SOLID STATE DEVICES, INC.
14830 Valley View Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773

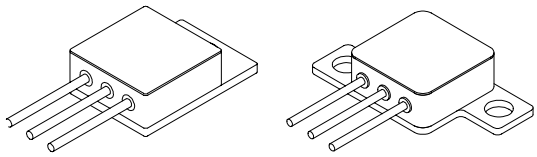
SFF70N10M
SFF70N10Z

DESIGNER'S DATA SHEET

70 AMP
600 VOLT
0.030Ω
N-CHANNEL
POWER MOSFET

FEATURES:
- **Rugged construction with poly silicon gate**
- **Ultra 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: SMM70N10 Types**

TO-254 (M) **TO-254Z (Z)**

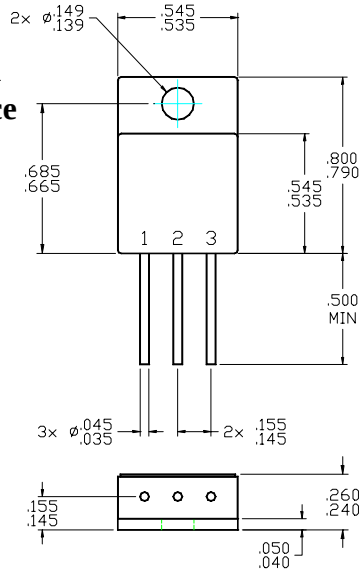


MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V_{DS}	100	Volts
Gate to Source Voltage	V_{GS}	± 20	Volts
Continuous Drain Current	I_D	56[1/]	Amps
Operating and Storage Temperature	T_{op} & T_{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	.83	°C/W
Total Device Dissipation @ TC = 25°C @ TC = 55°C	P_D	150 114	Watts

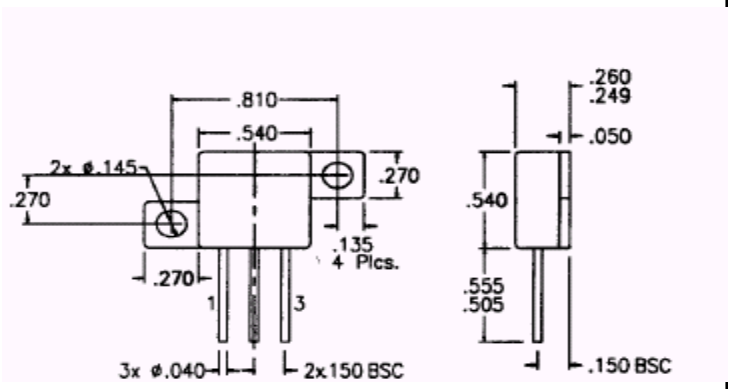
CASE OUTLINE: TO-254 (Sufix M)

Pin Out:
Pin 1: Drain
Pin 2: Source
Pin 3: Gate



CASE OUTLINE: TO-254Z (Sufix Z)

Pin Out:
Pin 1: Drain
Pin 2: Source
Pin 3: Gate



Available with Glass or Ceramic Seals. Contact Facory for details.

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

DATA SHEET #: F00247B

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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}**	100	-	-	**V**
Drain to Source on State Resistance (VGS = 10 V,Tc = 150°C)		**$R_{DS(on)}$**	-	0.025	0.03	**Ω**
On State Drain Current (VDS > ID(on) x RDS(on) Max, VGS = 10 V)		**$I_{D(on)}$**	70	-	-	**A**
Gate Threshold Voltage (VDS = VGS, ID = 250µA)		**$V_{GS(th)}$**	2	-	4.0	**V**
Forward Transconductance (VDS > ID(on) X RDS (on) Max, IDS=60% rated ID)		**gf_s**	20	40	-	**Smho**
Zero Gate Voltage Drain Current (V_{DS} = 80% rated voltage, V_{GS} = 0V) (V_{DS} = 80% rated V_{DS}, V_{GS} = 0V, T_A = 125°C)		**I_{DSS}**	- -	- -	250 250	**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 80% rated VDS Rated ID	**Qg** **Qgs** **Qgd**	- - -	110 30 50	140 40 80	**nC**
Turn on Delay Time **Rise Time** **Turn off DelayTime** **Fall Time**	VDD =50% rated VDS ID=70A RG=8Ω VGS=10V	**$t_{d\ (on)}$** **tr** **$t_{d\ (off)}$** **tf**	- - - -	25 15 80 15	40 180 100 40	**nsec**
Diode Forvard Voltage (I_S = rated I_D, V_{GS} = 0V, T_J = 25°C)		**V_{SD}**	-	1.0	1.8	**V**
Diode Reverse Recovery Time **Reverse Recovery Charge**	TJ =25°C IF = ID di/dt = 100A/µsec	**t_{rr}** **Q_{RR}**	-	1.25 0.3	200 -	**nsec** **µC**
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	VGS =0 Volts VDS =25 Volts f =1 MHz	**Ciss** **Coss** **Crss**	- - -	4100 1200 310	- - -	**pF**

For thermal derating curves and other characteristic curves please contact SSDI Marketing Department.

NOTES:

1/ Maximum current limited by package, die rated at 70A.