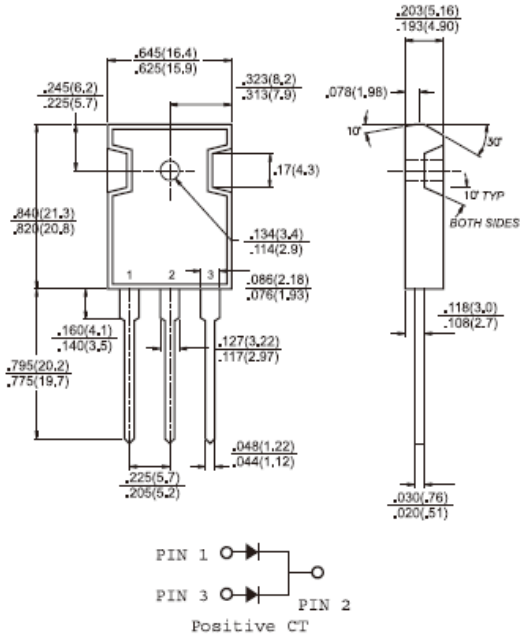
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

SF1601PT - SF1608PT

16.0AMPS. Glass Passivated Super Fast Rectifiers

TO-3P/TO-247AD



Features

- ✧ UL Recognized File # E-326243
- ✧ Dual rectifier construction, positive center-tap
- ✧ Plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- ✧ Glass passivated chip junctions
- ✧ Superfast recovery time, high voltage
- ✧ Low forward voltage, high current capability
- ✧ Low thermal resistance
- ✧ Low power loss, high efficency
- ✧ High temperature soldering guaranteed: 260°C / 10 seconds, 0.16"(4.06mm) lead lengths at 5 lbs.(2.3kg) tesion
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

Mechanical Data

- ✧ Cases: JEDEC TO-3P/TO-247AD molded plastic
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Weight: 5.6 grams

Dimensions in inches and (millimeters)

Marking Diagram

SF16XXPT	= Specific Device Code
G	= Green Compound
Y	= Year
WW	= Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ 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	SF 1601 PT	SF 1602 PT	SF 1603 PT	SF 1604 PT	SF 1605 PT	SF 1606 PT	SF 1607 PT	SF 1608 PT	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current at T_C=100℃	$I_{F(AV)}$	16								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 (Note 1) @8 A	V_F	0.95				1.3		1.7		V
Maximum DC Reverse Current @ T_A=25 ℃	I_R	10								uA
at Rated DC Blocking Voltage @ T_A=125 ℃		500								uA
Maximum Reverse Recovery Time (Note 2)	Trr	35								nS
Typical Junction Capacitance (Note 3)	Cj	85								pF
Typical Thermal Resistance (Note 4)	$R_{\theta JC}$	2								°C/W
Operating Junction Temperature Range	T_J	- 55 to + 150								°C
Storage Temperature Range	T_{STG}	- 55 to + 150								°C

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

Note 3: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A.

Note 4: Mounted on Heatsink size of 3" x 5" x 0.25" Al-Plate.

RATINGS AND CHARACTERISTIC CURVES (SF1601PT THRU SF1608PT)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

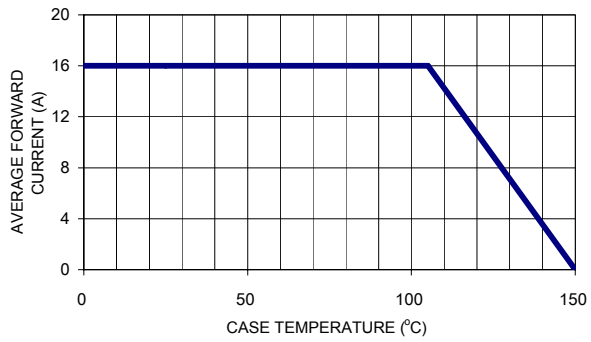


FIG. 2- TYPICAL INSTANEOUS FORWARD CHARACTERISRICS PER LEG

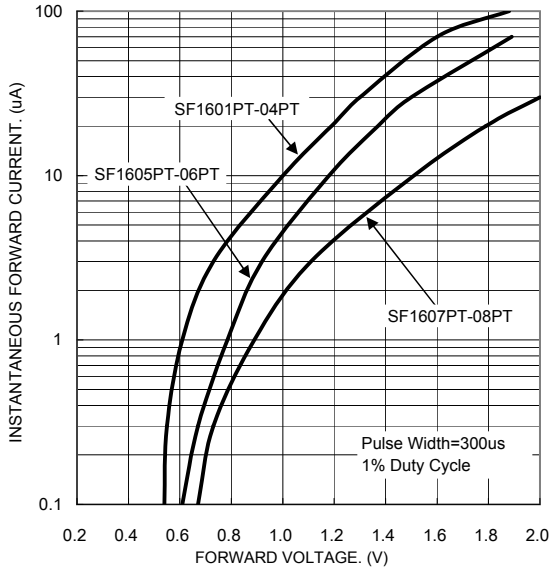


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

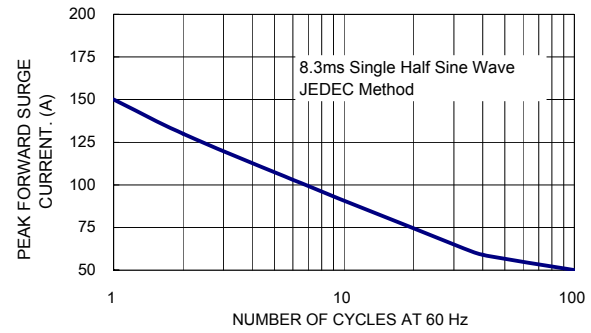


FIG. 5- TYPICAL REVERSE CHARACTERISTICS

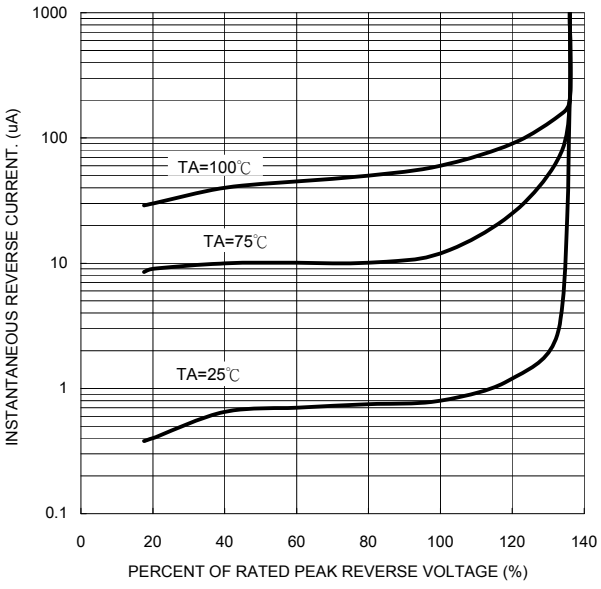


FIG. 4- TYPICAL JUNCTION CAPACITANCE PER LEG

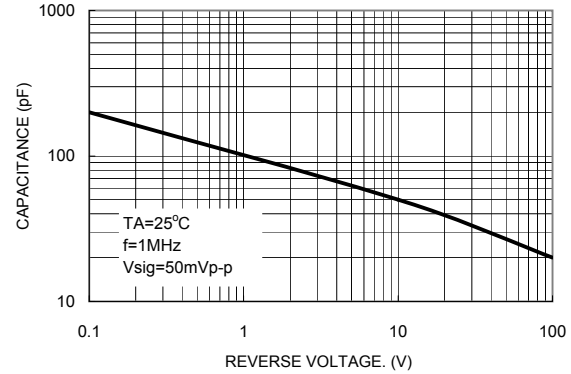


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM