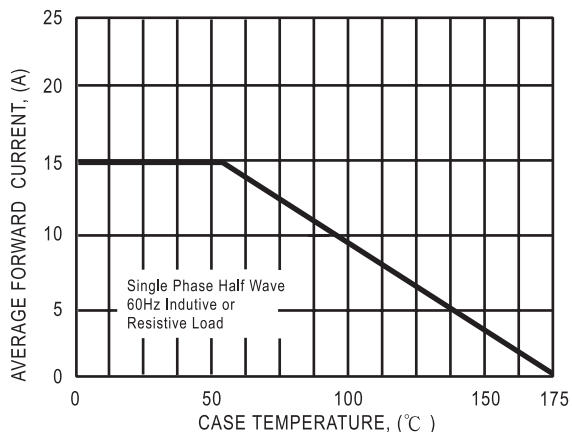


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

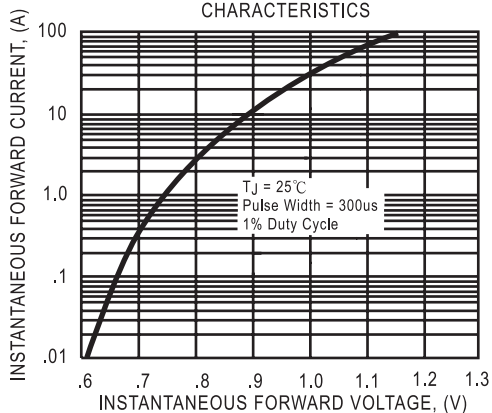
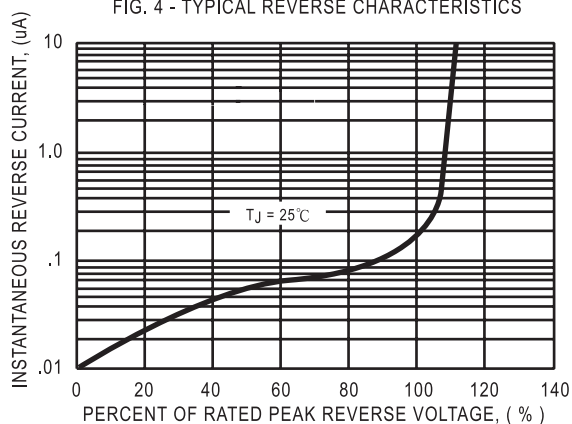


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS



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## RECTIFIER SPECIALISTS

KBPC / MB  
15005W / 1505W  
THRU  
KBPC / MB  
1510W / 1510W

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VOLTAGE RANGE - 50 to 1000 Volts

CURRENT - 15 Amperes

#### FEATURES

- \* Metal case for Maximum Heat Dissipation
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- \* Low forward voltage drop

#### MECHANICAL DATA

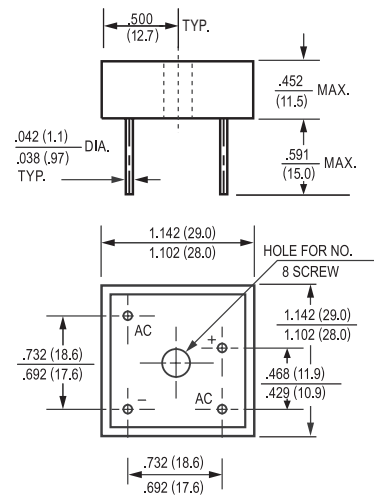
- \* Case: Metal, electrically isolated
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Polarity: As marked
- \* Mounting position: Any
- \* Weight: 30 grams

#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.



MB-25W



Dimensions in inches and (millimeters)

