



# UMB05F~UMB10F

## Ultra Miniature Glass Passivated Single-Phase Surface Mount Flat Bridge Rectifier

### Features

- Low profile space
- Ideal for automated placement
- Glass passivated chip junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering:  
260°C/10 seconds at terminals
- Component in accordance to  
RoHS 2002/95/1 and WEEE 2002/96/EC



SOF2-4

### Mechanical Date

- **Case:** SOF2-4 Molded plastic over glass passivated chip
- **Terminals:** Solder plated, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** Polarity symbols marked on body

### Major Ratings and Characteristics

$I_{F(AV)}$	0.5 A, 0.8 A
$V_{RRM}$	50V to 1000V
$I_{FSM}$	20 A
$I_R$	5.0 $\mu$ A
$V_F$	1.1 V
$T_j$ max.	150 °C

### Maximum Ratings & Thermal Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Items	Symbol	UMB 05F	UMB 1F	UMB 2F	UMB 4F	UMB 6F	UMB 8F	UMB 10F	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at $T_A=30^\circ\text{C}$ -on glass-epoxy P.C.B. <sup>(1)</sup> -on aluminum substrate <sup>(2)</sup>	$I_{F(AV)}$	0.5 0.8							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	20							A
Thermal resistance from junction to ambient per leg	$R_{\theta JA}^{(1)}$ $R_{\theta JA}^{(2)}$	100 80							$^\circ\text{C/W}$
Thermal resistance from junction to lead per leg <sup>(1)</sup>	$R_{\theta JL}$	30							$^\circ\text{C/W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150							$^\circ\text{C}$

Note 1: On glass epoxy P.C.B. mounted on 0.06×0.04" (1.5×1.1mm) pads

Note 2: On aluminum substrate P.C.B. with an area of 0.8×0.8" (20×20mm) mounted on 0.06×0.04" (1.5×1.1mm) solder pad

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Items	Test conditions	Symbol	Min	Type	Max	UNIT
Instantaneous forward voltage per leg	$I_F=0.4A^{(3)}$	$V_F$	-	0.96	1.10	V
Reverse current per leg	$V_R=V_{DC}$ $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	$I_R$	-	-	5 100	$\mu$ A

Note 3: Pulse test:300 $\mu$ s pulse width,1% duty cycle.

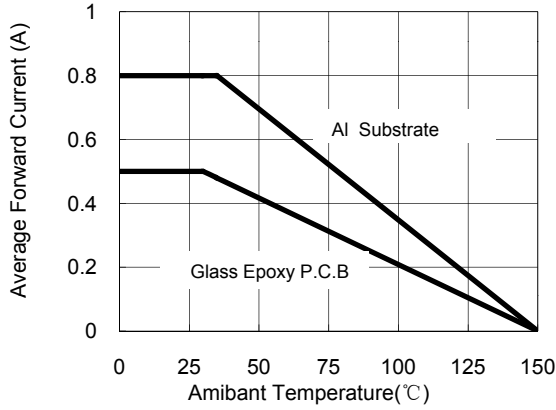


# UMB05F~UMB10F

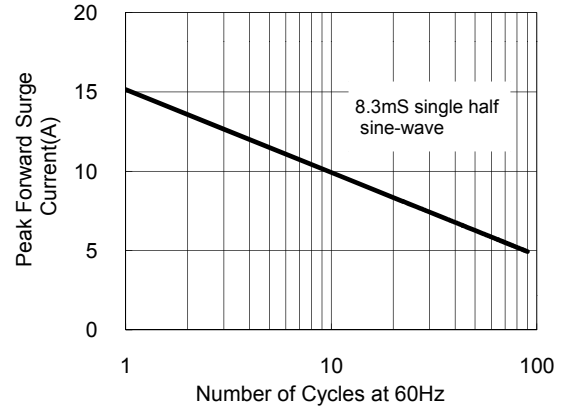
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### Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

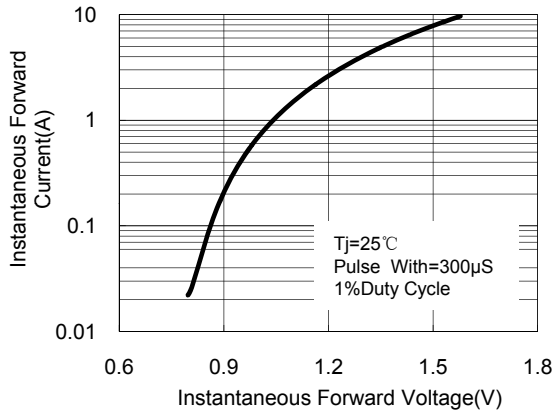
**Fig.1 Forward Current Derating Curve**



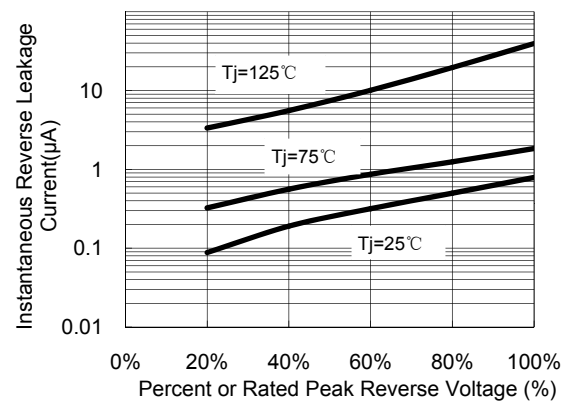
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



**Fig.3 Typical Instantaneous Forward Characteristics**



**Fig.4 Typical Reverse Leakage Characteristics**



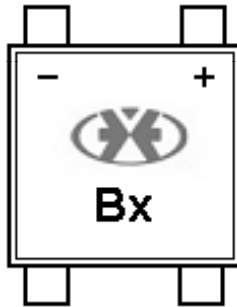


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### Marking

Design 1




Design 2



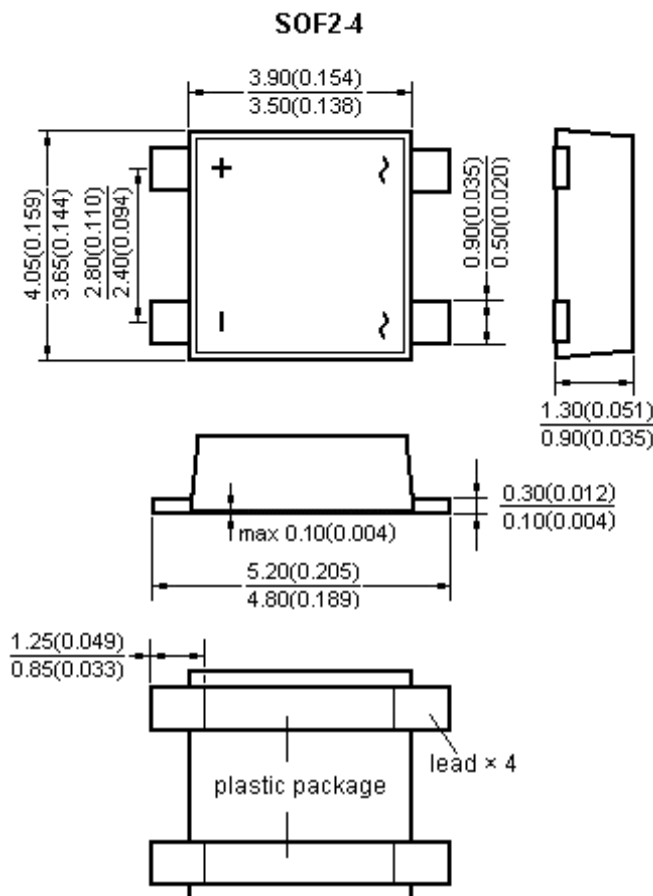
Annotation of Marking Code:

Device Type	Device Marking
UMB05F	B1
UMB1F	B2
UMB2F	B3
UMB4F	B4
UMB6F	B5
UMB8F	B6
UMB10F	B7

### Marking meaning

-  = Trademark
- Bx = Marking Code, x = 1,2,3, ..., 7. See the table at the right.
- An = Suppliers' Code. It's default as a general rule, like Design 1.

### Package Outline



### Soldering Pad

