



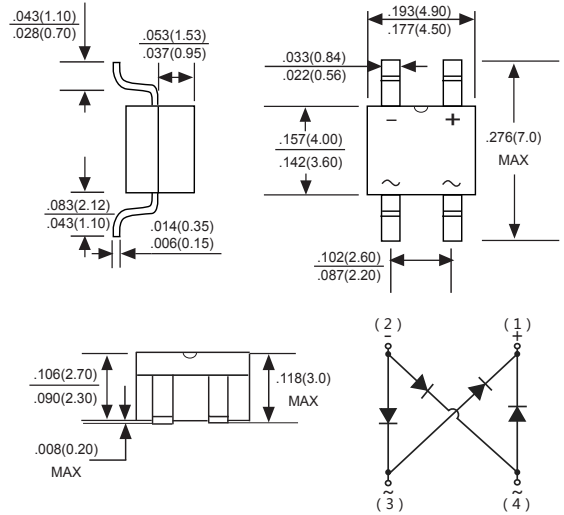
# UMB1S THRU UMB10S

Voltage Range - 100 to 1000 V olts Current - 1.0 Ampere

## GLASS PASSIVATED ULTRA FAST RECOVERY BRIDGE RECTIFIERS

### Features

- ◆ Glass Passivated Chip Junction
- ◆ Reverse Voltage - 100 to 1000 V
- ◆ Forward Current - 1.0 A
- ◆ Fast reverse recovery time
- ◆ Designed for Surface Mount Application



### Mechanical Data

**Case :** JEDEC MBS Molded plastic body  
**Terminals :** Solder plated, solderable per MIL-STD-750, Method 2026  
**Polarity :** Polarity symbol marking on body  
**Mounting Position :** Any  
**Weight :** 0.0035 ounce, 0.1 grams

Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

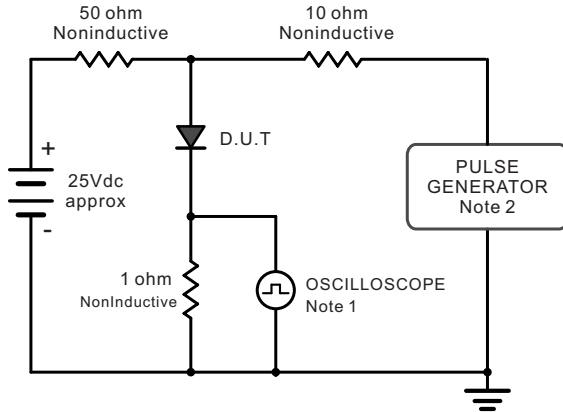
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| Parameter   | SYMBOLS                            | MDD UMB1S   | MDD UMB2S | MDD UMB4S | MDD UMB6S | MDD UMB8S | MDD UMB10S | UNITS        |
|---|------------------------------------|-------------|-----------|-----------|-----------|-----------|------------|--------------|
| Marking Code  |                                    |             |           |           |           |           |            |              |
| Maximum repetitive peak reverse voltage   | $V_{RRM}$                          | 100         | 200       | 400       | 600       | 800       | 1000       | V            |
| Maximum RMS voltage   | $V_{RMS}$                          | 70          | 140       | 280       | 420       | 560       | 700        | V            |
| Maximum DC blocking voltage   | $V_{DC}$                           | 100         | 200       | 400       | 600       | 800       | 1000       | V            |
| Average Rectified Output Current at $T_c = 125^\circ C$   | $I_{F(AV)}$                        | 1.0         |           |           |           |           |            | A            |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$                          | 35          |           |           |           |           |            | A            |
| Maximum instantaneous forward voltage drop per leg at 1.0A  | $V_F$                              | 1.0         | 1.3       | 1.5       |           |           | V          |              |
| Maximum DC reverse current at rated DC blocking voltage   | $I_R$                              | 5<br>100    |           |           |           |           |            | $\mu A$      |
| Typical Junction Capacitance (NOTE 1)   | $C_J$                              | 18          |           |           |           |           |            | pF           |
| Maximum reverse recovery time (NOTE 3)  | $t_{rr}$                           | 50          |           |           | 75        |           |            | ns           |
| Typical thermal resistance (NOTE 2)   | $R_{\theta JA}$<br>$R_{\theta JC}$ | 80<br>30    |           |           |           |           |            | $^\circ C/W$ |
| Operating temperature range   | $T_J$                              | -55 to +150 |           |           |           |           |            | $^\circ C$   |
| storage temperature range   | $T_{STG}$                          | -55 to +150 |           |           |           |           |            | $^\circ C$   |

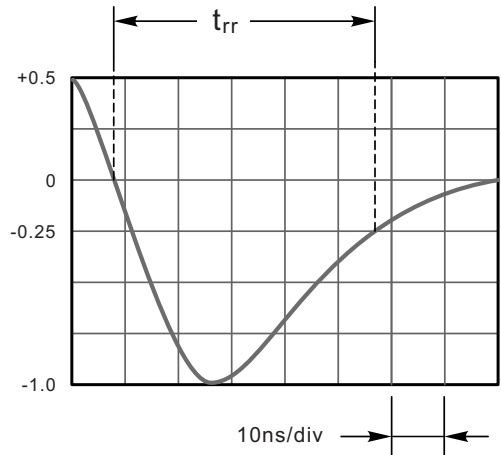
NOTES: 1. Measured at 1MHz and applied reverse voltage of 4 V D.C..  
 2. Mounted on glass epoxy PC board with 4x1.5"x1.5" (3.81x3.81 cm) copper pad.  
 3. Reverse recovery condition  $I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$ .

## Ratings And Characteristic Curves

**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**

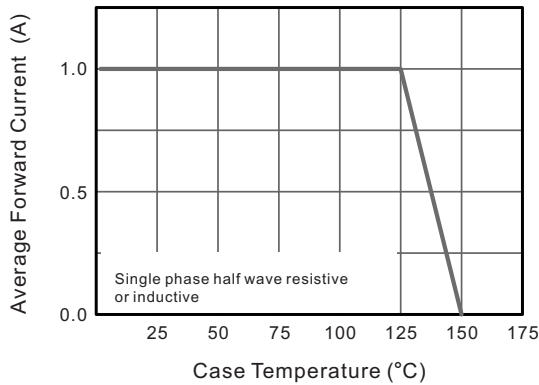


Note: 1. Rise Time = 7ns, max.  
 Input Impedance = 1megohm, 22pF.  
 2. Fall Time = 10ns, max.  
 Source Impedance = 50 ohms.

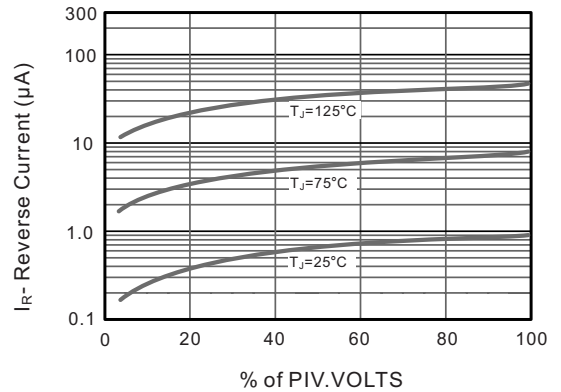


Set time Base for 10ns/div

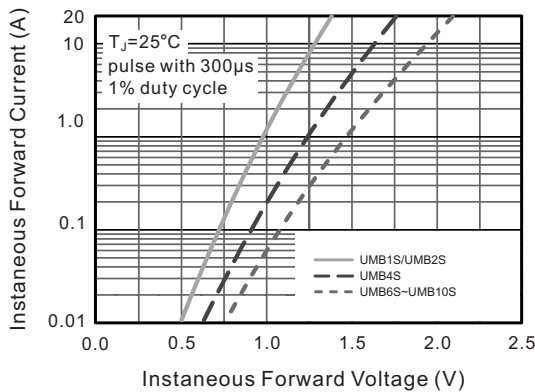
**Fig.2 Maximum Average Forward Current Rating**



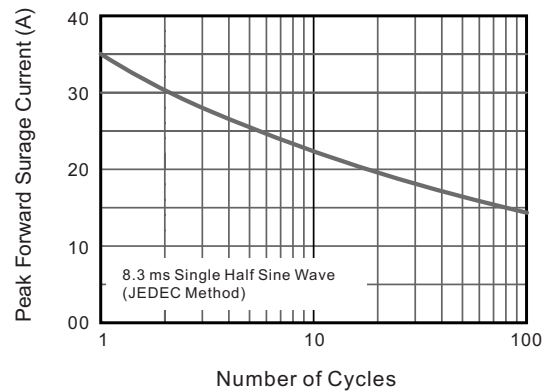
**Fig.3 Typical Reverse Characteristics**



**Fig.3 Typical Instaneous Forward Characteristics**



**Fig.4 Maximum Non-Repetitive Peak Forward Surge Current**



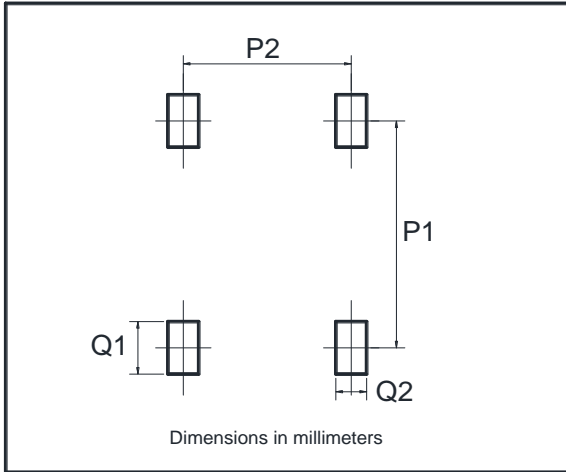
The curve above is for reference only.



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## Suggested Pad Layout



| Dim | Min  |
|-----|------|
| P1  | 6.00 |
| P2  | 2.40 |
| Q1  | 1.84 |
| Q2  | 1.20 |