

## TMBFR310

### SINGLE PHASE 3.0AMPS. GLASS PASSIVATED FAST BRIDGE RECTIFIERS

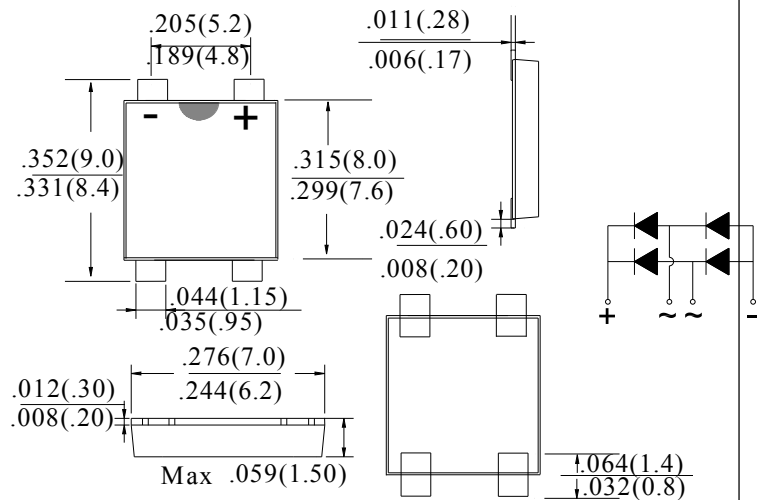
#### FEATURE

- . Glass passivated junction.
- . Ideal for printed circuit board.
- . Reliable low cost construction utilizing molded plastic technique.
- . High surge current capability.
- . High temperature soldering guaranteed: 260°C/10 seconds at terminals.

#### MECHANICAL DATA

- . Case Material: "Green" Molding compound, UL flammability classification rating 94V-0, "Halogen free"
- . Moisture sensitivity level: level 2a, per J-STD-020
- . Polarity: Polarity as marked on the body
- . Weight: 0.204g (approximately)

#### TMBF



Dimensions in inches and (millimeters)

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

#### MAXIMUM RATINGS ( $T_C=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	TMBFR310	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	1000	V
Maximum RMS Voltage	$V_{RMS}$	700	V
Maximum DC blocking Voltage	$V_{DC}$	1000	V
Average Forward Rectified Current at $T_C \leq 90^\circ\text{C}$	$I_{F(AV)}$	3	A
Non-repetitive forward surge current, 8.3ms half sine-wave	$I_{FSM}$	90	A
$I^2t$ Rating for Fusing ( $t < 8.3\text{ms}$ )	$I^2t$	33.6	A <sup>2</sup> Sec
Maximum Reverse Recovery Time (Note 1)	$t_{rr}$	500	nS
Typical Junction Capacitance (Note 2)	$C_J$	55	pF
Operation Junction Temperature and Storage Temperature	$T_J, T_{STG}$	-55 to + 150	$^\circ\text{C}$

#### ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Units
Instantaneous Forward voltage at 3A	$V_F$	@ $T_J=25^\circ\text{C}$	1.1	1.3	V
		@ $T_J=125^\circ\text{C}$	0.94	-----	
reverse current at rated DC blocking voltage	$I_R$	@ $T_J=25^\circ\text{C}$	-----	5.0	$\mu\text{A}$
		@ $T_J=125^\circ\text{C}$	-----	100.0	

#### THERMAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	TMBFR310	Units
Typical Thermal Resistance (Note 3)	$R_{(JA)}$	115	$^\circ\text{C}/\text{W}$
	$R_{(JC)}$	28	

