



PRELIMINARY

SOLID STATE DEVICES, INC

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

SFF9130J

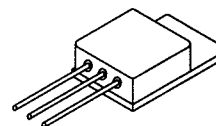
**-11 AMP  
-100 VOLTS  
0.30 Ω  
P-CHANNEL  
POWER MOSFET**

### 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
- TX, TXV and Space Level Screening available
- Replaces: IRF9130 Types

TO-257



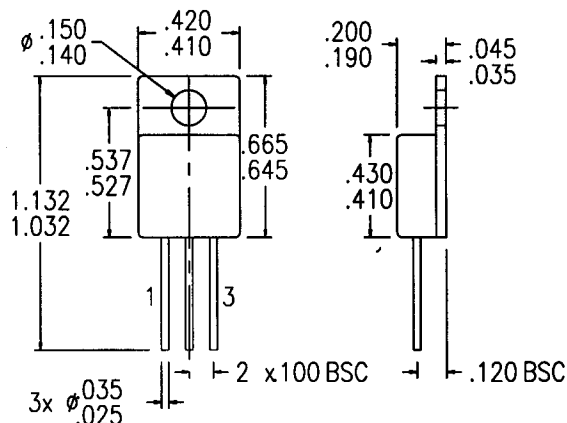
#### MAXIMUM RATINGS

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>	-11 -7	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>	2.5	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	P <sub>D</sub>	50 38	Watts
Single Pulse Avalanche Energy	E <sub>AS</sub>	81	mJ
Repetitive Avalanche Energy	E <sub>AR</sub>	7.5	mJ

#### PACKAGE OUTLINE: TO-257

#### 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 #: FP0023 C

MED

**SFF9130J**

PRELIMINARY

**SOLID STATE DEVICES, INC**14849 Firestone Boulevard · La Mirada, CA 90638  
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**ELECTRICAL CHARACTERISTICS @ T<sub>J</sub>=25°C (Unless Otherwise Specified)**

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (V <sub>GS</sub> =0 V, I <sub>D</sub> =1mA)		BV <sub>DSS</sub>	-100	---	---	V
Temperature Coefficient of Breakdown Voltage		$\frac{\Delta BV_{DSS}}{\Delta T_J}$	---	87	---	mV/°C
Drain to Source on State Resistance (V <sub>GS</sub> = -10 V)	I <sub>D</sub> =7A I <sub>D</sub> =11A	R <sub>DS(on)</sub>		---	0.30 0.35	Ω
Gate Threshold Voltage (V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> = -250μA)		V <sub>GS(th)</sub>	-2.0		-4.0	V
Forward Transconductance (V <sub>DS</sub> > I <sub>D(on)</sub> X R <sub>DS(on)</sub> Max, I <sub>DS</sub> =7 A)		g <sub>fs</sub>	3.0	5.0	---	S(V)
Zero Gate Voltage Drain Current (V <sub>DS</sub> =80% max rated voltage, V <sub>GS</sub> =0 V) (V <sub>DS</sub> =80% rated V <sub>DS</sub> , V <sub>GS</sub> =0 V, T <sub>A</sub> =125°C)		I <sub>DSS</sub>	---	---	-25 250	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated V <sub>GS</sub>	I <sub>gss</sub>	---	---	-100 100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	V <sub>GS</sub> = -10 Volts 50% rated V <sub>DS</sub> I <sub>D</sub> = -11 A	Q <sub>g</sub> Q <sub>gs</sub> Q <sub>gd</sub>	15 1 2	26 3 14	29 7.1 21	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	V <sub>DD</sub> =50% rated V <sub>DS</sub> I <sub>D</sub> =11A R <sub>G</sub> = 7.5Ω	t <sub>d(on)</sub> t <sub>r</sub> t <sub>d(off)</sub> t <sub>f</sub>	---	15 10 30 12	60 140 140 140	nsec
Diode Forward Voltage (I <sub>S</sub> =rated I <sub>D</sub> , V <sub>GS</sub> =0 V, T <sub>J</sub> =25°C)		V <sub>SD</sub>	---	---	-4.7	V
Diode Reverse Recovery Time Reverse Recovery Charge	T <sub>J</sub> =25°C I <sub>F</sub> =10 A di/dt=100 A/μsec	t <sub>rr</sub> Q <sub>RR</sub>	---	125 ---	250 3	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	V <sub>GS</sub> =0 Volts V <sub>DS</sub> = -25 Volts f= 1 MHz	C <sub>iss</sub> C <sub>oss</sub> C <sub>rss</sub>	---	860 350 125	---	pF

SAFE OPERATING AREA (S.O.A.)  
T<sub>C</sub> = 25°C, D.C. CONDITION