

**TSC**  
**SF2001PT THRU SF2008PT**  
20.0 AMPS. Glass Passivated Super Fast Rectifiers



Voltage Range  
50 to 600 Volts  
Current  
20.0 Amperes

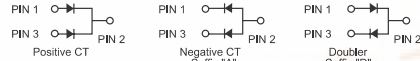
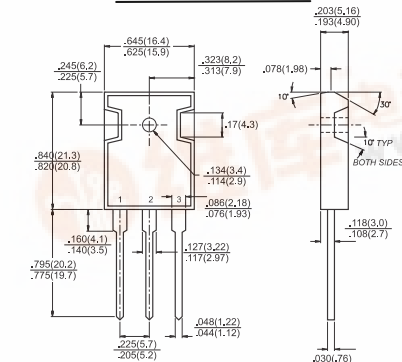
**Features**

- ◇ 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) tension

**Mechanical Data**

- ◇ Cases: JEDEC TO-3P/TO-247AD molded plastic
- ◇ Terminals: Leads solderable per MIL-STD-750, Method 2026
- ◇ Polarity: As marked
- ◇ Mounting position: Any
- ◇ Weight: 0.2 ounce, 5.6 grams

**TO-3P/TO-247AD**



Dimensions in inches and (millimeters)

**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 2001 PT	SF 2002 PT	SF 2003 PT	SF 2004 PT	SF 2005 PT	SF 2006 PT	SF 2007 PT	SF 2008 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 $T_c=100^\circ\text{C}$	$I_{(AV)}$	20								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	280								A
Maximum Instantaneous Forward Voltage @ 10.0A @ 20A	$V_F$	0.95		1.3			1.7 0.21		V	
Maximum D.C. Reverse Current at Rated DC Blocking Voltage @ $T_c=25^\circ\text{C}$ @ $T_c=100^\circ\text{C}$	$I_R$	10 400								$\mu\text{A}$
Maximum Reverse Recovery Time (Note 2) $T_J=25^\circ\text{C}$	$T_{rr}$	35								nS
Typical Junction Capacitance (Note 1)	$C_j$	175								pF
Typical Thermal Resistance (Note 3)	$R_{\theta JC}$	2.5								$^\circ\text{C/W}$
Operating Junction Temperature Range	$T_J$	-55 to +150								$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150								$^\circ\text{C}$

- Notes: 1. Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.  
2. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ , Recover to 0.25A.  
3. Thermal Resistance from Junction to Case Mounted on Heatsink size 3"x5"x0.25" Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (SF2001PT THRU SF2008PT)

FIG.1- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

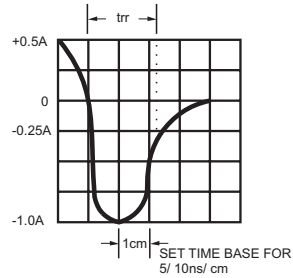
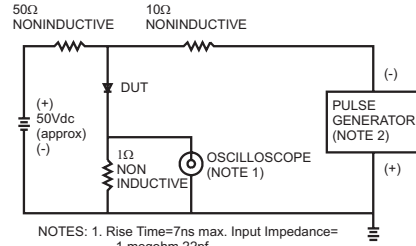


FIG.2- MAXIMUM FORWARD CURRENT DERATING CURVE

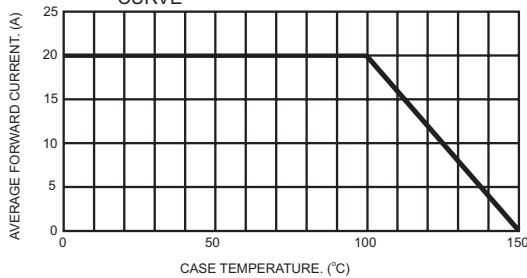


FIG.3- TYPICAL REVERSE CHARACTERISTICS PER LEG

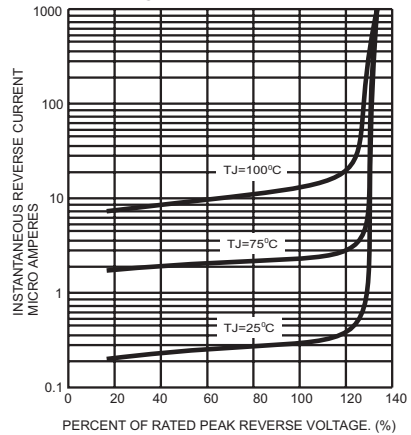


FIG.4- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

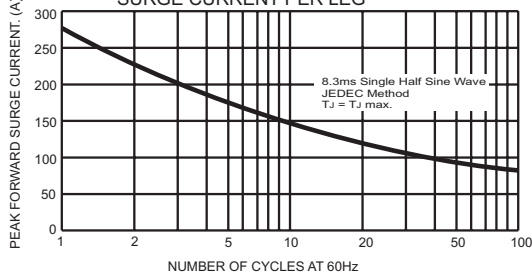


FIG.6- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

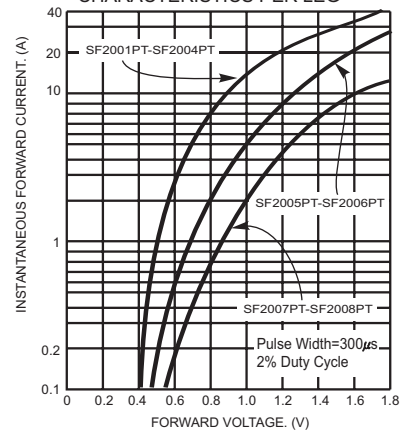


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

