



PRELIMINARY

SOLID STATE DEVICES, INC

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

SFF450/61

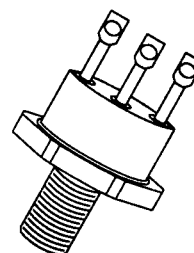
Designer's Data Sheet

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

**13 AMP
500 VOLTS
0.40Ω
N-CHANNEL
POWER MOSFET**

TO-61



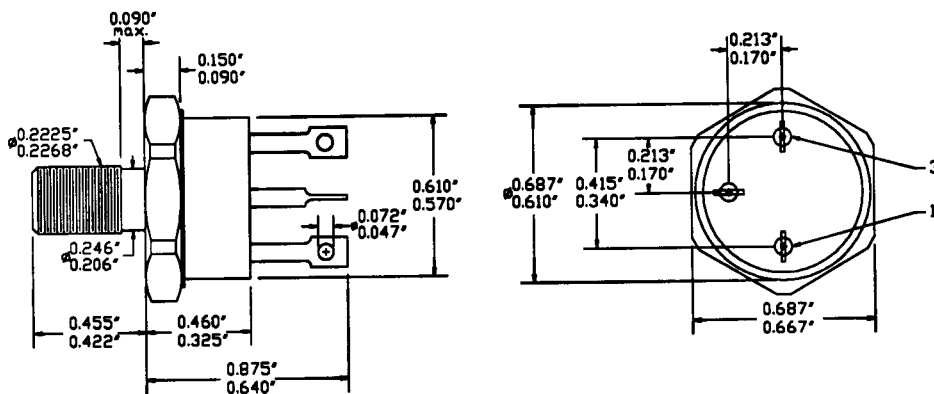
MAXIMUM RATINGS

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 _{θJC}	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

SFF450/61

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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=250 μ A)		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 R _{DS(on)} Max, VGS=10 V)		ID(on)	13	---	---	A
Gate Threshold Voltage (VDS=VGS, ID=250 μ A)		VGS(th)	2.0	---	4.0	V
Forward Transconductance (VDS \geq 50 V, IDS=7.2 A)		g _{fs}	8.7	13	---	S(τ)
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125° C)		IDSS	---	---	250 1000	μ A
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	IGSS	---	---	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	td(on) tr td(off) tf	---	18 44 70 40	27 66 100 60	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, T _J =25° C)		VSD	---	---	1.4	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25° C IF=rated ID di/dt=100 A/ μ sec	t _{rr} Q _{RR}	280 3.2 ---	580 6.7	1200 14	nsec μ C
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.