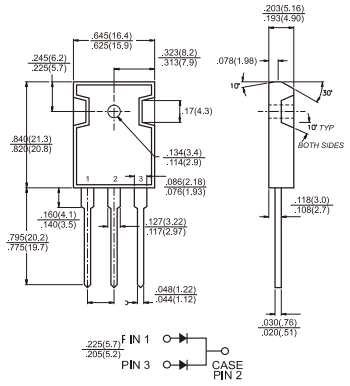
TAIWAN SEMICONDUCTOR

SF2001PT - SF2008PT

20.0 AMPS. Glass passivated Super Fast Rectifiers

Pb RoHS COMPLIANCE

TO-3P/TO-247AD



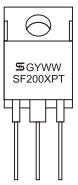
Features

- ✧ 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 efficiency
- ✧ 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

SF200XPT = Specific Device Code
G = Green Compound
Y = Year
WW = Work Week

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	SF 2001PT	SF 2002PT	SF 2003PT	SF 2004PT	SF 2005PT	SF 2006PT	SF 2007PT	SF 2008PT	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 @T_C = 100 °C	$I_{F(AV)}$	20								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	180								A
Maximum Instantaneous Forward Voltage @ 10A @ 20A	V_F	0.975 1.10				1.30 1.50		1.70 1.90		V
Maximum DC Reverse Current at @ T_A=25 °C Rated DC Blocking Voltage (Note 1) @ T_A=125 °C	I_R	10 400								uA uA
Maximum Reverse Recovery Time (Note 2)	Trr	35								nS
Typical Junction Capacitance (Note 3)	Cj	175								pF
Typical Thermal Resistance (Note 4)	$R_{\theta JC}$	2.5								°C/W
Operating Temperature Range	T_J	-55 to +150								°C
Storage Temperature Range	T_{STG}	-55 to +150								°C

Notes: 1. Pulse Test with PW=300 usec,1% Duty Cycle
2. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, Recover to 0.25A.
3. Mounted on Heatsink size of 3" x 5" x 0.25" Al-Plate.
4. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.

Version: E10

RATINGS AND CHARACTERISTIC CURVES (SF2001PT THRU SF2008PT)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

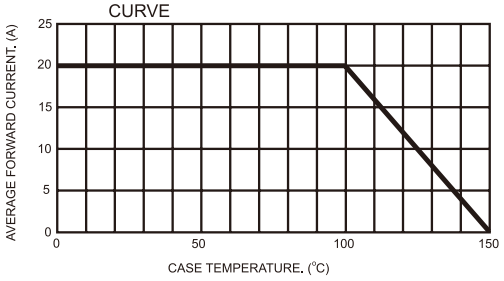


FIG.2- TYPICAL REVERSE CHARACTERISTICS PER LEG

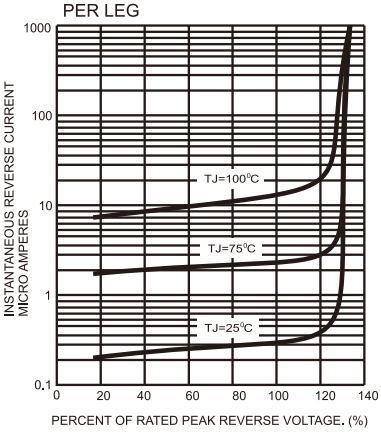


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

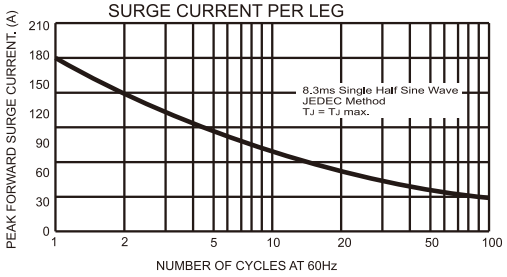


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

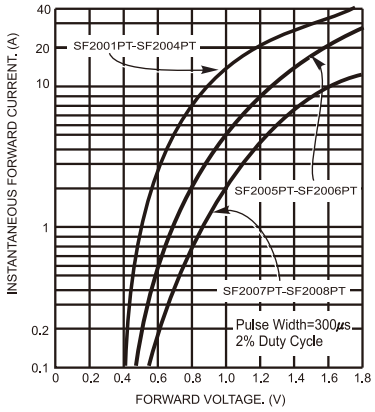


FIG.4- TYPICAL JUNCTION CAPACITANCE PER LEG

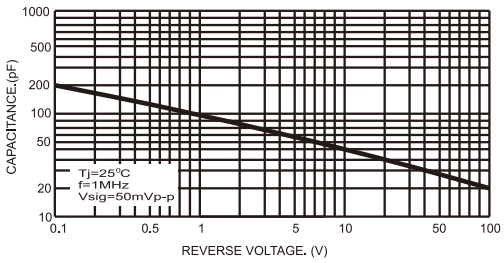


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM