# UMB1F THRU UMB10F

## SINGLE PHASE ULTRA FAST BRIDGE RECTIFIERS

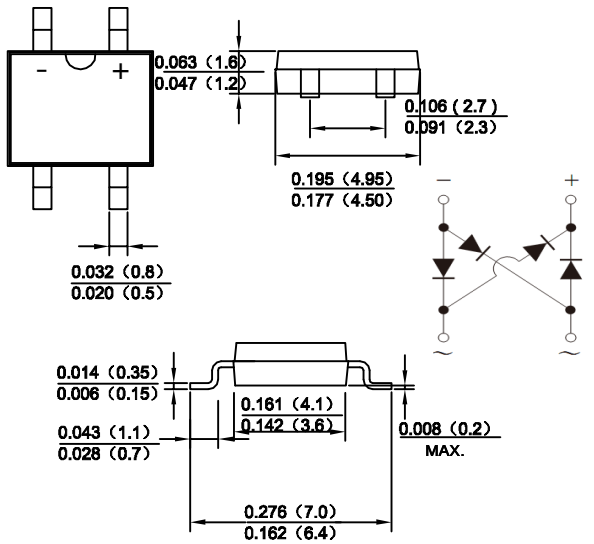
### Features

- Glass Passivated Die Construction
- Low leakage
- Ideal for printed circuit board
- Surge overload rating-30A peak
- Designed for Surface Mount Application
- Plastic Material-UL Flammability 94V-0

### Mechanical Data

- Case: MB-F, 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,

**MBF**




dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified.
Single Phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| TYPE NUMBER | SYMBOL | UMB1F | UMB2F | UMB4F | UMB6F | UMB8F | UMB10F | UNITS |
|---|---|---|---|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_{DC}$ | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| RMS Reverse Voltage | $V_{RMS}$ | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Average Rectified Output Current (Note 1)@$T_C$=100℃<br>(Note 2)@$T_C$=100℃ | IF(AV) | 0.5<br>0.8 | | | | | | 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 < 8.3ms) | $I^2t$ | 3.735 | | | | | | $A^2s$ |
| Forward Voltage per element @IF=1.0A | $V_{FM}$ | 1.0 | | 1.3 | 1.7 | | | V |
| Peak Reverse Current @$T_A$=25℃<br>At Rated DC Blocking Voltage @$T_A$=125℃ | $I_R$ | 5.0<br>200 | | | | | | uA |
| Maximum reverse recovery time (Note 3) | $T_{RR}$ | 50 | | | 75 | | | ns |
| Typical Junction Capacitance per leg (Note4) | $C_J$ | 13 | | | | | | pF |
| Typical Thermal Resistance per leg | $R_{\theta JA}$<br>$R_{\theta JL}$ | 60<br>16 | | | | | | ℃/W |
| Operating and Storage Temperature Range | $T_J$,$T_{STG}$ | -55to+150 | | | | | | ℃ |

Note:1. Mounted on glass epoxy PC board with 1.3mm$^2$ solder pad.
2. Mounted on aluminum substrate PC board with 1.3mm$^2$ solder pad.
3. Reverse Recovery Test Conditions: $I_F$=0.5A, $I_R$=1.0A, $I_{RR}$=0.25A
4. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.

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Fig 1 Output Current Derating Curve

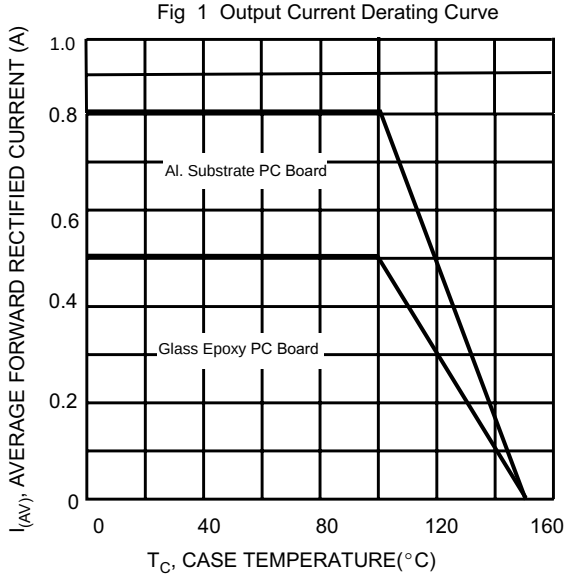



Fig. 2 Typical Forward Characteristics (per leg)

