

SFF130-28

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

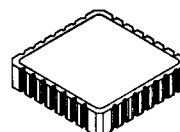
Designer's Data Sheet

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 surface mount package
- TX, TXV and Space Level screening available
- Replaces: IRF130 Types

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

28 PIN CLCC



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 @ $T_C=25^\circ\text{C}$	I_D	14	Amps
Continuous Drain Current @ $T_A=25^\circ\text{C}$		2.2	
Continuous Drain Current @ $T_C=100^\circ\text{C}$		9	
Operating and Storage Temperature	$T_{OP} \text{ \& } T_{STG}$	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	6	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	120	
Total Device Dissipation @ $T_C=25^\circ\text{C}$	P_D	21	Watts
Total Device Dissipation @ $T_C=55^\circ\text{C}$		6	
Total Device Dissipation @ $T_A=25^\circ\text{C}$		1	

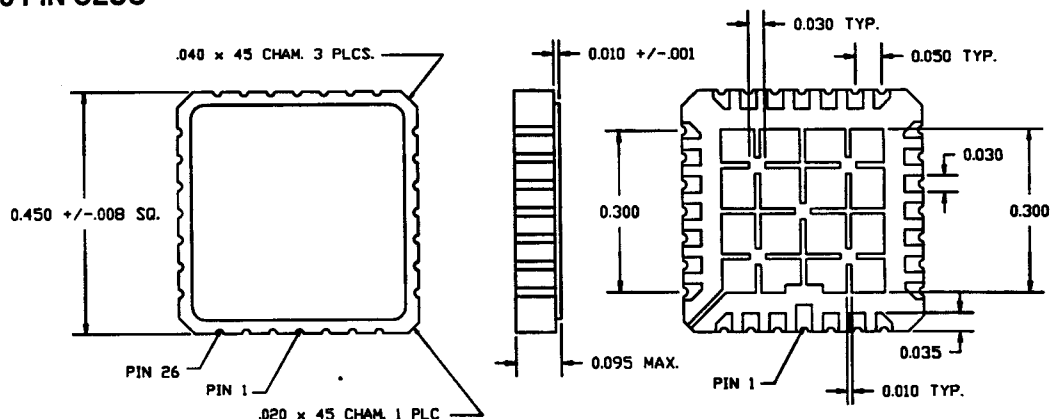
PACKAGE OUTLINE: 28 PIN CLCC

PIN OUT:

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

NOTE:

All Drain/Source Pins must be connected on the PC Board in order to maximize current capability and minimize RDS(on)



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

DATA SHEET #: F00023 B

MED

SFF130-28

PRELIMINARY

**SOLID STATE DEVICES, INC**
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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/ $^{\circ}\text{C}$
Drain to Source on State Resistance ($V_{GS}=10\text{ V}$)	$I_D = 9\text{ A}$ $I_D = 14\text{ A}$	$R_{DS(on)}$	---	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 ID)		g_{fs}	4.6	7	--	S(V)
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 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	$V_{GS}=10\text{ Volts}$ 50% rated V_{DS} Rated ID	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 ($I_S=\text{rated ID}$, $V_{GS}=0\text{ V}$, $T_J=25^{\circ}\text{C}$)		V_{SD}	---	1.15	1.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^{\circ}\text{C}$ $I_F=\text{rated ID}$ $di/dt=100\text{ A}/\mu\text{sec}$	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

For thermal derating curves and other characteristic curves please contact SSDI Marketing Department.