



SOLID STATE DEVICES, INC.

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

DESIGNER'S DATA SHEET

FEATURES:

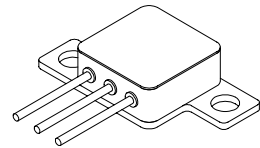
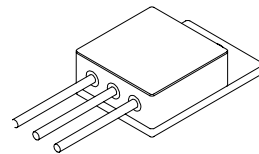
- Advanced high-cell density withstands high energy
- Very low conduction and switching losses
- Fast recovery drain-to-source diode with soft recovery
- Rugged construction with poly silicon gate
- Ultra low RDS (on) and high transconductance
- Excellent high temperature stability
- Very fast switching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

TO-254 (M)

TO-254Z (Z)



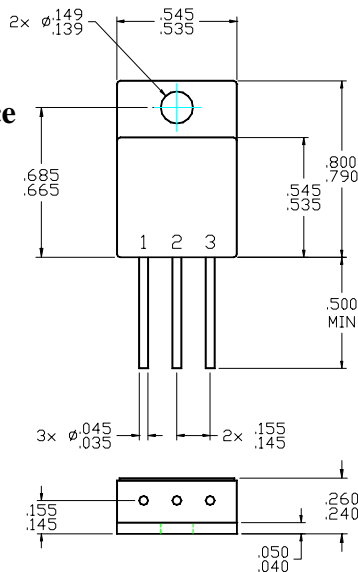
MAXIMUM RATINGS

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	I _D	56 ^{1/2} 46	Amps
		@ TC=25°C @ TC=100°C	
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +175	°C
Thermal Resistance, Junction to Case	R _{ηJC}	1	°C/W
Total Device Dissipation	P _D	150 120	Watts
		@ TC = 25°C @ TC = 55°C	

CASE OUTLINE: TO-254 (Suffix M)

Pin Out:

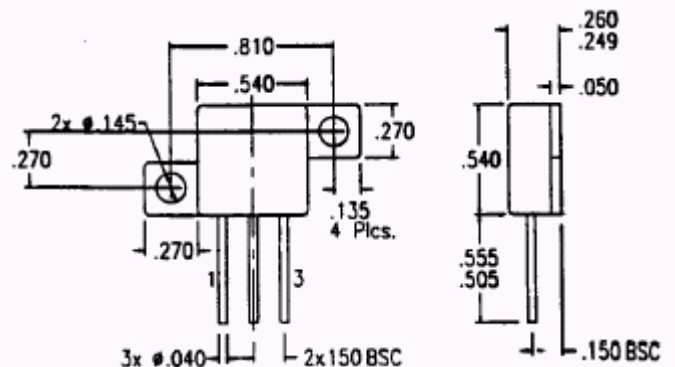
- Pin 1: Drain**
- Pin 2: Source**
- Pin 3: Gate**



CASE OUTLINE: TO-254Z (Suffix Z)

Pin Out:

- Pin 1: Drain**
- Pin 2: Source**
- Pin 3: Gate**



Available with Glass or Ceramic Seals. Contact Factory 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

SFF75N05M
SFF75N05Z



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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}	50	-	-	V
Drain to Source on State Resistance (V _{GS} = 10 V, T _c = 150°C)	I _D =37.5A I _D =75A I _D =37.5A	R_{DS(on)}	- - -	13 15 19	15 17	Υ Ω
On State Drain Current (V _{DS} > I _{D(on)} x R _{DS(on)} Max, V _{GS} = 10 V)		I_{D(on)}	75	-	-	A
Gate Threshold Voltage (V _{DS} = V _{GS} , I _D = 250μA)		V_{GS(th)}	2	-	4.0	V
Forward Transconductance (V _{DS} > I _{D(on)} X R _{DS(on)} Max, I _{DS} =20 Amps)		g_{fs}	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 V _{GS}	I_{GSS}	- -	- -	100 100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	V _{GS} = 10 V 80% rated V _{DS} Rated I _D	Q_g Q_{gs} Q_{gd}	- - -	80 13 40	100 20 55	nC
Turn on Delay Time Rise Time Turn off Delay Time Fall Time	V _{DD} = 50% rated V _{DS} rated I _D R _G = 9.1Ω	t_{d(on)} t_r t_{d(off)} t_f	- - - -	20 35 65 40	40 70 130 80	nsec
Diode Forward 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	T _J = 25°C I _F = 10A di/dt = 100A/μsec	t_{rr} Q_{RR}	-	70 40/35	150	nsec
Input Capacitance Output Capacitance Reverse Transfer Capacitance	V _{GS} = 0 Volts V _{DS} = 25 Volts f = 1 MHz	C_{iss} C_{oss} C_{rss}	- - -	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.