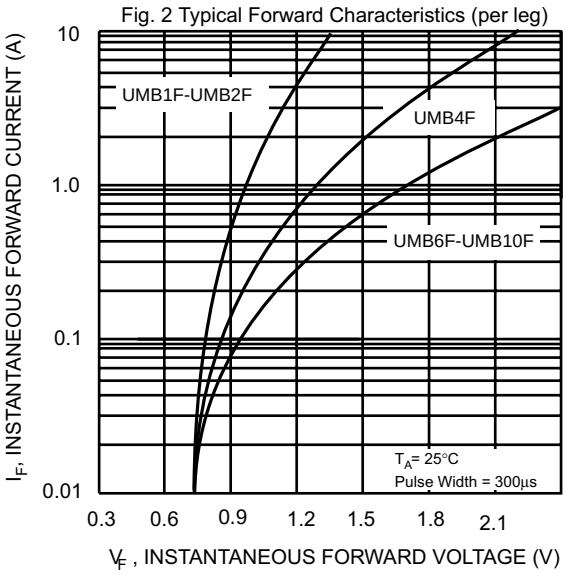



Fig. 3 Maximum Peak Forward Surge Current (per leg)

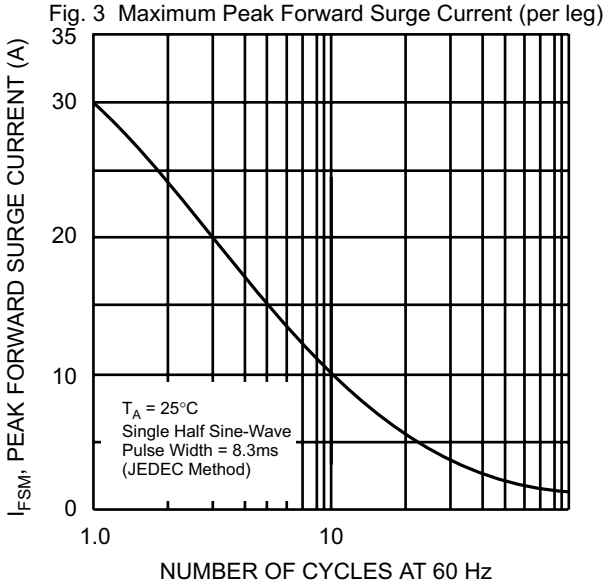



Fig. 4 Typical Junction Capacitance

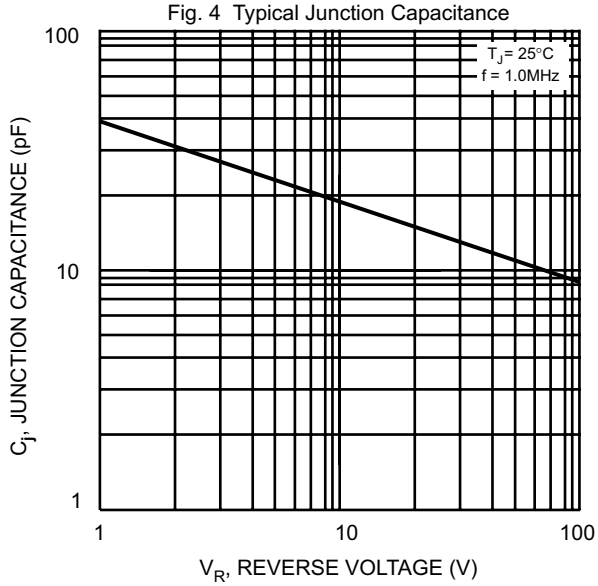



FIG.5 TYPICAL REVERSE CHRACTERISTICS

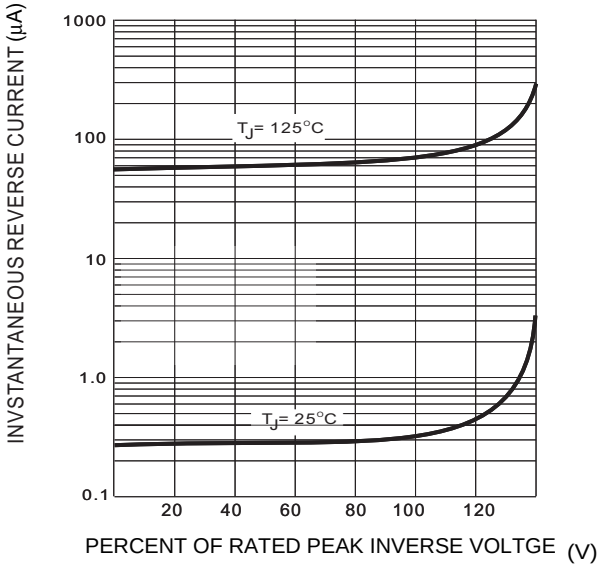
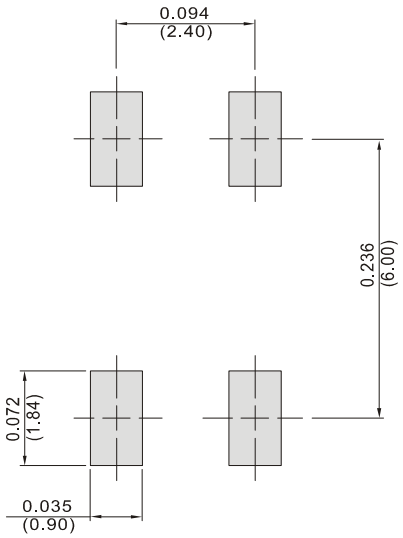



FIG.6 MOUNTING PAD LAYOUT



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