Surface mounted fast switch complete bridge

# RMB01F THRU RMB10F

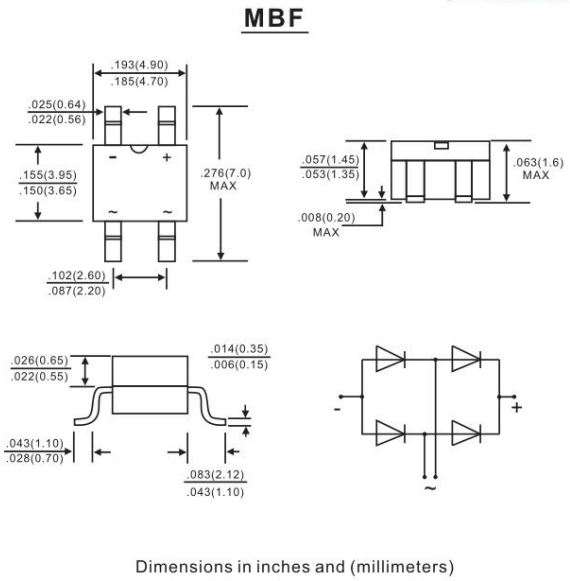
VOLTAGE RANGE 50 to 1000 Volts

CURRENT 1.0 Ampere

RoHS COMPLIANT

## Features

- Glass passivated chip:50mil
- Glass passivated chip junction
- Ideal for surface mounted applications
- Low leakage
- High forward surge current capability
- High temperature soldering guaranteed:260℃/10 seconds at terminals




Dimensions in inches and (millimeters)

## Mechanical Data

- Case: Molded plastic body
- Epoxy: UL94V-0 rate flame retardant
- Polarity: Molded on body
- LeadP: Plated terminals solderable per MIL-STD-202E method 208C
- Weight: 0.004 ounce, 0. 12 gram

## Maximum Ratings and Electrical Characteristics

- Ratings 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 | | SYMBOLS | RMB 01F | RMB 02F | RMB 03F | RMB 04F | RMB 06F | RMB 08F | RMB 10F | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Reverse Peak Repetitive 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, 0.06"(1.5mm) lead length at $T_A$=100℃ | | $I_{(AV)}$ | 1.0 | | | | | | | Amps |
| Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC Method) | | $I_{FSM}$ | 30 | | | | | | | Amps |
| Rating for Fusing (t < 8.3ms) | | $I^2t$ | 3.7 | | | | | | | $A^2s$ |
| Maximum Instantaneous Forward Voltage drop Per Bridge element 1.0A | | $V_F$ | 1.3 | | | | | | | Volts |
| Maximum Reverse Current at rated DC blocking voltage per element | $T_A$=25℃ | $I_R$ | 5 | | | | | | | μAmps |
| | $T_A$=125℃ | | 120 | | | | | | | |
| Maximum Reverse Recovery Time (Note 3) $T_J$=25℃ | | $T_{RR}$ | 150 | | | | 250 | 500 | | 250 |
| Typical Junction Capacitance (NOTE 1) | | $C_J$ | 13 | | | | | | | pF |
| Typical Thermal Resistance (NOTE 2) | | $R_{\Theta JA}$ | 80 | | | | | | | ℃/W |
| Operating and Storage Temperature Range | | $T_J$ ,$T_{STG}$ | -55 to +150 | | | | | | | ℃ |

Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Unit mounted on P.C.B. with 0.033"×0.043"(1.00mm×1.30mm) copper pads.
3. Reverse Recovery Test Conditions:If=0.5mA,Ir=1.0mA,Irr=0.25A.

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## Ratings and Characteristic Curves ($T_A$=25℃ unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

