

## TMBFR310

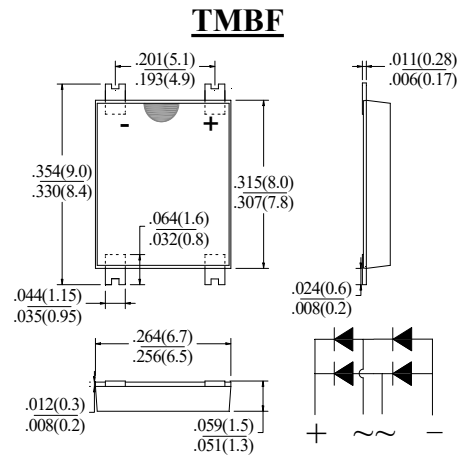
### SINGLE PHASE 3.0AMPS. GLASS PASSIVATED FAST BRIDGE RECTIFIERS

#### 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



Dimensions in inches and (millimeters)

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

#### MAXIMUM RATINGS (T<sub>C</sub>=25°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 <sub>C</sub> ≤ 90°C	$I_{F(AV)}$	3	A
Peak Forward Surge Current @T <sub>J</sub> =25°C 8.3ms single half sine-wave @T <sub>J</sub> =125°C	$I_{FSM}$	90 70	A
Peak Forward Surge Current @T <sub>J</sub> =25°C 1.0ms single half sine-wave @T <sub>J</sub> =125°C	$I_{FSM}$	180 140	A
I <sup>2</sup> t Rating for Fusing (t < 8.3ms)	$I^2t$	33.6	A <sup>2</sup> Sec
Maximum Reverse Recovery Time (Note 1)	$t_{rr}$	500	nS
Typical Junction Capacitance (Note 2)	$C_J$	36	pF
Operation Junction Temperature and Storage Temperature	$T_J, T_{STG}$	-55 to + 150	°C

#### ELECTRICAL CHARACTERISTICS (T<sub>C</sub>=25°C unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Units
Instantaneous Forward voltage at 3A @T <sub>J</sub> =25°C @T <sub>J</sub> =125°C	$V_F$	----- -----	1.1 0.94	1.3 -----	V
reverse current at rated DC blocking voltage @T <sub>J</sub> =25°C @T <sub>J</sub> =125°C	$I_R$	----- -----	----- -----	5.0 500.0	uA

#### THERMAL CHARACTERISTICS (T<sub>C</sub>=25°C unless otherwise noted)

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

Note: 1. Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

2. T<sub>J</sub>=25°C, V<sub>R</sub> = 4V<sub>DC</sub>@1Mhz

3. Measured on P.C.Board with 50mm\*50mm Copper Pad per pin.

**RATING AND CHARACTERISTIC CURVES**

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

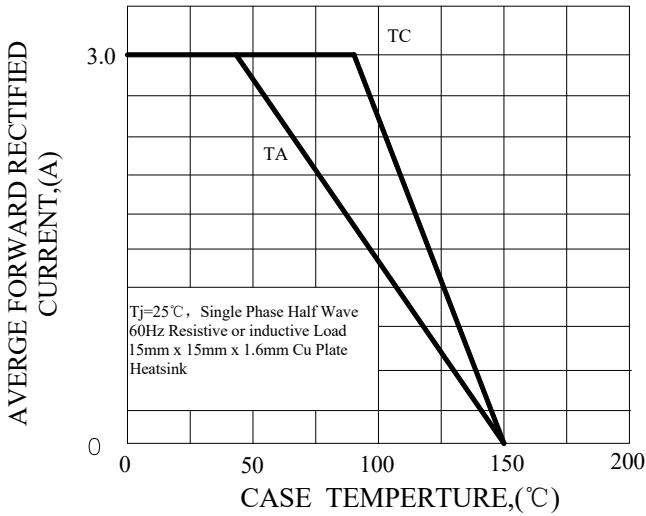


FIG.2-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

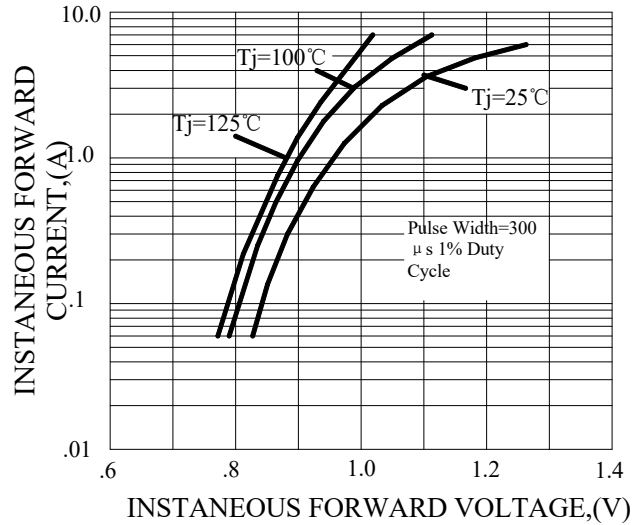


FIG.3-MAXIMUN NON-REPETITIVE FORWARD SURGE CURRENT

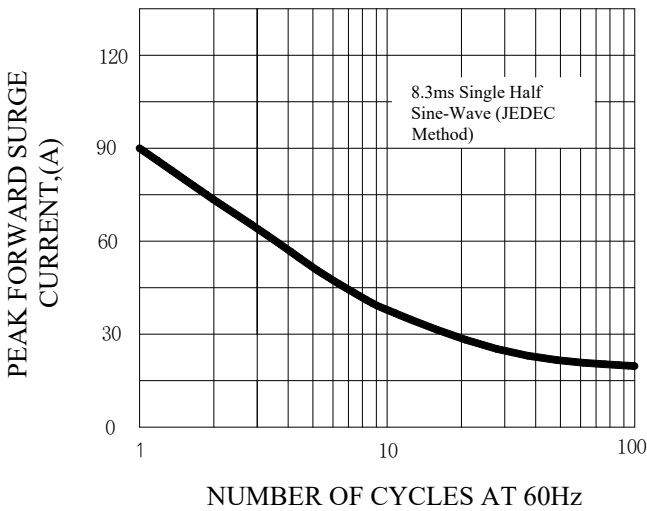


FIG.4-TYPICAL REVERSE CHARACTERISTICS

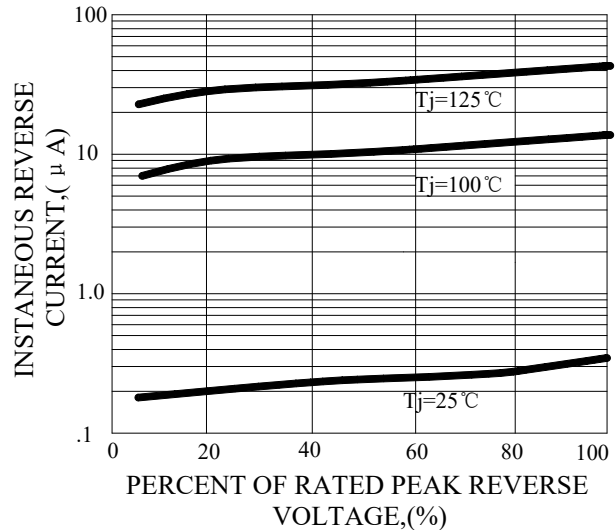
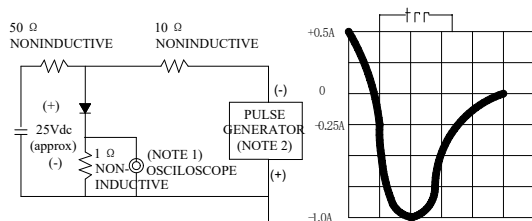
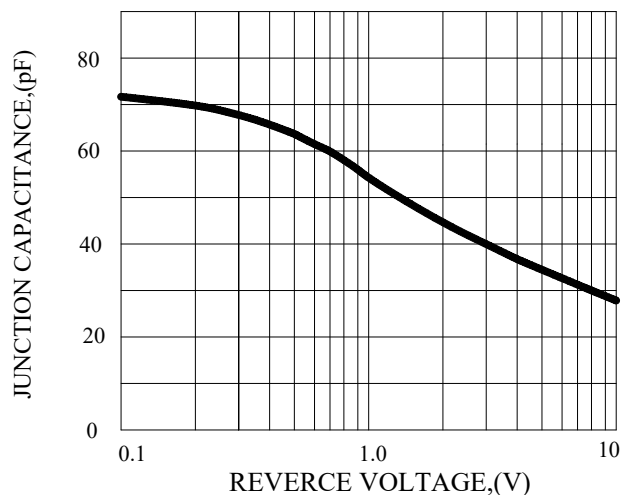


FIG.5-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



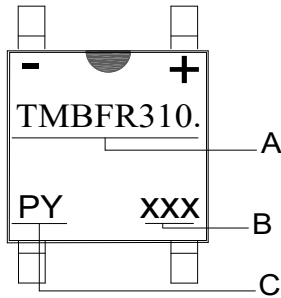
NOTES: 1. Rise Time=7ns max, Input Impedance= 1 megohm, 22pF.  
2. Rise Time=10ns max, Source Impedance= 50 ohms.

TMBFR310-TYPICAL JUNCTION CAPAOTANCE



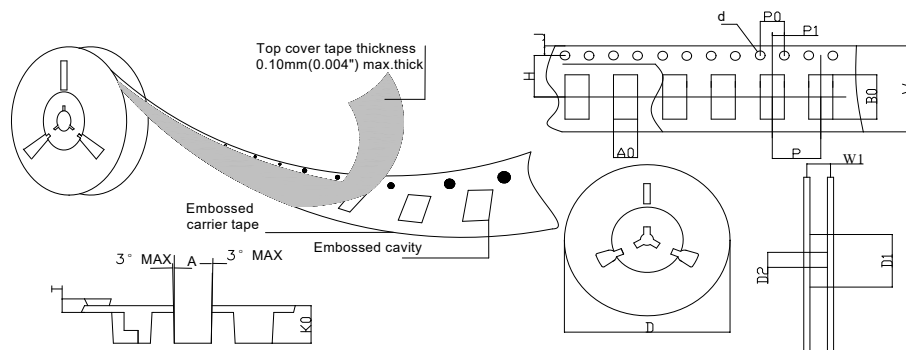
## Marking and packaging illustration

### 1、Marking



SYMBOL	Explanation
<b>A</b>	<b>Product Name</b>
<b>B</b>	<b>Date Code</b>
<b>C</b>	<b>Trademark</b>

### 2、Packaging



SPECIFICATIONS mm(inch)		PACKAGE	SPECIFICATIONS mm(inch)		PACKAGE
ITEM	SYM BOL	TMBF	ITEM	SYM BOL	TMBF
Carrier width	A	7.0(0.276)Max	Carrier depth	K	1.70(0.067)Typ
Carrier length	B	9.9(0.390)Max	Punch hole pitch	P	12.00(0.472)Typ
Sprocket hole	d	ø1.55(0.061)Typ	Sprocket hole pitch	P0	4.00(0.157)Typ
Reel outer diameter	D	330.0(13.0)Typ	Embossment center	P1	2.00(0.079)Typ
Reel inner diameter	D1	50.0(1.969)Min	Overall tape thickness	T	0.33(0.013)Typ
Feed hole diameter	D2	13.0(0.512)Typ	Tape width	W	16.0(0.630)Typ
Sprocket hole position	J	1.75(0.069)Typ	Reel width	W1	12.4(0.488)Min
Punch hole position	H	7.50(0.295)Typ			