



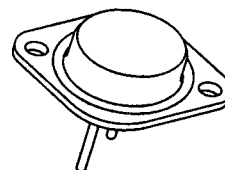
PRELIMINARY

SOLID STATE DEVICES, INC14849 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
- TX, TXV and Space Level Screening available
- Replaces: IRF9140 Types

SFF9140/3

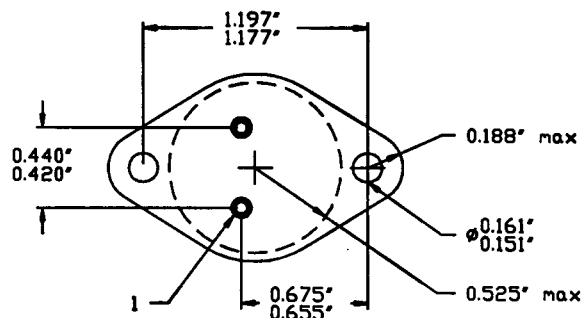
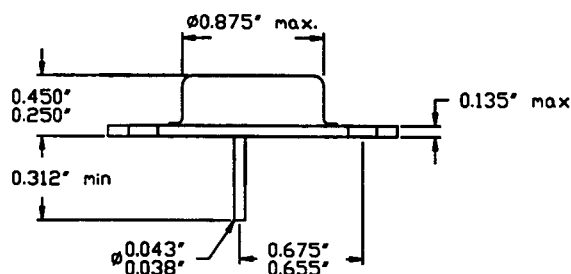
-18 AMP
-100 VOLTS
0.20Ω
P-CHANNEL
POWER MOSFET

TO-3**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	18 11	Amps
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	1.0	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	P _D	125 95	Watts
Single Pulse Avalanche Energy	E _{AS}	500	mJ
Repetitive Avalanche Energy	E _{AR}	12.5	mJ

PACKAGE OUTLINE: TO-3

PIN OUT:
PIN 1: SOURCE
PIN 2: GATE
CASE: DRAIN



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

DATA SHEET #: FP0021 B**MED**

SFF9140/3

PRELIMINARY

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

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (V _{GS} =0 V, I _D = 1mA)		BV _{DSS}	-100	---	---	V
Drain to Source on State Resistance (V _{GS} = -10 V)	I _D =11A I _D =18A	R _{DS(on)}	---	0.15 ---	0.20 0.23	Ω
Temperature Coefficient of Breakdown Voltage		$\frac{\Delta BV_{DSS}}{\Delta T_J}$	---	-0.087	---	A°
Gate Threshold Voltage (V _{DS} =V _{GS} , I _D = -250μA)		V _{GS(th)}	-2.0	---	-4.0	V
Forward Transconductance (V _{DS} ≥ 15V, I _{DS} =11A)		g _{fs}	6.2	8	---	S(V)
Zero Gate Voltage Drain Current (V _{DS} =80% rated voltage, V _{GS} =0 V) (V _{DS} =80% rated V _{DS} , V _{GS} =0 V, T _A =125°C)		I _{DSS}	---	---	25 250	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated V _{GS}	I _{GSS}	---	---	-100 100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	V _{GS} = -10 Volts 50% rated V _{DS} I _D =18 A	Q _g Q _{gs} Q _{gd}	31 --- 7	50 3 25	70 13 45	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	V _{DD} =50% rated V _{DS} rated I _D R _G =9.1Ω	t _{d(on)} t _r t _{d(off)} t _f	--- --- --- ---	15 8 35 20	35 85 85 65	nsec
Diode Forward Voltage (I _S =rated I _D , V _{GS} =0 V, T _J =25°C)		V _{SD}	---	---	-4.2	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25°C I _F =rated I _D di/dt=100 A/μsec	t _{rr} Q _{RR}	--- ---	170 ---	280 3.6	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	V _{GS} =0 Volts V _{DS} = -25 Volts f= 1 MHz	C _{iss} C _{oss} C _{rss}	--- --- ---	1400 600 200	--- --- ---	pF

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