



PRELIMINARY

SOLID STATE DEVICES, INC.

14830 Valley View Av. * La Mirada, Ca 90670
Phone: (562) 404-7855 * Fax: (562) 404-1773

SFF1310M SFF1310Z

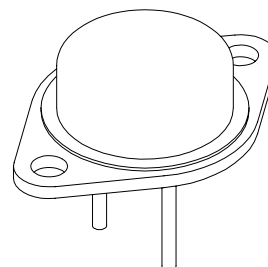
**40 AMPS
200 VOLTS
0.050 Ω
N-CHANNEL
POWER MOSFET**

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
- Hermetically sealed package
- TX, TXV, and Space Level screening available
- Replaces: SMM40N20 Type

TO-3



MAXIMUM RATINGS

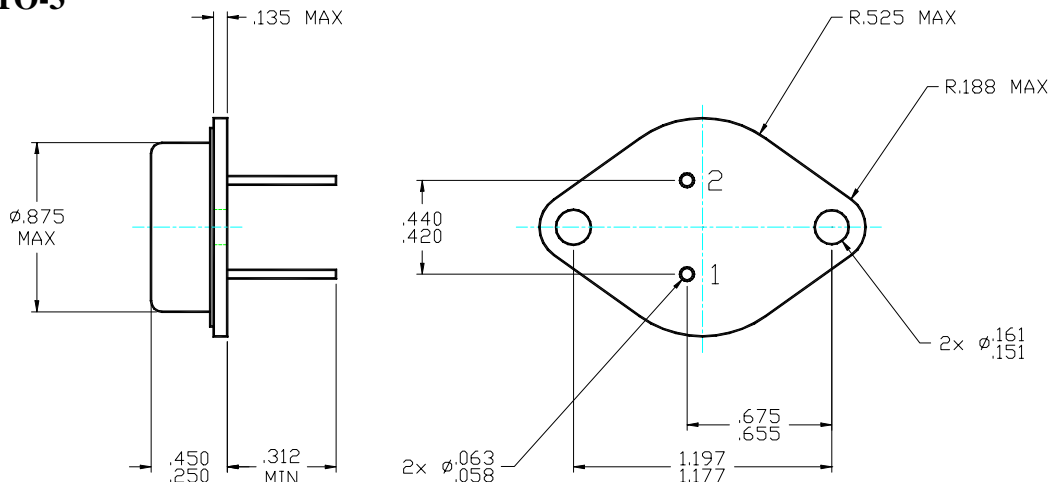
CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	200	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	40	Amps
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	0.5	°C/W
Total Device Dissipation	P _D	250 190	Watts

@ TC = 25°C
@ TC = 55°C

PACKAGE OUTLINE: TO-3

PINOUT:

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



NOTE: All specifications are subject to change without notification. SCDs for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: FT0004A

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ELECTRICAL CHARACTERISTICS @ $T_J=25^{\circ}\text{C}$ (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (VGS = 0 V, ID = 250 μ A)		BV_{DSS}	200	-	-	V
Drain to Source ON State Resistance (VGS = 10 V, 60% of Rated ID)	$I_D = 37.5\text{A}$	R_{DS(on)}	- -	- -	0.050	Ω
ON State Drain Current (VDS > ID(on) x RDS(on) Max, VGS = 10 V)		ID(on)	50	-	-	A
Gate Threshold Voltage (VDS = VGS, ID = 4mA)		VGS(th)	2.0	-	4.0	V
Forward Transconductance (VDS > ID(on) x RDS (on) Max, IDS = 50% rated ID)		gfs	20	25	-	S(O)
Zero Gate Voltage Drain Current (VGS = 0V) $V_{DS} = \text{max rated Voltage, } T_A = 25^{\circ}\text{C}$ $V_{DS} = 80\% \text{ rated } V_{DS}, T_A = 125^{\circ}\text{C}$		IDSS	- -	- -	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	IGSS	- -	- -	+100 -100	nA
Total Gate Charge	VGS = 10 V	Qg	-	190	220	nC
Gate to Source Charge	50% rated VDS	Qgs	-	35	50	
Gate to Drain Charge	50% rated ID	Qgd	-	95	120	
Turn on Delay Time	VDD = 50%	td(on)	-	28	35	nsec
Rise Time	rated VDS	tr	-	38	40	
Turn off DELAY Time	50% rated ID	td(off)	-	110	130	
Fall Time	RG = 6.2 Ω	tf	-	30	35	
Diode Forward Voltage (IS = rated ID, VGS = 0V, TJ = 25°C)		VSD	-	-	1.50	V
Diode Reverse Recovery Time	$T_J = 25^{\circ}\text{C}$	t_{rr}	-	-	225	nsec
Reverse Recovery Charge	IF = 10A di/dt = 100A/ μsec	QRR	-	1.5	-	μC
Input Capacitance	VGS = 0 Volts	Ciss	-	4400	-	pF
Output Capacitance	VDS = 25 Volts	Coss	-	800	-	
Reverse Transfer Capacitance	f = 1 MHz	Crss	-	285	-	

NOTES: