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

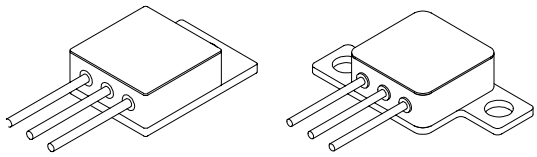
SFF75N05M
SFF75N05Z

DESIGNER'S DATA SHEET

75 AMP
50 VOLTS
15mΩ
N-CHANNEL
MOSFET

FEATURES:
- Advanced high-cell density withstands high energy
- Very low conduction and switching losses
- Fast recovery drain-to-source diode with soft recovery
- 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

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

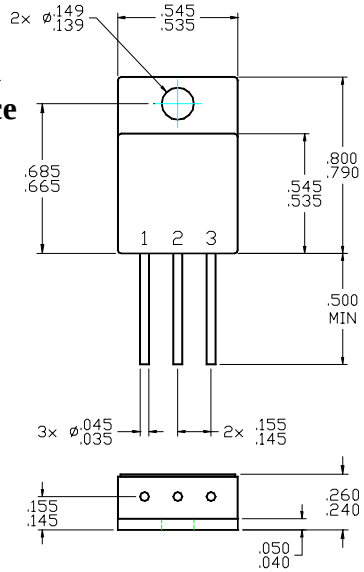


MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	VALUE	UNIT
Drain to Source Voltage		V_{DS}	50	Volts
Drain to Gate Voltage (RGS = 1.0 mΩ)		V_{DG}	50	Volts
Gate to Source Voltage		V_{GS}	± 20	Volts
Continuous Drain Current	@TC=25°C @TC=100°C	I_D	56 1/ 46	Amps
Operating and Storage Temperature		T_{op} & T_{stg}	-55 to +175	°C
Thermal Resistance, Junction to Case		$R_{\eta JC}$	1	°C/W
Total Device Dissipation	@ TC = 25°C @ TC = 55°C	P_D	150 120	Watts

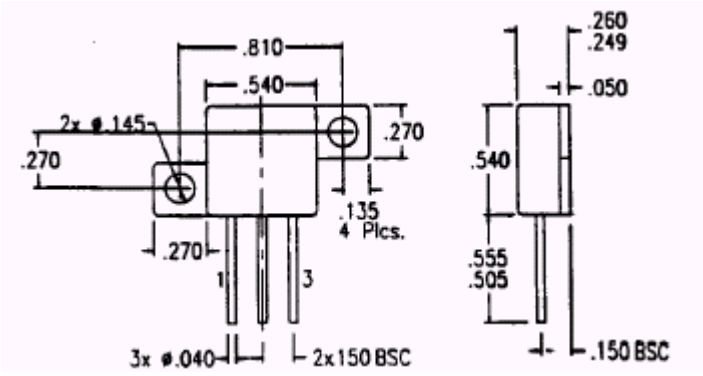
CASE OUTLINE: TO-254 (Sufix M)

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 #: F00257E

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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}**	50	-	-	**V**
Drain to Source on State Resistance (VGS = 10 V,Tc = 150°C)	ID=37.5A ID=75A ID=37.5A	**$R_{DS(on)}$**	- - -	13 15 19	15 17	**ϒΩ**
On State Drain Current (VDS > ID(on) x RDS(on) Max, VGS = 10 V)		**$I_{D(on)}$**	75	-	-	**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=20 Amps)		**gf_s**	15	35	-	**Smho**
Zero Gate Voltage Drain Current (V_{DS} = max rated voltage, V_{GS} = 0 V) (V_{DS} = 80% rated V_{DS}, V_{GS} = 0V, T_A = 125°C)		**I_{DSS}**	- -	- -	10 100	**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**	- - -	80 13 40	100 20 55	**nC**
Turn on Delay Time **Rise Time** **Turn off DelayTime** **Fall Time**	VDD =50% rated VDS rated ID RG=9.1Ω	**$t_{d\ (on)}$** **tr** **$t_{d\ (off)}$** **tf**	- - - -	20 35 65 40	40 70 130 80	**nsec**
Diode Forvard Voltage (I_S = rated I_D, V_{GS} = 0V, T_J = 25°C)		**V_{SD}**	-	1.47	1.6	**V**
Diode Reverse Recovery Time **Reverse Recovery Charge**	TJ =25°C IF = 10A di/dt = 100A/µsec	**t_{rr}** **Q_{RR}**	-	70 40/35	150	**nsec**
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	VGS =0 Volts VDS =25 Volts f =1 MHz	**Ciss** **Coss** **Crss**	- - -	2600 700 260	2900 1100 275	**pF**

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

NOTES:

1/ Maximum current limited by package, die rated at 75A.