

SOLID STATE DEVICES, INC.

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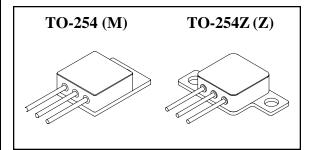
DESIGNER'S DATA SHEET

FEATURES:

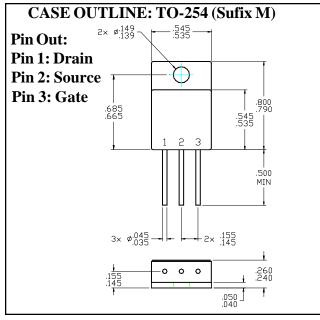
- Advanced high-cell density withstands high energy
- Very low conduction and switching losses
- Fast recovery drain-to-source diode with soft recovery
- Rugged construction with poly silicon gate
- Ultra low RDS (on) and high transconductance
- Excellent high temperature stability
- · Very fast switching 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

SFF75N05M SFF75N05Z

75 AMP 50 VOLTS 15mΩ N-CHANNEL MOSFET



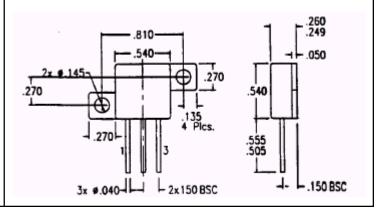
MAXIMUM RATINGS				
CHARACTERISTIC		SYMBOL	VALUE	UNIT
Drain to Source Voltage		$ m V_{DS}$	50	Volts
Drain to Gate Voltage (RGS = 1.0 m Ω)		$ m V_{DG}$	50	Volts
Gate to Source Voltage		$ m V_{GS}$	± 20	Volts
Continuous Drain Current	@TC=25°C @TC=100°C	I _D	56 <u>1/</u> 46	Amps
Operating and Storage Temperature		Top & Tstg	-55 to +175	°C
Thermal Resistance, Junction to Case		$ m R_{\eta JC}$	1	°C/W
Total Device Dissipation	@ TC = 25°C @ TC = 55°C	P _D	150 120	Watts



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.

SFF75N05M SFF75N05Z



ELECTRICAL CHARACTERIST	$TICS @ T_J = 25^{\circ}C (U)$	nless Other	wise Speci	ified)		
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	()	$I_{ m DSS}$	-	-	10 100	μА
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	$\begin{array}{c} t_{d~(on)} \\ tr \\ t_{d~(off)} \\ tf \end{array}$	- - -	20 35 65 40	40 70 130 80	nsec
Diode Forvard Voltage $(I_S = \text{rated } I_D, V_{GS} = 0V, T_J = 25^{\circ}C)$		V _{SD}	-	1.47	1.6	V
Diode Reverse Recovery Time Reverse Recovery Charge	TJ = 25°C IF = 10A $di/dt = 100A/\mu sec$	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.