**Note:** 1. Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

2.  $T_J=25^\circ\text{C}$ ,  $V_R = 4V_{DC}@1\text{Mhz}$

3. Measured on P.C.Board with 15.0mm\*15.0mm\*1.6mm Copper Pad Areas

**RATING AND CHARACTERISTIC CURVES ( TMBFR310 )**

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

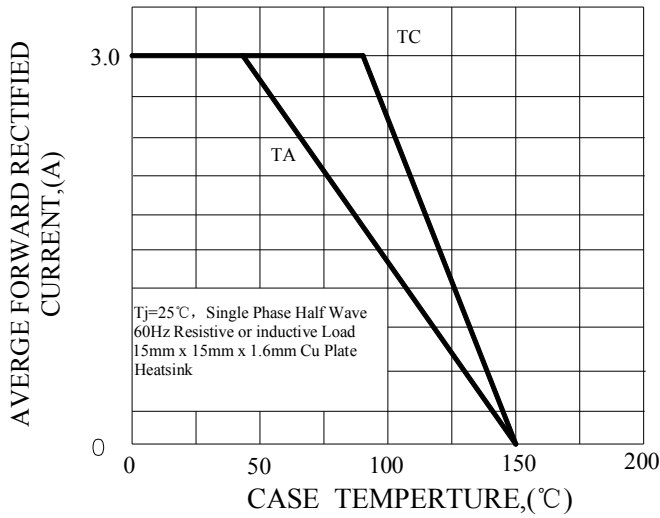


FIG.2-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

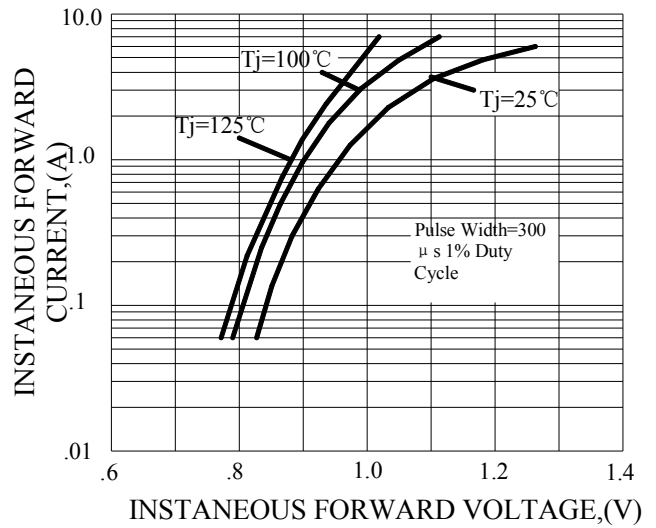


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

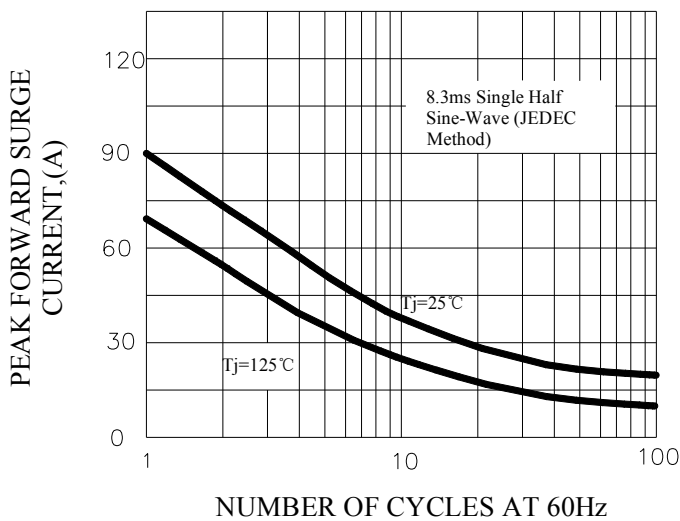


FIG.4-TYPICAL REVERSE CHARACTERISTICS

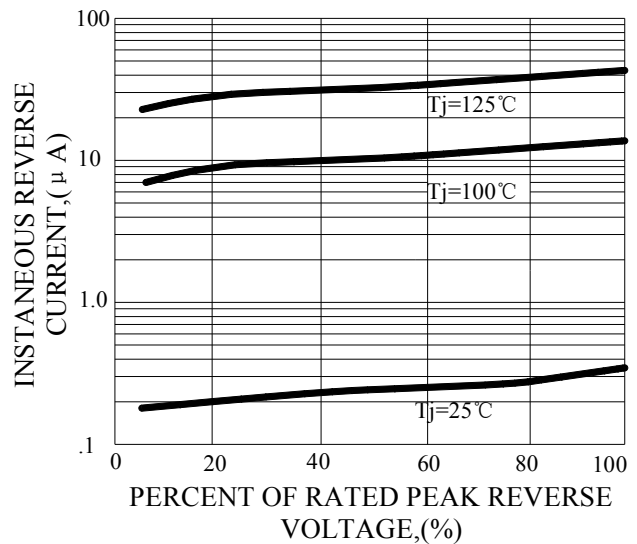
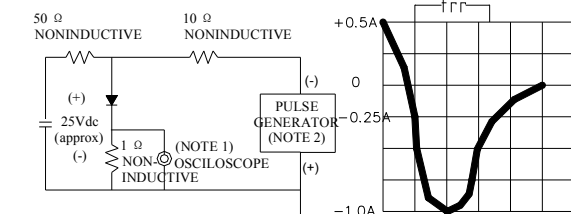
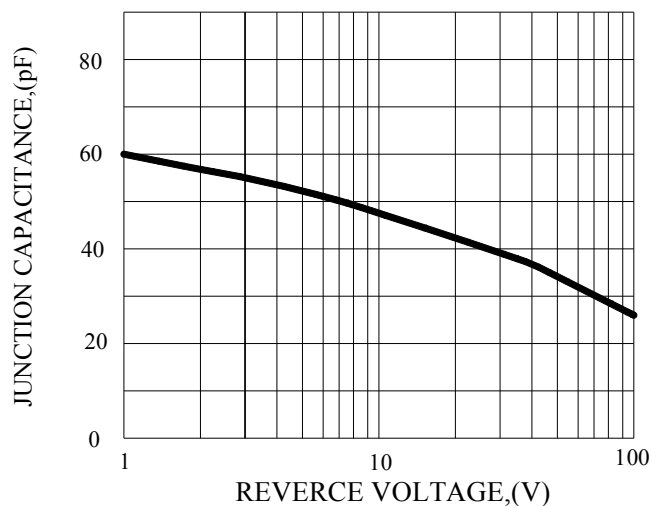


