



PRELIMINARY

SOLID STATE DEVICES, INC

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**SFF220-28**

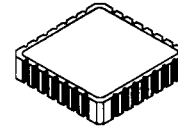
**Designer's Data Sheet**

**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: IRF220 Types

**5 AMP  
200 VOLTS  
0.8 Ω  
N-CHANNEL  
POWER MOSFET**

**28 PIN CLCC**



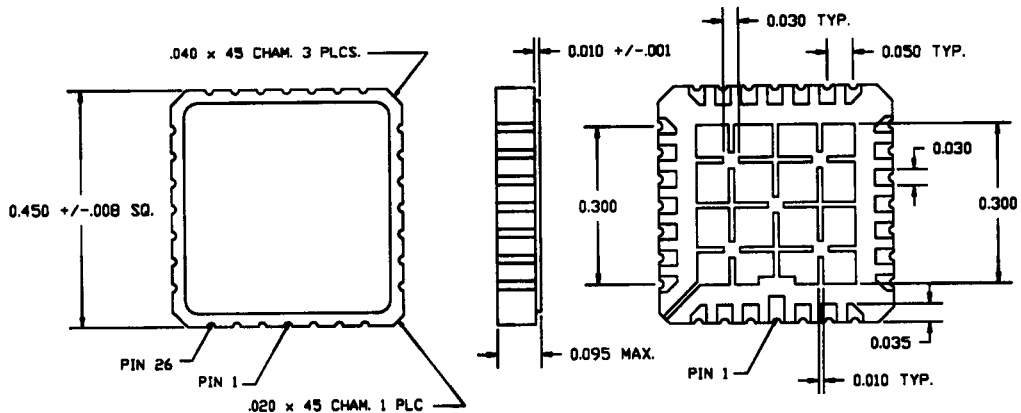
**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	200	Volts
Gate to Source Voltage	V <sub>GS</sub>	± 20	Volts
Continuous Drain Current @ TC=25°C Continuous Drain Current @ TA=25°C	I <sub>D</sub>	5.0 0.8	Amps
Operating and Storage Temperature	T <sub>op</sub> & T <sub>stg</sub>	-55 to +150	°C
Thermal Resistance, Junction to Case Thermal Resistance, Junction to Ambient	R <sub>θJC</sub> R <sub>θJA</sub>	10 120	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C Total Device Dissipation @ TA=25°C	P <sub>D</sub>	12.5 9.5 1.0	Watts

**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 #: F00125 A**

**MED**

**ELECTRICAL CHARACTERISTICS @ T<sub>J</sub>=25 °C (Unless Otherwise Specified)**

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (VGS=0 V, ID=250µA)		BV <sub>DSS</sub>	200	230	---	V
Drain to Source on State Resistance (VGS=10 V, ID=60% Rated ID)		R <sub>DS(on)</sub>	---	0.7	0.8	Ω
On State Drain Current (VDS > ID(on) X RDS(on) Max, VGS=10 V)		ID(on)	5.0	6.0	---	A
Gate Threshold Voltage (VDS=VGS, ID=250µA)		VGS(th)	2.0	3.3	4.0	V
Forward Transconductance (VDS > ID(on) X RDS(on) Max, IDS=50% rated ID)		g <sub>fs</sub>	1.3	2.5	---	S(Ω)
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125°C)		I <sub>DSS</sub>	---	---	250 1000	µA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	I <sub>GSS</sub>	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	VGS=10 Volts 80% rated VDS Rated ID	Q <sub>g</sub> Q <sub>gs</sub> Q <sub>gd</sub>	---	11 5.0 6.0	15 8 10	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	VDD=50% rated VDS 50% rated ID RG=50Ω	t <sub>d(on)</sub> t <sub>r</sub> t <sub>d(off)</sub> t <sub>f</sub>	---	20 30 50 30	40 60 100 60	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, T <sub>J</sub> =25°C)		VSD	---	1.0	2.0	V
Diode Reverse Recovery Time Reverse Recovery Charge	T <sub>J</sub> =25°C I <sub>F</sub> =rated ID di/dt=100 A/µsec	t <sub>rr</sub> Q <sub>RR</sub>	---	350 2.3	---	nsec µC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f= 1 MHz	C <sub>iss</sub> C <sub>oss</sub> C <sub>rss</sub>	---	450 150 40	600 300 80	pF

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