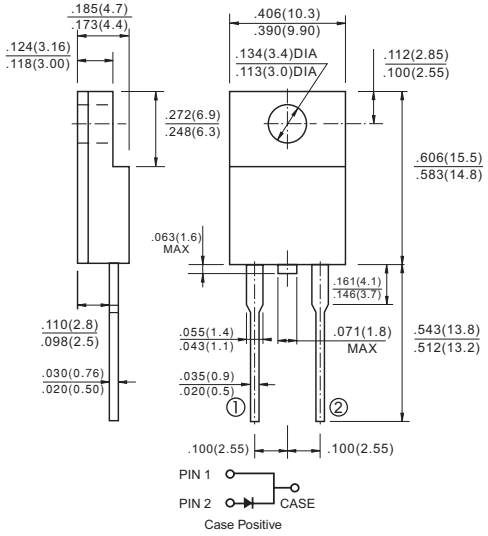
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

FRAF1001G - FRAF1007G

Isolated 10 AMPS. Glass Passivated Fast Recovery Rectifiers

ITO-220AC



Dimensions in inches and (millimeters)

Features

- ✧ Glass passivated chip junction.
- ✧ High efficiency, Low VF
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ Low power loss

Mechanical Data

- ✧ Cases: ITO-220AC molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Terminals: Pure tin plated, Lead free. Leads solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ High temperature soldering guaranteed: 260 °C /10 seconds 0.25",(6.35mm) from case.
- ✧ Mounting position: Any
- ✧ Weight: 2.24 grams
- ✧ Mounting torque: 5 in – 1bs. max.

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Type Number	Symbol	FRAF 1001G	FRAF 1002G	FRAF 1003G	FRAF 1004G	FRAF 1005G	FRAF 1006G	FRAF 1007G	Units
Maximum Recurrent 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 @T_C = 55 °C	$I_{(AV)}$	10							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	150							A
Maximum Instantaneous Forward Voltage @ 10A	V_F	1.3							V
Maximum DC Reverse Current @ T_C=25 °C at Rated DC Blocking Voltage @ T_C=125 °C	I_R	5.0 100							uA uA
Maximum Reverse Recovery Time (Note 2)	Trr	150				250	500		nS
Typical Junction Capacitance (Note 1) T_J=25 °C	Cj	60							pF
Typical Thermal Resistance (Note 3)	$R_{\theta JC}$	5.0							°C/W
Operating and Storage Temperature Range	T_J ,T_{STG}	-65 to +150							°C

Notes: 1. Measured at 1 MHz and Applied Reverse Voltage of 4.0 Volts D.C.
2. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A
3. Thermal Resistance from Junction to Case, with Heatsink size 2" x 3" x 0.25" Al-Plate.

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RATINGS AND CHARACTERISTIC CURVES (FRAF1001G THRU FRAF1007G)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

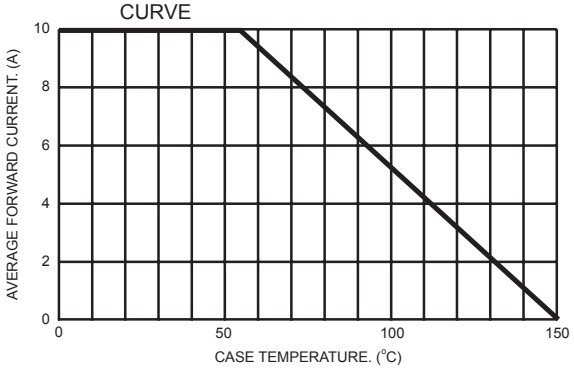


FIG.2- TYPICAL REVERSE CHARACTERISTICS

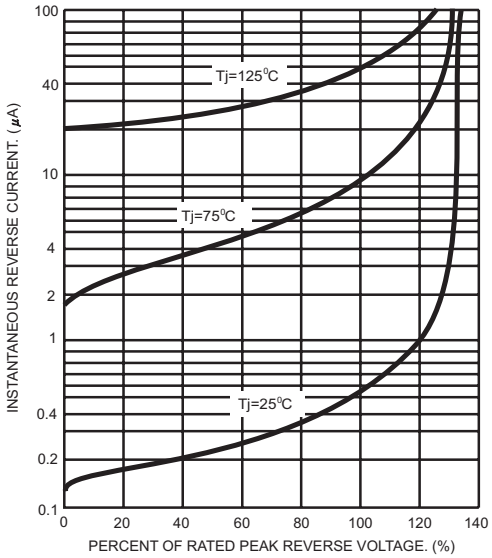


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

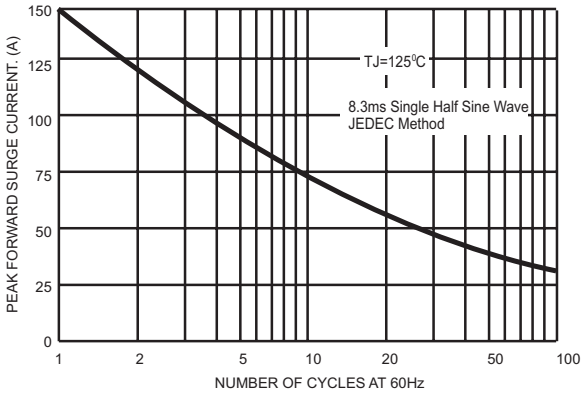


FIG.4- TYPICAL JUNCTION CAPACITANCE

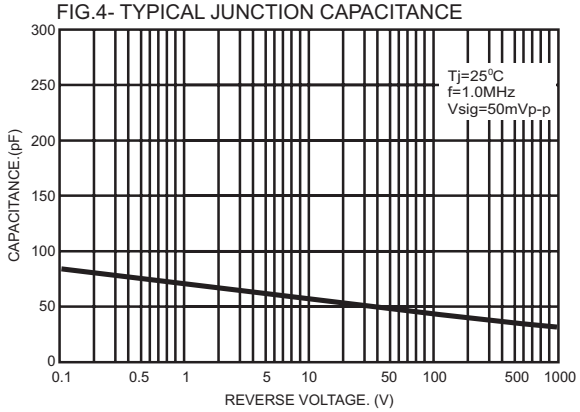


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

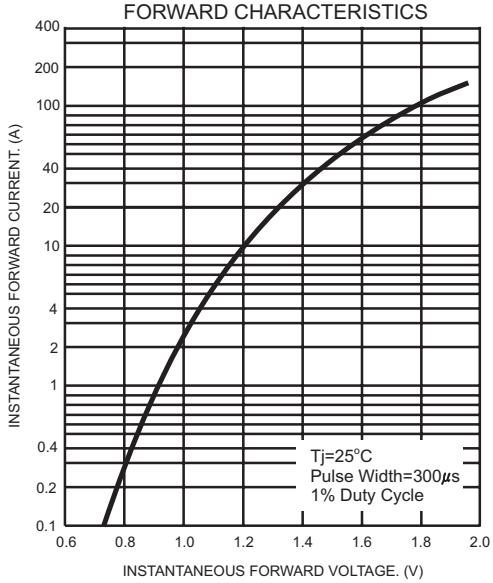
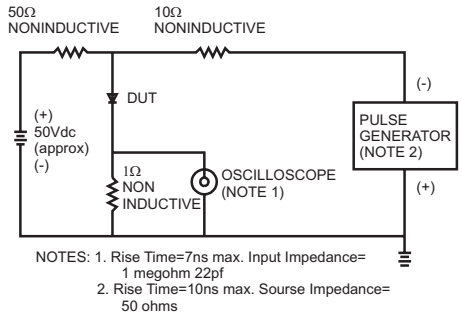
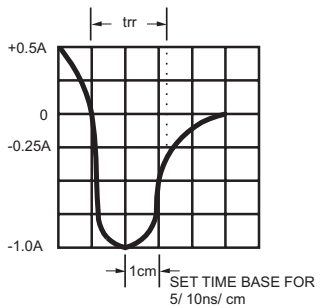


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm 22pf
2. Rise Time=10ns max. Sourse Impedance= 50 ohms



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