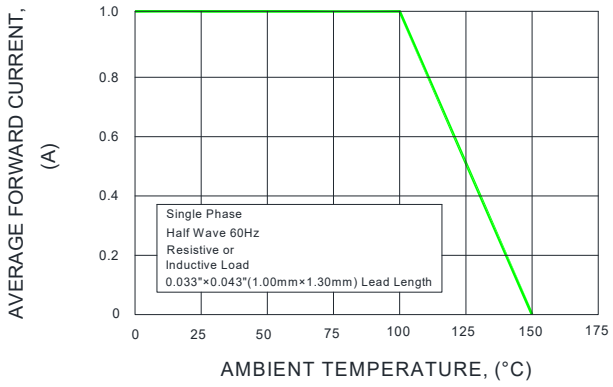



FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

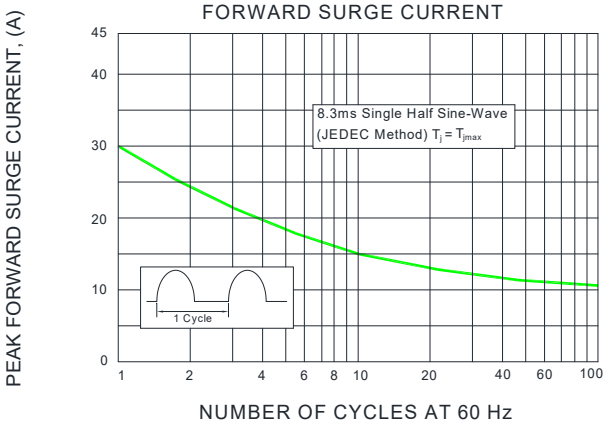



FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

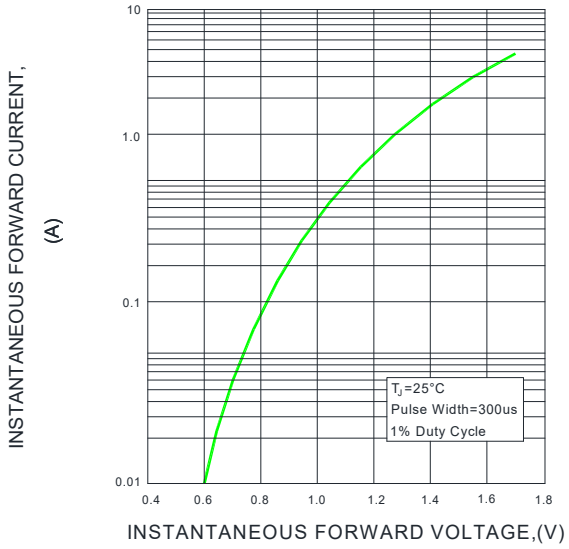



FIG.4-TYPICAL REVERSE CHARACTERISTICS

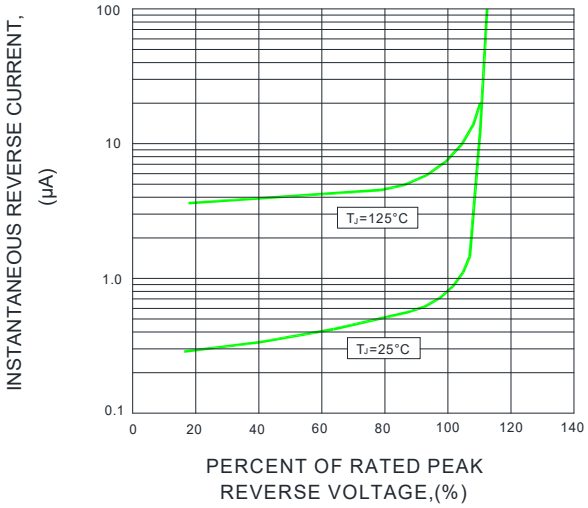
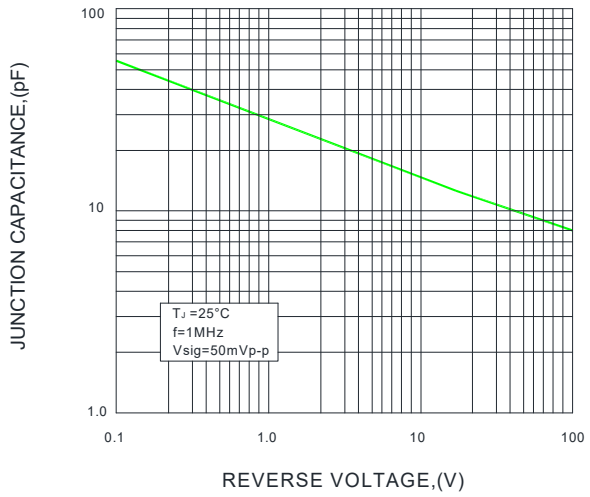
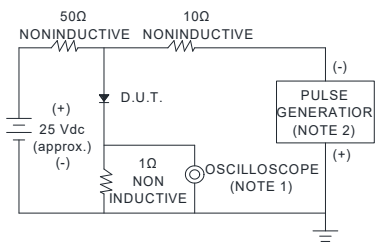
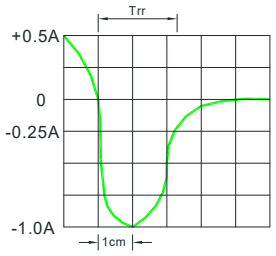



FIG.5-TYPICAL JUNCTION CAPACITANCE




F1G.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC




SET TIME BASE FOR 50/100ns/cm

NOTES : 1.Rise Time=7ns max. Input Impedance= 1 magohm. 22pF
2.Rise time=10ns max. Source Impedance= 50 ohms

