PRELIMINARY

SFF450/61

SOLID STATE DEVICES, INC

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

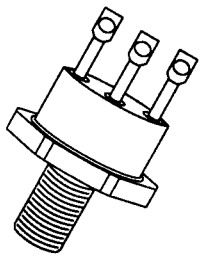
13 AMP 500 VOLTS 0.40Ω N-CHANNEL POWER MOSFET

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 power package
- TX, TXV and Space Level screening available
- Replaces: IRF450 Types

TO-61



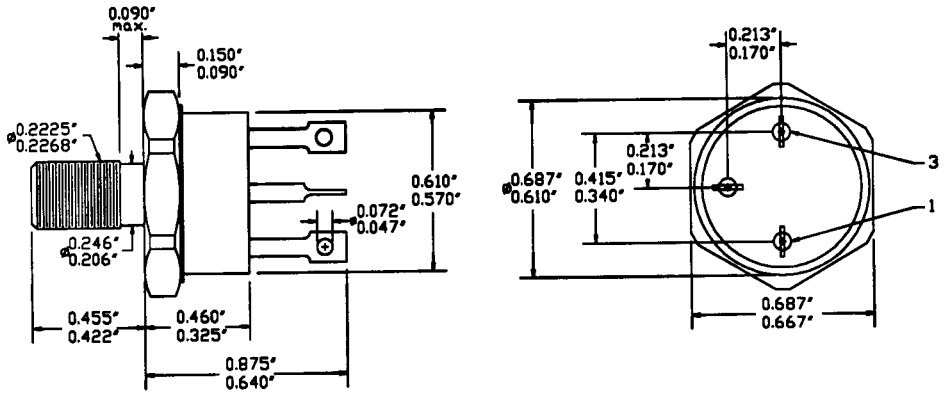
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V_{DS}	500	Volts
Gate to Source Voltage	V_{GS}	±20	Volts
Continuous Drain Current	I_D	13	Amps
Operating and Storage Temperature	T_{op} & T_{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	P_D	125 95	Watts

PACKAGE OUTLINE: TO-61

PIN OUT:

PIN 1: SOURCE
PIN 2: GATE
PIN 3: DRAIN



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	DATA SHEET #: F00103 A	MED

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ELECTRICAL CHARACTERISTICS @ TJ=25 C (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (VGS=0 V, ID=250μA)		BV_{DSS}	500	---	---	V
Drain to Source on State Resistance (VGS=10 V, ID=7.2 A)		$R_{DS(on)}$	---	0.35	0.40	Ω
On State Drain Current (VDS >ID(on) X RDS(on) Max, VGS=10 V		$I_{D(on)}$	13	---	----	A
Gate Threshold Voltage (VDS=VGS, ID=250μA)		$V_{GS(th)}$	2.0	---	4.0	V
Forward Transconductance (VDS ≥ 50 V, IDS=7.2 A)		g_{fs}	8.7	13	---	S(℧)
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125°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**	VGS=10 Volts 80% rated VDS Rated ID	Q_g Q_{gs} Q_{gd}	--- --- ---	83 11 42	120 17 64	nC
Turn on Delay Time **Rise Time** **Turn Off Delay Time** **Fall Time**	VDD=50% rated VDS 50% rated ID RG= 6.2 Ω RD=20W	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	--- --- --- ---	18 44 70 40	27 66 100 60	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, TJ=25°C)		V_{SD}	---	---	1.4	V
Diode Reverse Recovery Time **Reverse Recovery Charge**	TJ=25°C IF=rated ID di/dt=100 A/μsec	t_{rr} Q_{RR}	280 3.2	580 6.7	1200 14	nsec μC
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	VGS=0 Volts VDS=25 Volts f= 1 MHz	C_{iss} C_{oss} C_{rss}	--- ---	2700 350 75	--- --- ---	pF

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