



PRELIMINARY

SOLID STATE DEVICES, INC

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

SFF330-28

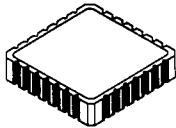
5.5 AMP 400 VOLTS 1.1Ω N-CHANNEL POWER MOSFET

Designer's Data Sheet

FEATURES:

- Rugged construction with polysilicon 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
- Ceramic Seals for improved hermeticity
- Hermetically sealed surface mount package
- TX, TXV and Space Level screening available
- Replaces: IRF330 Types

28 PIN CLCC



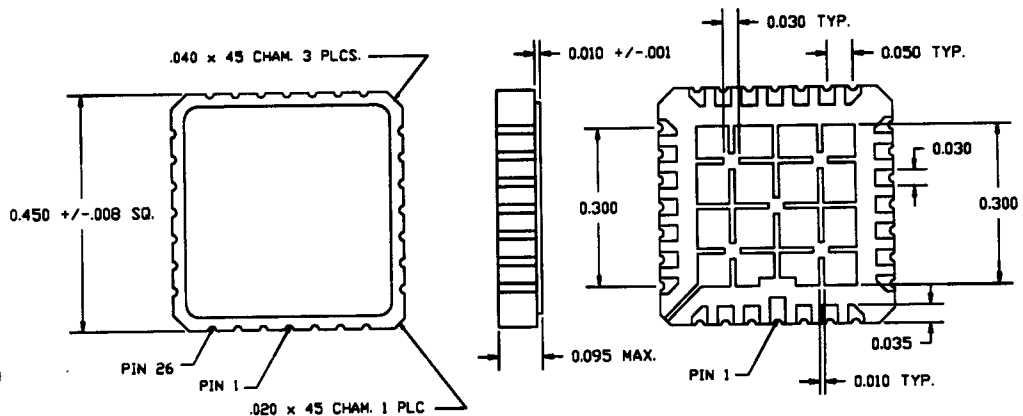
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{ds}	400	Volts
Gate to Source Voltage	V _{gs}	± 20	Volts
Continuous Drain Current	I _D	5.5	Amps
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	6	°C/W
Thermal Resistance, Junction to Ambient	R _{θJA}	120	°C/W
Total Device Dissipation @ TC=25°C	P _D	21	Watts
Total Device Dissipation @ TC=55°C		15	
Total Device Dissipation @ TA=25°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 #: F00127 A

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SSDI**SOLID STATE DEVICES, INC**14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**ELECTRICAL CHARACTERISTICS @ $T_J=25^\circ\text{C}$ (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}	400	440	---	V
Drain to Source on State Resistance ($V_{GS}=10\text{ V}$, $I_D=60\%$ Rated ID)	$R_{DS(on)}$	---	1.0	1.1	Ω
On State Drain Current ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $V_{GS}=10\text{ V}$)	$I_D(on)$	5.5	---	---	A
Gate Threshold Voltage ($V_{DS}=10\text{ V}$, V_{GS} , $I_D=250\mu\text{A}$)	$V_{GS(th)}$	2.0	3.2	4.0	V
Forward Transconductance ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $I_{DS}=60\%$ rated ID)	g_{fs}	2.9	4.3	---	$S(\bar{v})$
Zero Gate Voltage Drain Current ($V_{DS}=\text{max rated voltage}$, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated VDS, $V_{GS}=0\text{ V}$, $T_A=125^\circ\text{C}$)	I_{DSS}	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS I_{GSS}	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	$V_{GS}=10\text{ Volts}$ 80% rated VDS Rated ID Q_g Q_{gs} Q_{gd}	---	23 3.1 12	55 4.6 18	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=40\%$ rated VDS 50% rated ID $R_G=12\Omega$ $R_D=36\Omega$ $t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	11 19 37 16	17 29 56 24	nsec
Diode Forward Voltage ($I_S=\text{rated } I_D$, $V_{GS}=0\text{ V}$, $T_J=25^\circ\text{C}$)	V_{SD}	---	---	1.6	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^\circ\text{C}$ $I_F=\text{rated } I_D$ $di/dt=100\text{ A}/\mu\text{sec}$ t_{rr} Q_{RR}	140 0.93	310 2.0	660 4.3	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}	---	620 100 21	---	pF

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