



PRELIMINARY

SOLID STATE DEVICES, INC.

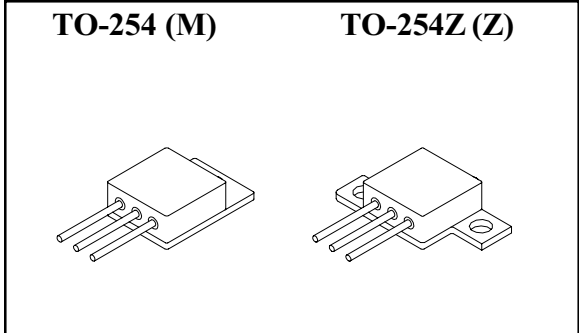
14830 Valley View Av. * La Mirada, Ca 90670
 Phone: (562) 404-7855 * Fax: (562) 404-1773

DESIGNER'S DATA SHEET

SFF50N20M
SFF50N20Z

50 AMPS
200 VOLTS
0.055 Ω
N-CHANNEL
POWER MOSFET

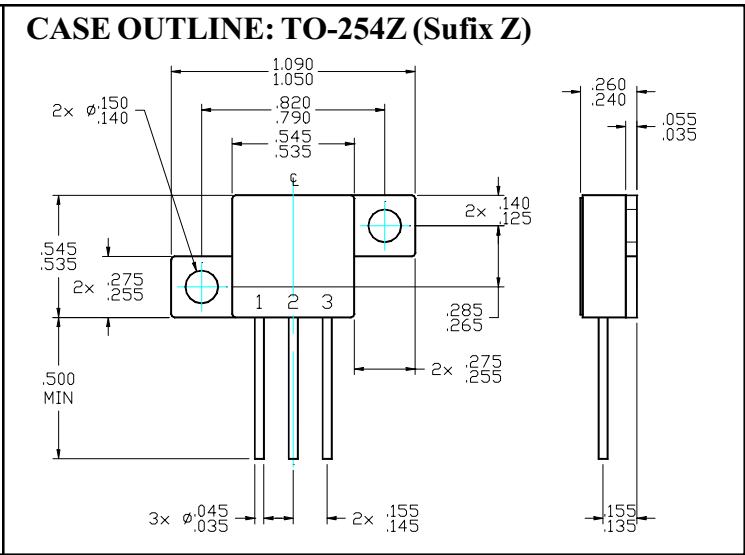
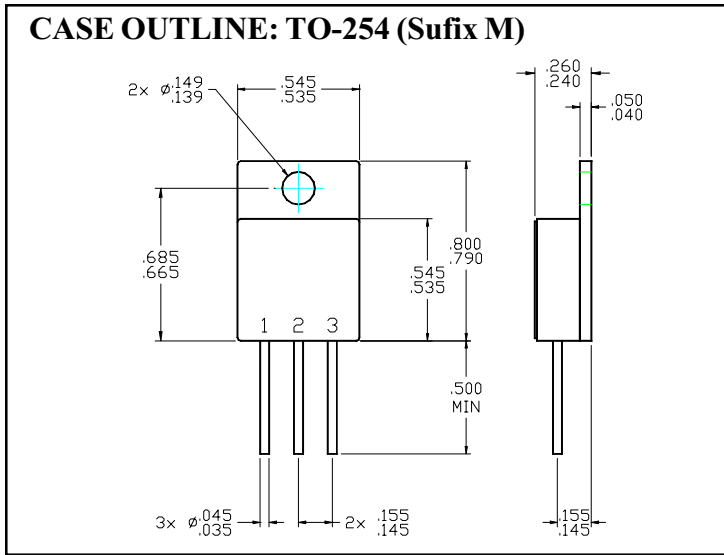
- FEATURES:**
- Rugged construction with polysilicon gate
 - Low RDS (on) and high transconductance
 - Excellent high temperature stability
 - Very fast switching speed
 - Fast recovery and superior dv/dt performance
 - Increased reverse energy capability
 - Low input and transfer capacitance for easy paralleling
 - Hermetically sealed package
 - TX, TXV, and Space Level screening available
 - Replaces: IXTH50N20 Types



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	50	Amps
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	0.83	°C/W
Total Device Dissipation	P _D	150 114	Watts

@ TC = 25°C
 @ TC = 55°C



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

DATA SHEET #: F00129E

SFF50N20M
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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 (V _{GS} = 10 V, 60% of Rated ID)		R_{DS(on)}	-	-	0.055	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 -100	nA
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% rated V _{DS}	t_{d(on)}	-	28	35	nsec
Rise Time	50% rated I _D	t_r	-	33	40	
Turn off Delay Time	R _G = 6.2 Ω	t_{d(off)}	-	110	130	
Fall Time	V _{GS} = 10V	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	T _J = 25°C	t_{rr}	-	-	225	nsec
Reverse Recovery Charge	I _F = 10A di/dt = 100A/μsec	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: