PRELIMINARY

SFF120-28Q

SOLID STATE DEVICES, INC.

14005 Stage Road * Santa Fe Springs, Ca 90670
Phone: (562) 404-4474 * Fax: (562) 404-1773

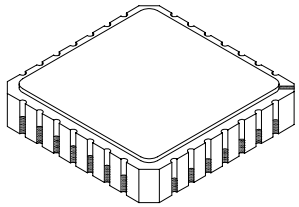
DESIGNER'S DATA SHEET

9.2 AMPS
100 VOLTS
0.35Ω
QUAD N-CHANNEL
POWER MOSFET

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 4x IRF120 Types in One Package**

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	I_D	**9.2**	**Amps**
Operating and Storage Temperature	T_{op} & T_{stg}	**-55 to +150**	**°C**
Thermal Resistance, Junction to Case (All Four)	$R_{\theta JC}$	**10**	**°C/W**
Total Device Dissipation **@ TC = 25°C** **@ TC = 70°C**	P_D	**12.5** **9.5**	**Watts**

PACKAGE OUTLINE: 28

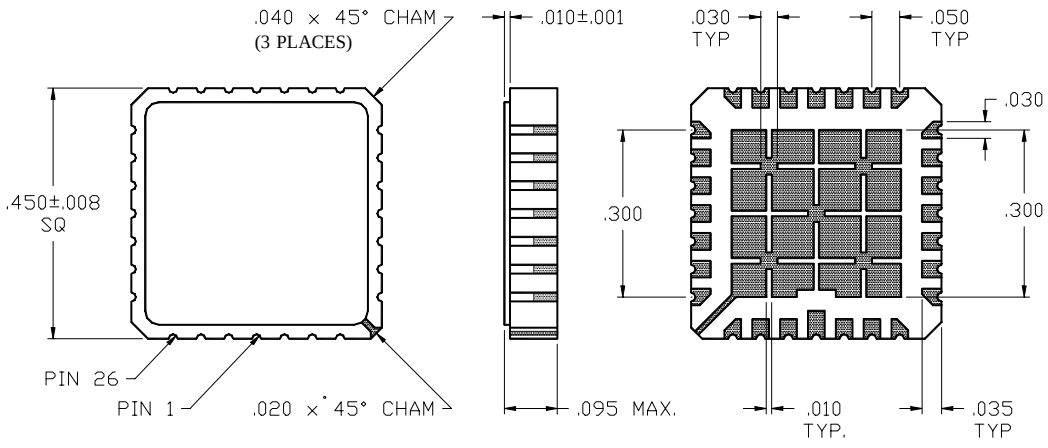
PIN OUT:

MOSFET 1
DRAIN: 5, 6, 7
GATE: 1
SOURCE: 2, 3, 4

MOSFET 2
DRAIN: 9, 10, 11
GATE: 8
SOURCE: 12, 13, 14

MOSFET 3
DRAIN: 19, 20, 21
GATE: 15
SOURCE: 16, 17, 18

MOSFET 4
DRAIN: 23, 24, 25
GATE: 22
SOURCE: 26, 27, 28



NOTE: All drain/source pins must be connected on the PC board in order to maximize current carrying capability and to minimize RDS (on)

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

DATA SHEET #: F00225B

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ELECTRICAL CHARACTERISTICS @ T_J =25°C (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (VGS =0 V, ID =250µA)		**BV_{DSS}**	100	-	-	**V**
Drain to Source ON State Resistance (VGS = 10 V, 60% of Rated ID)		**$R_{DS(on)}$**	-	-	0.35	Ω
ON State Drain Current (VDS > ID(on) x RDS(on) Max, VGS = 10 V)		**$I_{D(on)}$**	9.2	-	-	**A**
Gate Threshold Voltage (VDS =VGS, ID =250µA)		**$V_{GS(th)}$**	2.0	-	4.0	**V**
Forward Transconductance (VDS > ID(on) x RDS (on) Max, IDS =60% rated ID)		**gf_s**	2.7	4.1	-	**S(℧)**
Zero Gate Voltage Drain Current (V_{DS} = max rated Voltage, V_{GS} = 0V) (V_{DS} = 80% rated V_{DS}, V_{GS} = 0V, T_A = 125°C)		**I_{DSS}**	- -	- -	25 250	**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**	VGS = 10 V 80% rated VDS 60% rated ID	**Qg** **Qgs** **Qgd**	- - -	10.7 2.9 5.1	16 4.4 7.7	**nC**
Turn on Delay Time **Rise Time** **Turn off DELAY Time** **Fall Time**	VDD =50% rated VDS 50% rated ID RG = 18 Ω	**$t_{d\ (on)}$** **tr** **$t_{d\ (off)}$** **tf**	- - - -	13 30 19 20	20 45 29 30	**nsec**
Diode Forvard Voltage (I_S = rated I_D, V_{GS} = 0V, T_J = 25°C)		**V_{SD}**	-	-	2.5	**V**
Diode Reverse Recovery Time **Reverse Recovery Charge**	TJ =25°C IF = rated ID di/dt = 100A/µsec	**t_{rr}** **Q_{RR}**	55 0.25	140 0.65	260 1.3	**nsec** **µC**
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	VGS =0 Volts VDS =25 Volts f =1 MHz	**Ciss** **Coss** **Crss**	- - -	350 130 36	- - -	**pF**

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

NOTES: