



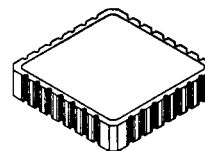
PRELIMINARY

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 surface mount package
- Low inductance leads
- TX, TXV and Space Level screening available
- Replaces: IRFC40 Types

SFFC40-28

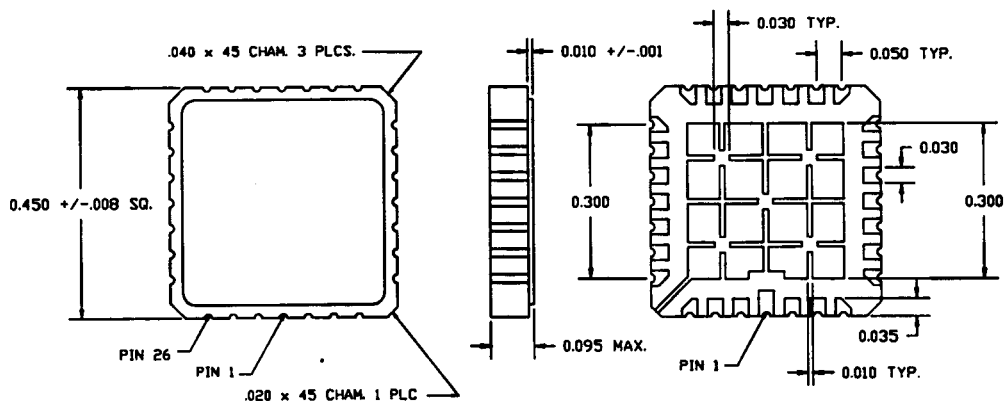
4.2*AMP
600 VOLTS
1.2Ω
N-CHANNEL
POWER MOSFET

28 PIN CLCC**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	600	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	4.2*	Amps
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	6.0	°C/W
Total Device Dissipation @ TC=25°C	P _D	21	Watts
Total Device Dissipation @ TC=80°C		11	

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)



* Rating based on size of chip & package. Device rating may vary depending on mounting and heatsink conditions. Consult SSDI Marketing department for thermal derating details.

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

DATA SHEET #: F00343 D

SFFC40-28

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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}	600	---	---	V
Drain to Source on State Resistance ($V_{GS}=10\text{ V}$, $I_D=3.7\text{A}$)		$R_{DS(on)}$	---	0.72	1.2	Ω
Gate Threshold Voltage ($V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$)		$V_{GS(th)}$	2.0	---	4.0	V
Forward Transconductance ($V_{DS}\geq 10\text{V}$, $I_{DS}=3.7\text{A}$)		g_{fs}	4.9	7.4	---	S(Ω)
Zero Gate Voltage Drain Current ($V_{DS}=\text{max rated voltage}$, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated V_{DS} , $V_{GS}=0\text{ V}$, $T_A=125^{\circ}\text{C}$)		I_{DSS}	---	---	100 500	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	$V_{GS}=10\text{ Volts}$ $V_{DS}=360\text{V}$ $I_D=6.2\text{A}$	Q_g Q_{gs} Q_{gd}	---	42 6 22	60 8.3 30	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated V_{DS} $I_D=6.2\text{A}$ $R_G=9.1\Omega$ $R_D=47\Omega$	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	13 18 55 20	20 27 85 30	nsec
Diode Forward Voltage ($I_S=\text{rated } I_D$, $V_{GS}=0\text{ V}$, $T_J=25^{\circ}\text{C}$)		V_{SD}	---	---	1.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^{\circ}\text{C}$ $I_F=6.2\text{A}$ $di/dt=100\text{ A}/\mu\text{sec}$	t_{rr} Q_{RR}	---	470 4.0	940 7.9	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}	---	1300 180 75	1400 400 200	pF

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