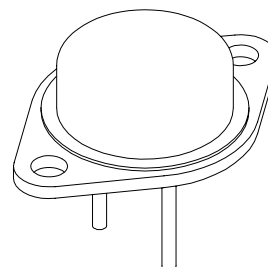




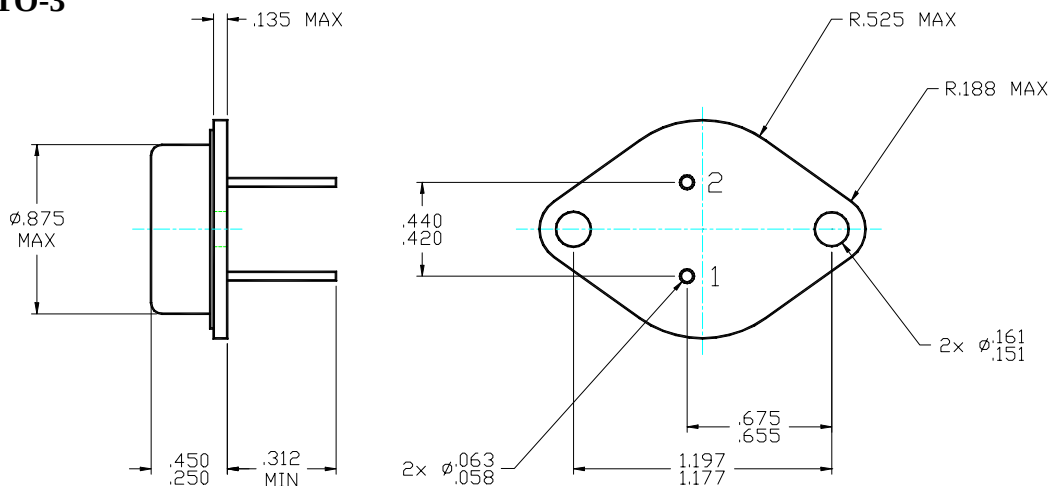
PRELIMINARY

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	$T_{op} \text{ \& } T_{stg}$	-55 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.5	$^{\circ}C/W$
Total Device Dissipation	P_D	250 190	Watts
@ TC = 25 $^{\circ}C$ @ TC = 55 $^{\circ}C$			

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**

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 (V _{GS} = 0 V, I _D = 250μA)		BV_{DSS}	200	-	-	V
Drain to Source ON State Resistance I _D = 37.5A (V _{GS} = 10 V, 60% of Rated ID)		R_{DS(on)}	- -	- -	0.050	Ω
ON State Drain Current (V _{DS} > I _{D(on)} x R _{DS(on)} Max, V _{GS} = 10 V)		I_{D(on)}	50	-	-	A
Gate Threshold Voltage (V _{DS} = V _{GS} , I _D = 4mA)		V_{GS(th)}	2.0	-	4.0	V
Forward Transconductance (V _{DS} > I _{D(on)} x R _{DS(on)} Max, I _{DS} = 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 V _{GS}	I_{GSS}	-	-	+100	nA
			-	-	-100	
Total Gate Charge	V _{GS} = 10 V	Q_g	-	190	220	nC
Gate to Source Charge	50% rated V _{DS}	Q_{gs}	-	35	50	
Gate to Drain Charge	50% rated I _D	Q_{gd}	-	95	120	
Turn on Delay Time	V _{DD} = 50%	t_{d(on)}	-	28	35	nsec
Rise Time	rated V _{DS}	t_r	-	38	40	
Turn off DELAY Time	50% rated I _D	t_{d(off)}	-	110	130	
Fall Time	R _G = 6.2 Ω	t_f	-	30	35	
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 I _F = 10A di/dt = 100A/μsec	t_{rr}	-	-	225	nsec
		Q_{RR}	-	1.5	-	μC
Input Capacitance	V _{GS} = 0 Volts	C_{iss}	-	4400	-	pF
Output Capacitance	V _{DS} = 25 Volts	C_{oss}	-	800	-	
Reverse Transfer Capacitance	f = 1 MHz	C_{rss}	-	285	-	

NOTES: