

14849 Firestone Boulevard · La Mirada, CA 90638  
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

**Designer's Data Sheet**

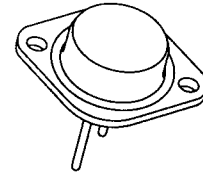
**FEATURES:**

- Rugged construction with poly silicon gate
- Low RDS(on) and high transconductance
- Excellent high temperature stability
- Very fast switching speed
- Fast recovery and superior dv/dt performance
- Increased reverse energy capability
- Low input and transfer capacitance for easy paralleling
- Hermetically sealed package
- Available in both hot case and isolated versions
- Ideal for low power applications
- TX, TXV and Space Level screening available
- Replaces: IRF130 Types

**SFF130/3**

**14 AMP  
100 VOLTS  
0.16 Ω  
N-CHANNEL  
POWER MOSFET**

TO-3



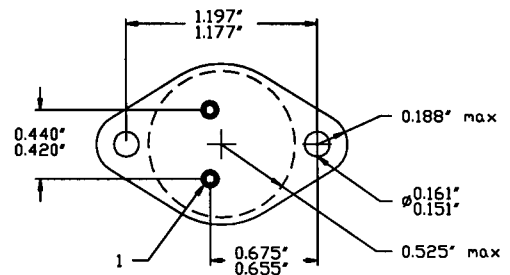
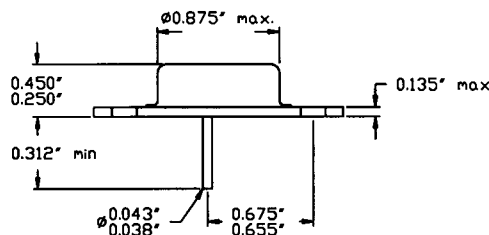
**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	100	Volts
Gate to Source Voltage	V <sub>GS</sub>	± 20	Volts
Continuous Drain Current @ TC=25°C @ TC= 100°C	I <sub>D</sub>	14 9	Amps
Operating and Storage Temperature	T <sub>op</sub> & T <sub>stg</sub>	-55 to +150	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	5	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TA=25°C	P <sub>D</sub>	25 19	Watts
Single Pulse Avalanche Energy	E <sub>AS</sub>	75	mJ
Repetitive Avalanche Energy	E <sub>AR</sub>	7.5	mJ

**PACKAGE OUTLINE: TO-3**

**PIN OUT:**

PIN 1: GATE  
PIN 2: SOURCE  
CASE: DRAIN



NOTE: All specifications are subject to change without notification. SSDI's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: F00307 A

# SFF130/3

PRELIMINARY



**SOLID STATE DEVICES, INC**

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**ELECTRICAL CHARACTERISTICS @ T<sub>J</sub>=25° C (Unless Otherwise Specified)**

RATING	SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (VGS=0 V, ID=250μA)	BVDSS	100	---	---	V
Temperature Coefficient of Breakdown Voltage	$\frac{\Delta BVDSS}{\Delta T_J}$	---	130	---	mV/°C
Drain to Source on State Resistance (VGS=10 V) ID=9A ID=14A	RDS(on)	---	0.14	0.18 0.21	Ω
On State Drain Current (VDS > ID(on) X RDS(on) Max, VGS=10 V)	ID(on)	14	---	---	A
Gate Threshold Voltage (VDS=VGS, ID=250μA)	VGS(th)	2	2.8	4	V
Forward Transconductance (VDS > ID(on) X RDS(on) Max, IDS=9A)	gfs	4.6	7	--	S(V)
Zero Gate Voltage Drain Current (VDS=80% max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125° C)	IDSS	---	---	25 250	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS IGSS	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	VGS=10 Volts 50% rated VDS Rated ID Qg Qgs Qgd	12 1.5 .5	17 3.7 7.0	35 10 15	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	VDD=50% rated VDS 50% rated ID RG=7.5Ω td(on) tr td(off) tf	---	9.5 42 22 25	35 80 60 45	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, T <sub>J</sub> =25° C)	VSD	---	1	1.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	T <sub>J</sub> =25° C IF=10A di/dt=100 A/μsec trr QRR	---	120 0.58	300 3	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f= 1 MHz Ciss Coss Crss	---	650 250 44	---	pF

SAFE OPERATING AREA (S.O.A.)  
 TC = 25 C, D.C. CONDITION

