



PRELIMINARY

SOLID STATE DEVICES, INC

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

**SFF9140-28**

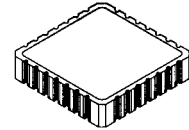
**Designer's Data Sheet**

**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

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

**28 PIN CLCC**



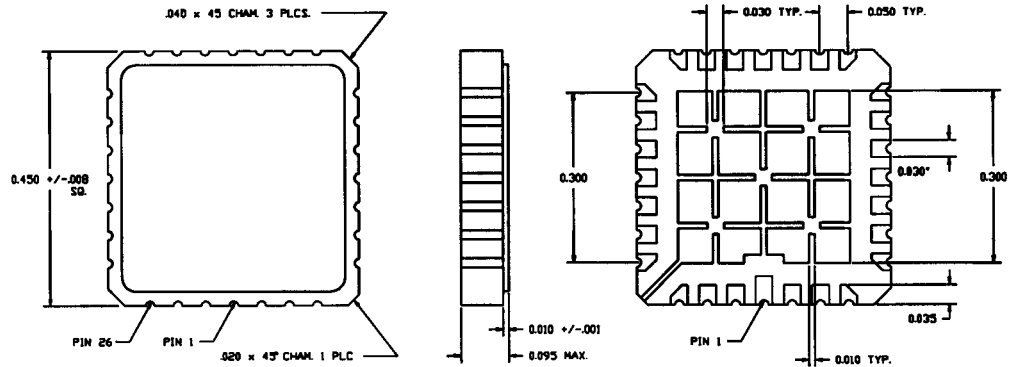
**MAXIMUM RATINGS**

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>	18 11	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>	3.5	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	PD	36 27	Watts
Single Pulse Avalanche Energy	EAS	500	mJ
Repetitive Avalanche Energy	EAR	12.5	mJ

**PACKAGE OUTLINE: 28 PIN CLCC**

**PIN OUT:**

**SOURCE: 1, 15-28  
DRAIN: 5-11  
GATE: 2, 3, 13, 14**



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

**DATA SHEET #: FP0011 B**

**MED**

# SFF9140-28

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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 (V <sub>GS</sub> =0 V, I <sub>D</sub> = 1mA)	BV <sub>DSS</sub>	-100	---	---	V
Drain to Source on State Resistance (V <sub>GS</sub> = -10 V) ID=11A ID=18A	R <sub>DS(on)</sub>	---	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 <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> ≥15V, I <sub>DS</sub> =11A)	g <sub>fs</sub>	6.2	8	---	S(τ)
Zero Gate Voltage Drain Current (V <sub>DS</sub> =80% 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	I <sub>GSS</sub>	---	---	-100 100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	Q <sub>g</sub> Q <sub>gs</sub> Q <sub>gd</sub>	31 ---	50 3 25	70 13 45	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	t <sub>d(on)</sub> t <sub>r</sub> t <sub>d(off)</sub> t <sub>f</sub>	---	15 8 35 20	35 85 85 65	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>	---	---	-4.2	V
Diode Reverse Recovery Time Reverse Recovery Charge	t <sub>rr</sub> Q <sub>RR</sub>	---	170 ---	280 3.6	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	C <sub>iss</sub> C <sub>oss</sub> C <sub>rss</sub>	---	1400 600 200	---	pF

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