FIG.5-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



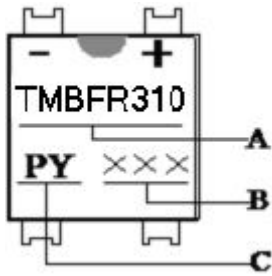
NOTES:1. Rise Time=7ns max, Input Impedance= 1 megohm,22pF.  
 2. Rise Time=10ns max, Source Impedance= 50 ohms.

FIG.6-TYPICAL JUNCTION CAPACITANCE



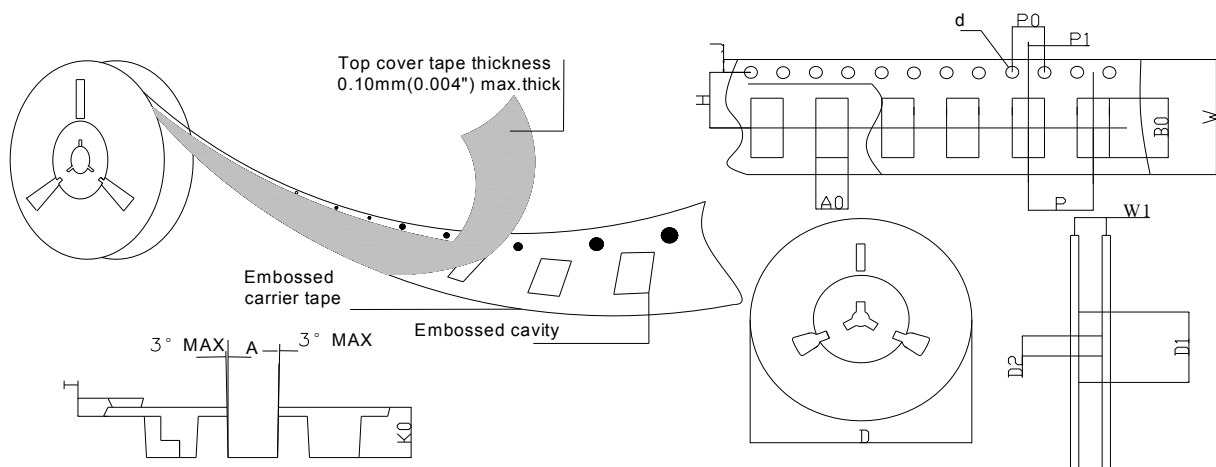
## Marking and packaging illustration

### 1、Marking



SYMBOL	Explanation
A	Product Name
B	Date Code
C	Trademark

### 2、Packaging



SPECIFICATIONS mm(inch)		PACKAGE
<b>SYMBOL</b>		<b>TMBF</b>
<b>ITEM</b>		
Carrier width	A0	7.0(0.276)Max
Carrier length	B0	9.1(0.358)Max
Sprocket hole	d	ø1.55(0.061)Typ
Reel outer diameter	D	330.0(13.0)Typ
Reel inner diameter	D1	50.0(1.969)Min
Feed hole diameter	D2	13.0(0.512)Typ
Sprocket hole position	J	1.75(0.069)Typ
Punch hole position	H	7.50(0.295)Typ
Carrier depth	K0	1.70(0.067)Typ
Punch hole pitch	P	12.00(0.472)Typ
Sprocket hole pitch	P0	4.00(0.157)Typ
Embossment center	P1	2.00(0.079)Typ
Overall tape thickness	T	0.33(0.013)Typ
Tape width	W	16.0(0.630)Typ
Reel width	W1	12.4(0.488)Min