|                                                                                                      |                                   | KBPC<br>15005W | KBPC<br>1501W | KBPC<br>1502W | KBPC<br>1504W | KBPC<br>1506W | KBPC<br>1508W | KBPC<br>1510W |                    |       |
|------------------------------------------------------------------------------------------------------|-----------------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|-------|
|                                                                                                      | SYMBOL                            | MB1505W        | MB151W        | MB152W        | MB154W        | MB156W        | MB158W        | MB1510W       | UNITS              |       |
| Maximum Recurrent Peak Reverse Voltage                                                               | V <sub>RRM</sub>                  | 50             | 100           | 200           | 400           | 600           | 800           | 1000          | Volts              |       |
| Maximum RMS Bridge Input 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> = 55°C                            | I <sub>O</sub>                    | 15             |               |               |               |               |               |               | Amps               |       |
| Peak Forward Surge Current 8.3 ms single half sine-wave<br>superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                  | 300            |               |               |               |               |               |               | Amps               |       |
| Maximum Forward Voltage Drop per element at 7.5A DC                                                  | V <sub>F</sub>                    | 1.1            |               |               |               |               |               |               | Volts              |       |
| Maximum DC Reverse Current at Rated                                                                  | @ T <sub>A</sub> = 25°C           | I <sub>R</sub> | 10            |               |               |               |               |               |                    | uAmps |
| DC Blocking Voltage per element                                                                      | @ T <sub>A</sub> = 100°C          |                | 500           |               |               |               |               |               |                    |       |
| I <sup>2</sup> t Rating for Fusing (t<8.3ms)                                                         | I <sup>2</sup> t                  | 374            |               |               |               |               |               |               | A <sup>2</sup> Sec |       |
| Typical Junction Capacitance ( Note1)                                                                | C <sub>J</sub>                    | 300            |               |               |               |               |               |               | pF                 |       |
| Typical Thermal Resistance (Note 2)                                                                  | R <sub>θ</sub> JC                 | 2.5            |               |               |               |               |               |               | °C/W               |       |
| Operating and Storage Temperature Range                                                              | T <sub>J</sub> , T <sub>STG</sub> | -55 to + 150   |               |               |               |               |               |               | °C                 |       |

NOTES : 1. Measured at 1 MHz and applied reverse voltage of 4.0 volts  
2. Thermal Resistance from Junction to Case per leg.

# RATING AND CHARACTERISTIC CURVES ( KBPC15005W MB1505W THRU KBPC1510W MB1510W )

FIG. 1 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

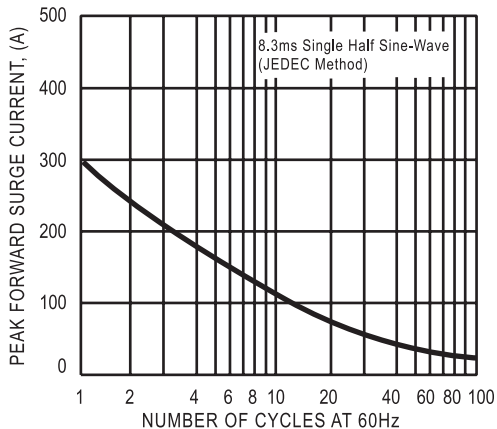


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

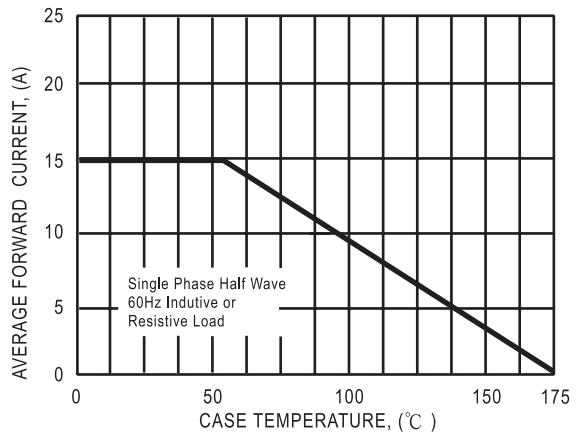


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

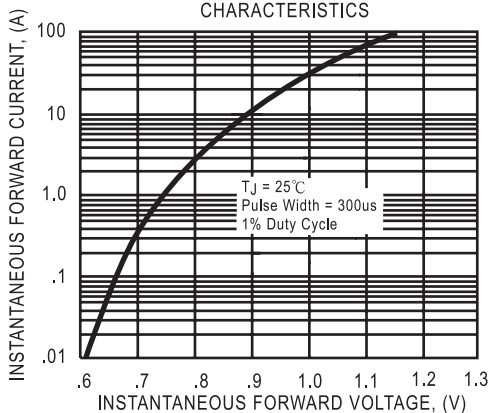
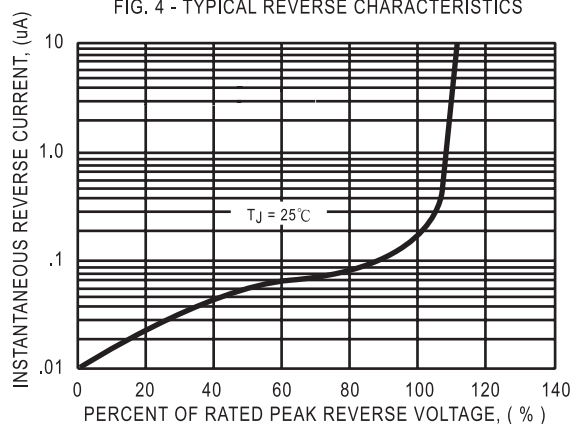


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS



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