

SOLID STATE DEVICES, INC.

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

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**

SFF1310M

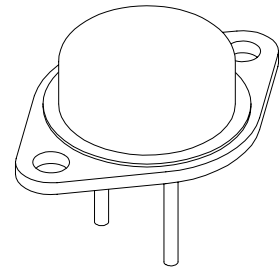
SFF1310Z

40 AMPS
200 VOLTS

0.050 Ω

N-CHANNEL POWER MOSFET

TO-3



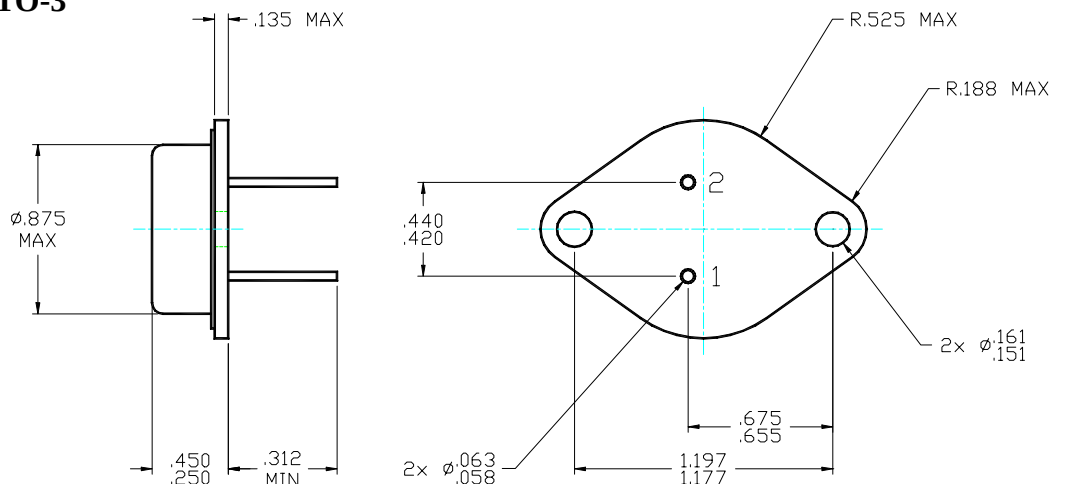
MAXIMUM RATINGS

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	$R_{\theta JC}$	0.5	°C/W
Total Device Dissipation @ TC = 25°C @ TC = 55°C	P_D	250 190	Watts

PACKAGE OUTLINE: TO-3

PIN OUT:

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

www.DataSheet4U.com

SFF1310M**SFF1310Z**

PRELIMINARY

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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 =250μA)		BV _{DSS}	200	-	-	V
Drain to Source ON State Resistance I _D = 37.5A (VGS = 10 V, 60% of Rated ID)		R _{DS(on)}	- -	- -	0.050	Ω
ON State Drain Current (VDS > ID(on) x RDS(on) Max, VGS = 10 V)		I _{D(on)}	50	-	-	A
Gate Threshold Voltage (VDS =VGS, ID = 4mA)		V _{GS(th)}	2.0	-	4.0	V
Forward Transconductance (VDS > ID(on) x RDS (on) Max, IDS = 50% rated ID)		g _{fs}	20	25	-	S(Ω)
Zero Gate Voltage Drain Current (V _{GS} = 0V) V _{DS} = max rated Voltage, T _A = 25°C V _{DS} = 80% rated V _{DS} , T _A = 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 V 50% rated VDS 50% rated ID	Q _g Q _{gs} Q _{gd}	- - -	190 35 95	220 50 120	nC
Turn on Delay Time Rise Time Turn off DELAY Time Fall Time	VDD =50% rated VDS 50% rated ID RG = 6.2 Ω	t _{d (on)} t _r t _{d (off)} t _f	- - - -	28 38 110 30	35 40 130 35	nsec
Diode Forward Voltage (I _S = rated I _D , V _{GS} = 0V, T _J = 25°C)		V _{SD}	-	-	1.50	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25°C IF = 10A di/dt = 100A/μsec	t _{rr} Q _{RR}	- -	- 1.5	225 -	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS =0 Volts VDS =25 Volts f =1 MHz	C _{iss} C _{oss} C _{rss}	- - -	4400 800 285	- - -	pF

NOTES: