SSDI

SOLID STATE DEVICES, INC.

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

SFF70N10M
SFF70N10Z

**70 AMP
600 VOLT
0.030Ω
N-CHANNEL
POWER MOSFET**

DESIGNER'S DATA SHEET

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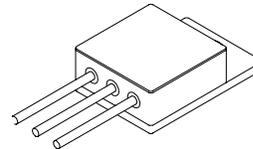
TO-254 (M)   **TO-254Z (Z)**
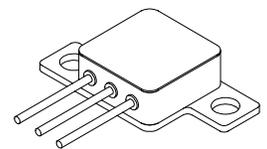
MAXIMUM RATINGS

| 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	ºC
Thermal Resistance, Junction to Case		$R_{\theta JC}$	.83	ºC/W
Total Device Dissipation	@ TC = 25ºC @ TC = 55ºC	P_D	150 114	Watts

CASE OUTLINE: TO-254 (Sufix M)

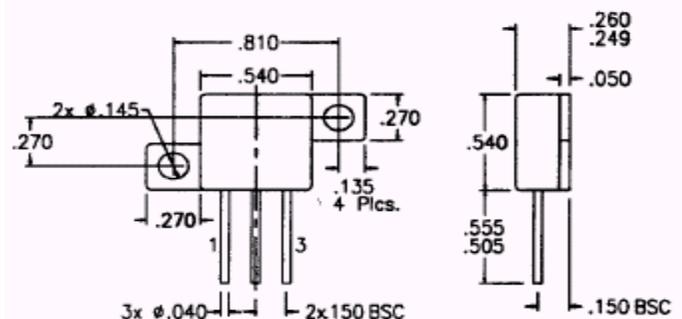**Pin Out:**
Pin 1: Drain
Pin 2: Source
Pin 3: Gate
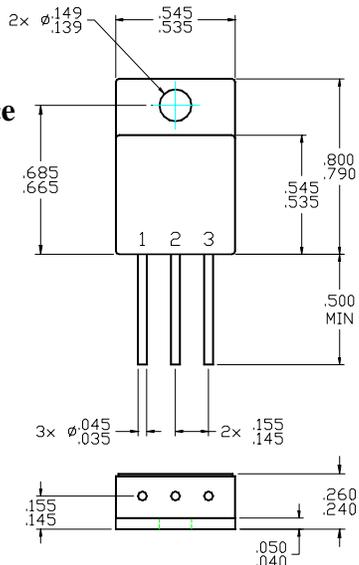
CASE OUTLINE: TO-254Z (Sufix Z)

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

SFF70N10M
SFF70N10Z

SOLID STATE DEVICES, INC.

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

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	Q_g Q_{gs} Q_{gd}	- - -	110 30 50	140 40 80	**nC**
Turn on Delay Time **Rise Time** **Turn off Delay Time** **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 Forward 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.