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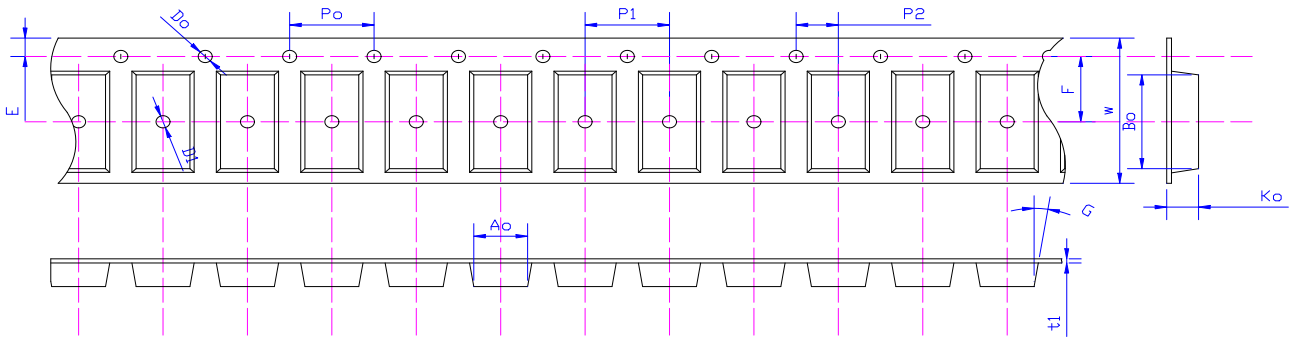
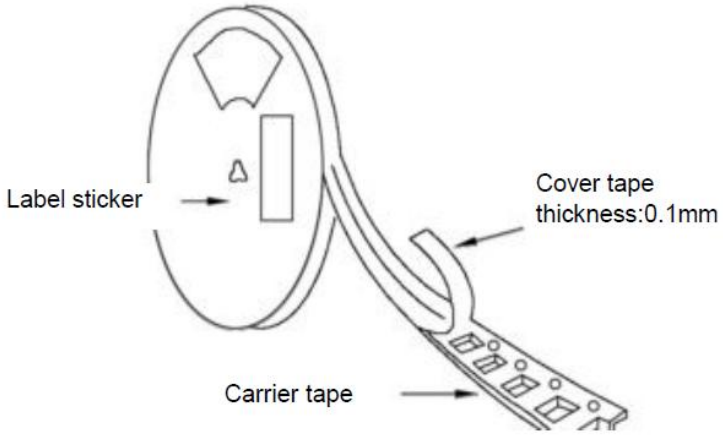
## Package Reel Information




| Specifications | Ao | Bo | Ko | Po | W | t1 |
|---|---|---|---|---|---|---|
| MBF | 5.05±0.10 | 7.10±0.10 | 1.65±0.10 | 4.00±0.1 | 12.0±0.10 | 0.30±0.02 |




| DEVICE TYPE | Tape Width | 13"Reel | | | 07"Reel | | | |
|---|---|---|---|---|---|---|---|---|
| | | Q'TY/REEL(pcs) | BOX/CARTOON | Q'TY/CARTON (pcs) | Q'TY/REEL(pcs) | REEL/BOX | BOX/CARTOON | Q'TY/CARTON (pcs) |
| MBF | 13mm | 5000 | 8 | 80000 | NA | NA | NA | NA |

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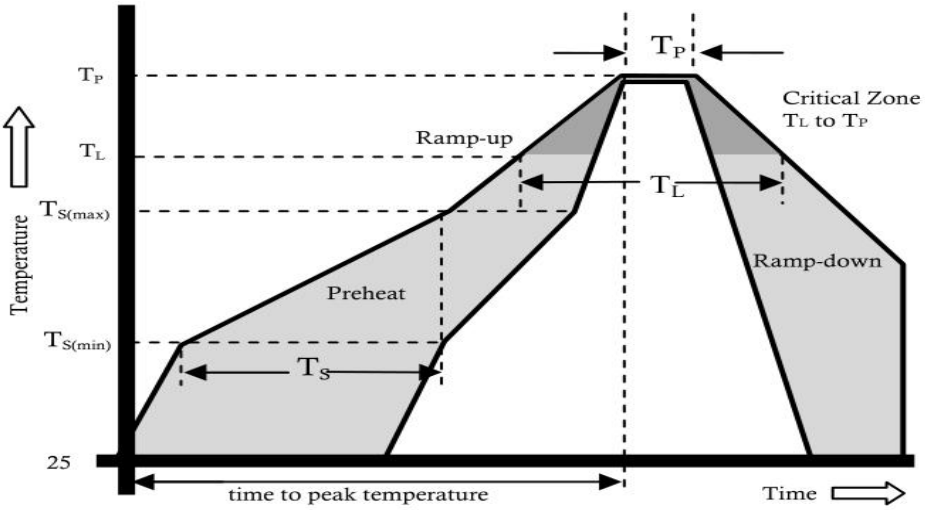
## Reflow Profile




| Reflow Condition | | Pb-Free Assembly |
|---|---|---|
| Pre Heat | Temperature Min. | +150°C |
| | Temperature Max. | +200°C |
| | Time(Min to Max) | 60-180 secs. |
| Average ramp up rate(Liquidus Temp($T_L$) to peak) | | 3°C/sec. Max. |
| $T_S$(max) to $T_L$ - Ramp-up Rate | | 3°C/sec. Max. |
| Reflow | Temperature ($T_L$)(Liquidus) | +217°C |
| | Temperature ($T_L$) | 60-150 secs. |
| Peak Temp ($T_P$) | | +(260+0/-5 )°C |
| Time within 5°C of actual Peak Temp ($T_P$) | | 25 secs. |
| Ramp-down Rate | | 6°C/sec. Max. |
| Time 25°C to peak Temp ($T_P$) | | 8 min. Max. |
| Do not exceed | | +260°C |

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