



PRELIMINARY

SOLID STATE DEVICES, INC

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

Designer's Data Sheet

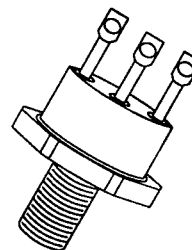
FEATURES:

- 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: IRF250 Types

SFF250/61

30 AMP
200 VOLTS
0.085 Ω
N-CHANNEL
POWER MOSFET

TO-61

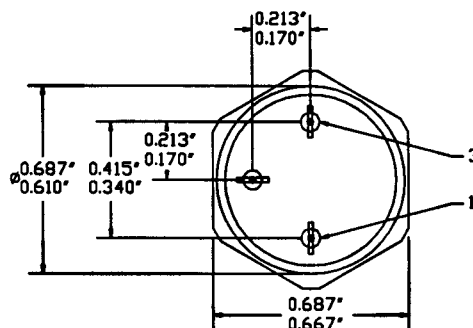
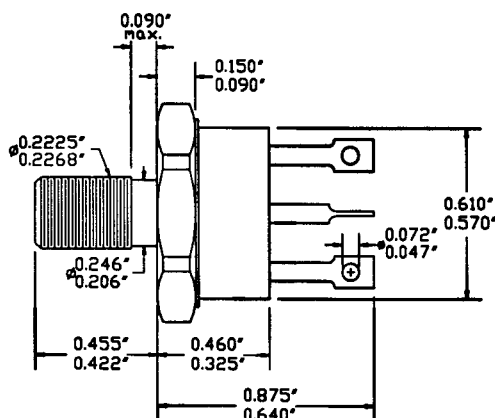


MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	200	Volts
Gate to Source Voltage	V _{GS}	± 20	Volts
Continuous Drain Current	I _D	30	Amps
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	4	°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. SSDI's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: F00055 B

MED

SFF250/61

PRELIMINARY

SSDI**SOLID STATE DEVICES, INC**14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**ELECTRICAL CHARACTERISTICS @ $T_J=25^\circ\text{C}$ (Unless Otherwise Specified):**

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage ($V_{GS}=0\text{ V}$, $I_D=250\mu\text{A}$)		BV_{DSS}	200	---	---	V
Drain to Source on State Resistance ($V_{GS}=10\text{ V}$, $I_D=60\%$ Rated ID)		$R_{DS(on)}$	---	0.08	0.085	Ω
On State Drain Current ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $V_{GS}=10\text{ V}$)		$I_D(on)$	30	---	---	A
Gate Threshold Voltage ($V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$)		$V_{GS(th)}$	2	3	4	V
Forward Transconductance ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $I_{DS}=60\%$ rated ID)		g_{fs}	13	15	---	S(V)
Zero Gate Voltage Drain Current ($V_{DS}=80\%$ rated voltage, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated VDS, $V_{GS}=0\text{ V}$, $T_A=125^\circ\text{C}$)		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	$V_{GS}=10\text{ Volts}$ 50% rated VDS Rated ID	Q_g Q_{gs} Q_{gd}	---	80 12 44	120 20 65	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated VDS 50% rated ID $R_G=6.2\ \Omega$	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	20 120 70 80	30 180 100 120	nsec
Diode Forward Voltage ($I_S=\text{rated ID}$, $V_{GS}=0\text{ V}$, $T_J=25^\circ\text{C}$)		V_{SD}	---	1.1	2.0	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^\circ\text{C}$ $I_F=10\text{A}$ $di/dt=100\text{ A}/\mu\text{sec}$	t_{rr} Q_{RR}	140 1.8	300 3.8	630 8	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	$V_{GS}=0\text{ Volts}$ $V_{DS}=25\text{ Volts}$ $f=1\text{ MHz}$	C_{iss} C_{oss} C_{rss}	---	2600 650 150	---	pF

SAFE OPERATING AREA (S.O.A.)
 $T_C = 25^\circ\text{C}$, D.C. CONDITION