

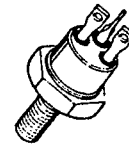


PRELIMINARY

SOLID STATE DEVICES, INC14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**SFF130/59****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 stud package
- TX, TXV and Space Level screening available
- Replaces: IRF130 Types

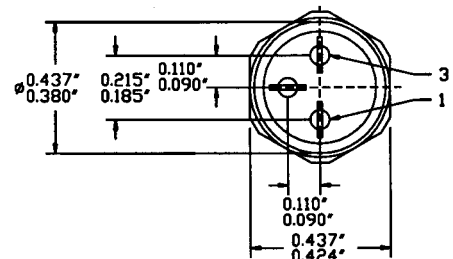
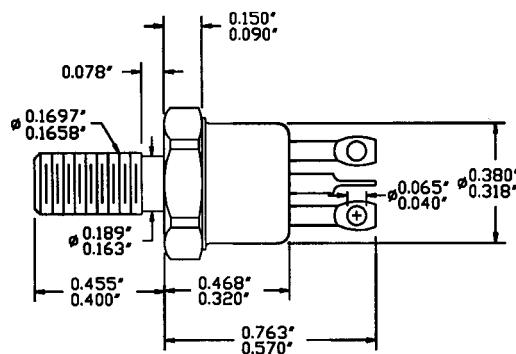
**14 AMP
100 VOLTS
0.16 Ω
N-CHANNEL
POWER MOSFET**

TO-59**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	100	Volts
Gate to Source Voltage	V _{GS}	± 20	Volts
Continuous Drain Current @TC=25°C @TC=100°C	I _D	14 9	Amps
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	3.5	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	P _D	35 27	Watts

PACKAGE OUTLINE: TO-59**PIN OUT:**

**PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE**



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

DATA SHEET #: F00027 B**MED**

SFF130/59

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ELECTRICAL CHARACTERISTICS @ $T_J=25^\circ\text{C}$ (Unless Otherwise Specified)

RATING	SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage ($V_{GS}=0\text{ V}$, $I_D=250\mu\text{A}$)	BV_{DSS}	100	---	---	V
Temperature Coefficient of Breakdown Voltage	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	---	0.13	---	V/°C
Drain to Source on State Resistance $I_D = 9\text{A}$ ($V_{GS}=10\text{ V}$) $I_D = 14\text{A}$	$R_{DS(on)}$	---	0.13 0.14	0.18 0.21	Ω
On State Drain Current ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $V_{GS}=10\text{ V}$)	$I_D(on)$	14	---	---	A
Gate Threshold Voltage ($V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$)	$V_{GS(th)}$	2	2.8	4	V
Forward Transconductance ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $I_{DS}=60\%$ rated I_D)	g_{fs}	4.6	7	---	S(Ω)
Zero Gate Voltage Drain Current ($V_{DS}=80\%$ rated voltage, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated V_{DS} , $V_{GS}=0\text{ V}$, $T_A=125^\circ\text{C}$)	I_{DSS}	---	---	25 250	μA
Gate to Source Leakage Forward At rated V_{GS} Gate to Source Leakage Reverse	I_{GSS}	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	$V_{GS}=10\text{ Volts}$ 50% rated V_{DS} Rated I_D Q_g Q_{gs} Q_{gd}	12 1.5 5	20 --- ---	35 10 15	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated V_{DS} $I_D=14\text{A}$ $R_G=7.5\Omega$ $t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	9.5 42 22 25	35 80 60 45	nsec
Diode Forward Voltage ($I_S=\text{rated } I_D$, $V_{GS}=0\text{ V}$, $T_J=25^\circ\text{C}$)	V_{SD}	---	1.15	1.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^\circ\text{C}$ $I_F=\text{rated } I_D$ $di/dt=100\text{ A/sec}$ t_{rr} Q_{RR}	---	120 0.7	300 3	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	$V_{GS}=0\text{ Volts}$ $V_{DS}=25\text{ Volts}$ $f=1\text{ MHz}$ C_{iss} C_{oss} C_{rss}	---	650 250 44	---	pF

 SAFE OPERATING AREA (S.O.A.)
 $T_C = 25^\circ\text{C}$, D.C. CONDITION
