



# KMB12S THRU KMB125S

## SINGLE PHASE 1.0 AMP SURFACE MOUNT SCHOTTKY BRIDGE RECTIFIER

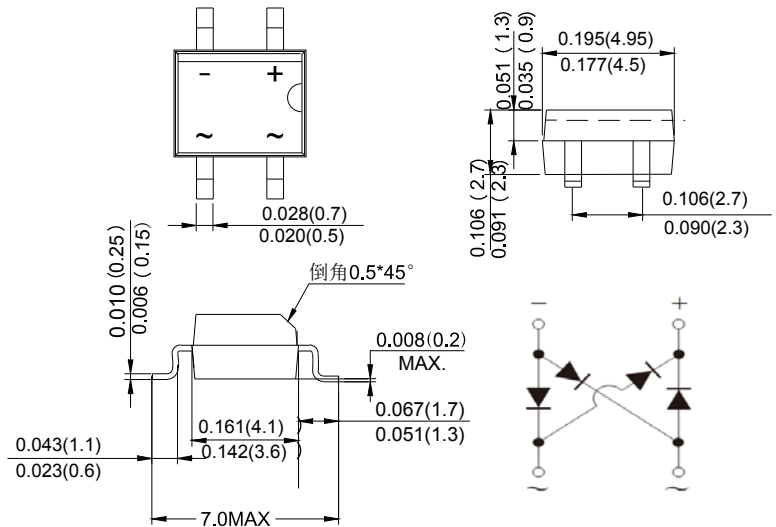
### Features

- Schottky Brrier Chip
- Low Power Loss,High Efficiency
- Ideally Suited for Automatic Assembly
- Surge Overload Rating to 30A Peak
- Plastic Case Material has UL Flammability Classification Rating 94V-0

### Mechanical Data

- Case: MB-S, molded plastic
- Terminals: plated leads solderable per MIL-STD-202, Method 208
- Polarity: as marked on case
- Mounting position: Any
- Marking: type number
- Lead Free: For RoHS / Lead Free Version,

### MBS



dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Single Phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| TYPE NUMBER   | SYMBOL          | KMB 12S     | KMB 13S | KMB 14S | KMB 145S | KMB 15S | KMB 16S | KMB 18S | KMB 110S | KMB 115S | KMB 120S | KMB 125S | UNITS                |    |
|---|-----------------|-------------|---------|---------|----------|---------|---------|---------|----------|----------|----------|----------|----------------------|----|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$       | 20          | 30      | 40      | 45       | 50      | 60      | 80      | 100      | 150      | 200      | 250      |                      |    |
| RMS Reverse Voltage   | $V_{R(RMS)}$    | 14          | 21      | 28      | 31       | 35      | 42      | 56      | 70       | 105      | 140      | 175      | V                    |    |
| DC Blocking Voltage   | $V_{DC}$        | 20          | 30      | 40      | 45       | 50      | 60      | 80      | 100      | 150      | 200      | 250      |                      |    |
| Average Rectified Output Current ( Note1) @ $T_C = 100^{\circ}\text{C}$   | $I_F(AV)$       | 1.0         |         |         |          |         |         |         |          |          |          |          | A                    |    |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$       | 30          |         |         |          |         |         |         |          |          |          |          | A                    |    |
| $I^2t$ Rating for Fusing ( $t < 8.3\text{ms}$ )   | $I^2t$          | 3.735       |         |         |          |         |         |         |          |          |          |          | $\text{A}^2\text{s}$ |    |
| Forward Voltage per element @ $I_F = 1.0\text{AV}$  | $V_{FM}$        | 0.55        |         |         | 0.7      |         |         | 0.85    |          | 0.90     |          | 0.92     | V                    |    |
| Peak Reverse Current @ $T_A = 25^{\circ}\text{C}$<br>At Rated DC Blocking Voltage @ $T_A = 100^{\circ}\text{C}$ | $I_{RM}$        | 0.1         |         |         |          |         |         | 0.05    |          |          |          |          |                      | mA |
|   |                 | 10          |         |         |          |         |         | 5       |          |          |          |          |                      |    |
| Typical Junction Capacitance per leg  | $C_j$           | 28          |         |         |          |         |         |         |          |          |          |          | pF                   |    |
| Typical Thermal Resistance per leg ( Note2)   | $R_{\theta JL}$ | 16          |         |         |          |         |         |         |          |          |          |          | $^{\circ}\text{C/W}$ |    |
| Operating junction temperature range  | $T_J$           | -55 to +150 |         |         |          |         |         |         |          |          |          |          | $^{\circ}\text{C}$   |    |
| Operating and Storage Temperature Range   | $T_{STG}$       | -55 to +150 |         |         |          |         |         |         |          |          |          |          | $^{\circ}\text{C}$   |    |

### Note:

1. Mounted on aluminum substrate PC board with  $1.3\text{mm}^2$  solder pad.
2. Thermal Resistance From Junction to LEAD



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FIG. 1- FORWARD CURRENT DERATING CURVE

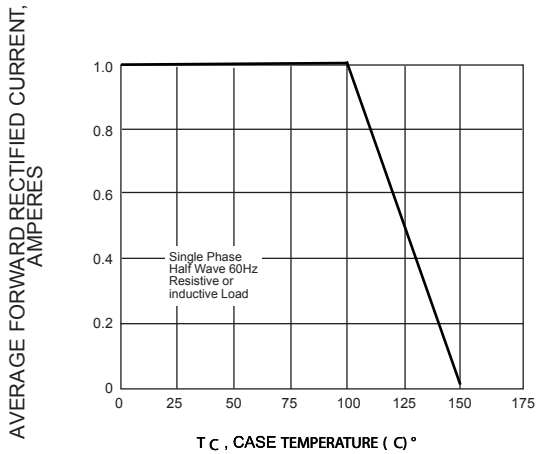


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

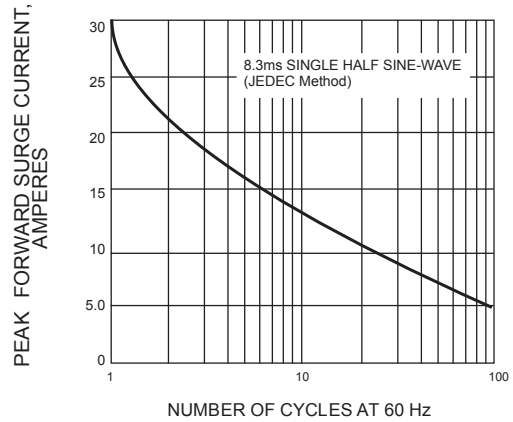


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

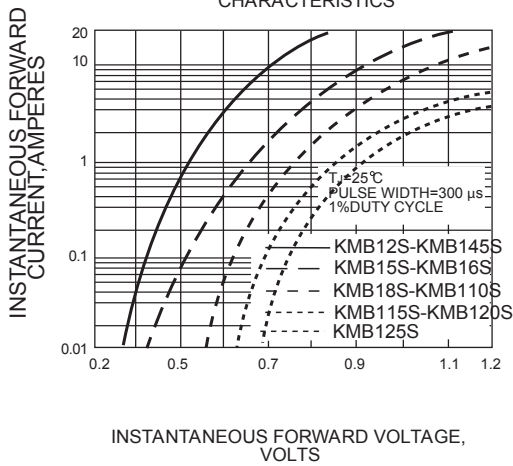


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

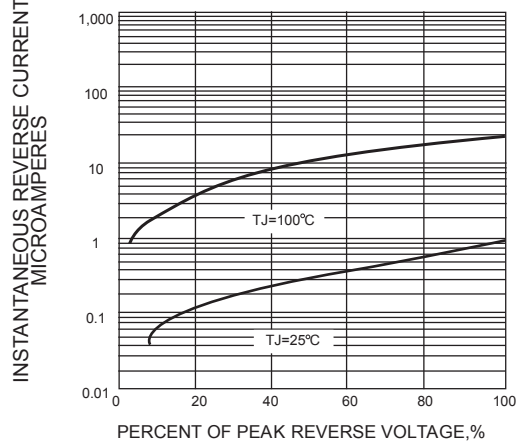


FIG.6 MOUNTING PAD LAYOUT

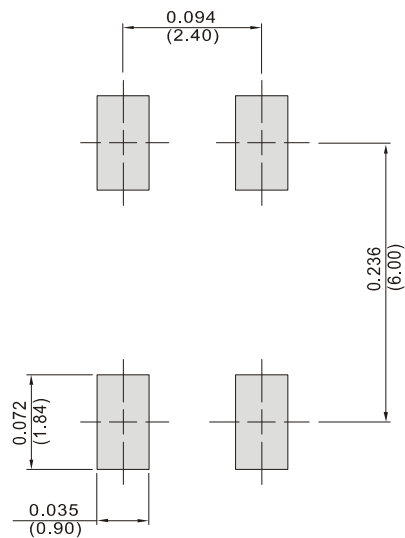


FIG. 5-TYPICAL TRANSIENT THERMAL IMPEDANCE

