



SOLID STATE DEVICES, INC

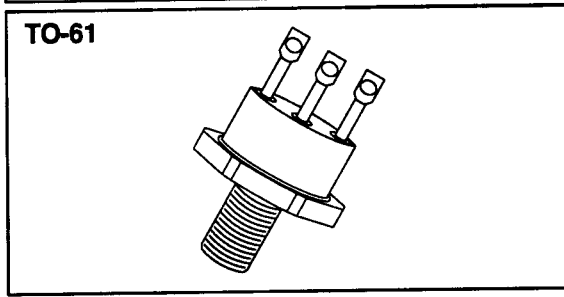
14849 Firestone Boulevard · La Mirada, CA 90638
 Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

SFF450/61

**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

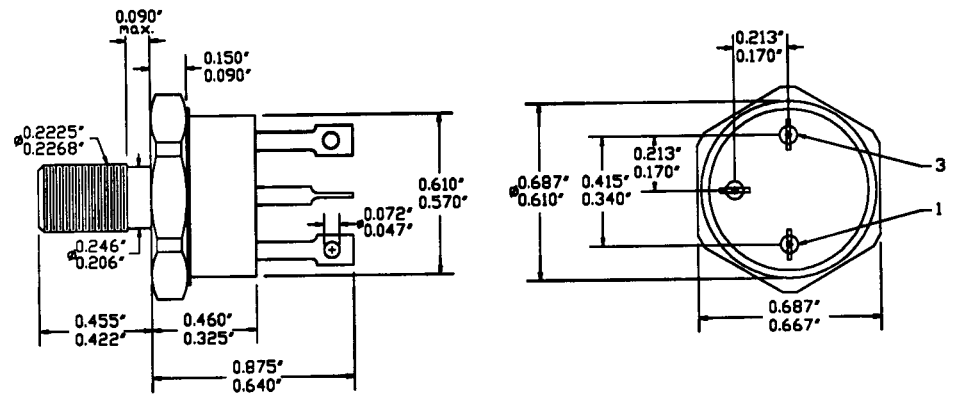


MAXIMUM RATINGS

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

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

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (V _{GS} =0 V, I _D =250 μ A)		BV _{DSS}	500	---	---	V
Drain to Source on State Resistance (V _{GS} =10 V, I _D =7.2 A)		R _{DS(on)}	---	0.35	0.40	Ω
On State Drain Current (V _{DS} > I _{D(on)} X R _{DS(on)} Max, V _{GS} =10 V)		I _{D(on)}	13	---	---	A
Gate Threshold Voltage (V _{DS} =V _{GS} , I _D =250 μ A)		V _{GS(th)}	2.0	---	4.0	V
Forward Transconductance (V _{DS} \geq 50 V, I _{DS} =7.2 A)		g _{fs}	8.7	13	---	S(τ)
Zero Gate Voltage Drain Current (V _{DS} =max rated voltage, V _{GS} =0 V) (V _{DS} =80% rated V _{DS} , V _{GS} =0 V, T _A =125° C)		I _{DSS}	---	---	250 1000	μ A
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 Volts 80% rated V _{DS} Rated I _D	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	V _{DD} =50% rated V _{DS} 50% rated I _D R _G = 6.2 Ω R _D =20W	t _{d(on)} t _r t _{d(off)} t _f	---	18 44 70 40	27 66 100 60	nsec
Diode Forward Voltage (I _S =rated I _D , V _{GS} =0 V, T _J =25° C)		V _{SD}	---	---	1.4	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25° C I _F =rated I _D 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	V _{GS} =0 Volts V _{DS} =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.