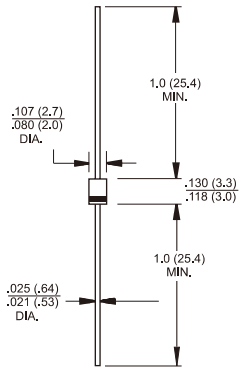
TAIWAN SEMICONDUCTOR

F1T1G - F1T7G

1.0 AMP. Glass Passivated Fast Recovery Rectifiers

RoHS COMPLIANCE

TS-1



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
- ✧ Green compound with suffix “G” on packing code & prefix “G” on datecode.

Mechanical Data

- ✧ Cases: Molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Lead: Pure tin plated, Lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: Color band denotes cathode end
- ✧ High temperature soldering guaranteed: 260 °C /10 seconds/.375”,(9.5mm) lead lengths at 5 lbs.,(2.3kg) tension
- ✧ Mounting position: Any
- ✧ Weight: 0.20 grams

Marking Diagram

F1TXG = Specific Device Code
G = Green Compound
Y = Year
M = Work Month

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	F1T 1G	F1T 2G	F1T 3G	F1T 4G	F1T 5G	F1T 6G	F1T 7G	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 .375”(9.5mm) Lead Length @T_A = 55 °C	$I_{F(AV)}$	1.0							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	30							A
Maximum Instantaneous Forward Voltage @ 1.0A	V_F	1.3							V
Maximum DC Reverse Current at @ T_A=25 °C Rated DC Blocking Voltage(Note 1) @ T_A=125 °C	I_R	5.0 150							uA uA
Maximum Reverse Recovery Time (Note 4)	Trr	150				250	500		nS
Typical Junction Capacitance (Note 2)	Cj	15							pF
Typical Thermal Resistance (Note 3)	$R_{\theta JA}$	90							°C/W
Operating Temperature Range T_J	T_J	-65 to +150							°C
Storage Temperature Range T_{STG}	T_{STG}	-65 to +150							°C

Notes: 1. Pulse Test with PW=300 usec,1% Duty Cycle
2. Measured at 1 MHz and Applied Reverse Voltage of 4. 0 Volts D.C.
3. Mount on Cu-Pad Size 5mm x 5mm on P.C.B.
4. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

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RATINGS AND CHARACTERISTIC CURVES (F1T1G THRU F1T7G)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

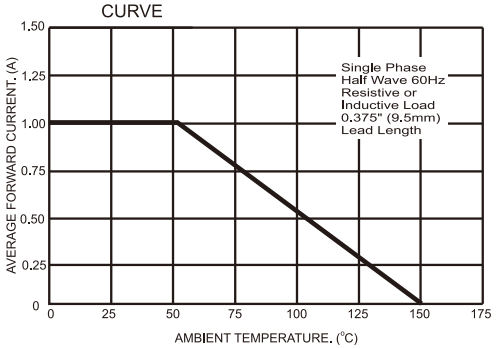


FIG.2- TYPICAL REVERSE CHARACTERISTICS PER LEG

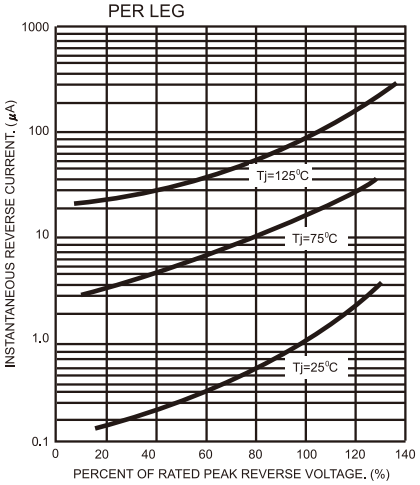


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

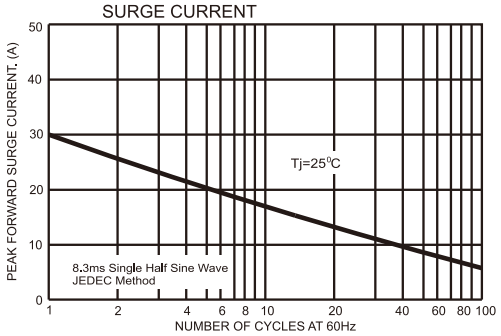


FIG.5- TYPICAL FORWARD CHARACTERISTICS

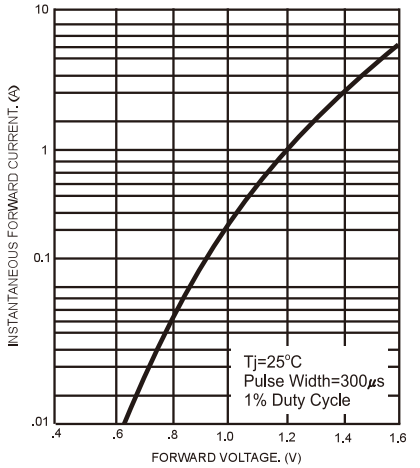


FIG.4- TYPICAL JUNCTION CAPACITANCE

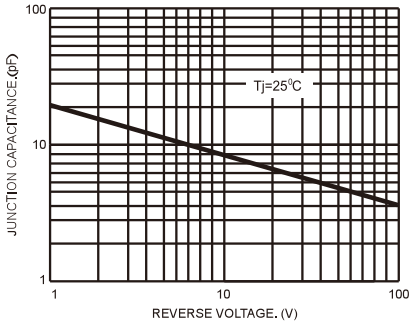
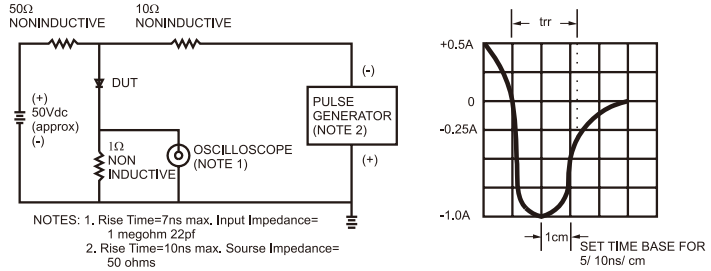


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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

Version: C10