Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4470 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFF60P05M
SFF60P05Z

-60 AMP/-50 Volts
25 mΩ typical
P-Channel
POWER MOSFET

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]
SFF60P05

Screening [2/]
__ = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

Lead Option
__ = Straight Leads
DB = Down Bend
UB = Up Bend

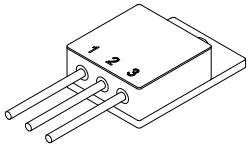
Package [3/]
M = TO-254
Z = TO-254Z

Features:
- Rugged Construction with Poly Silicon Gate
- 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
- TX, TXV, and Space Level Screening Available. Consult Factory.

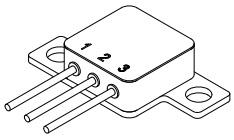
Maximum Ratings [4/]		Symbol	Value	Units
Drain - Source Voltage		V_{DS}	-50	V
Gate – Source Voltage		V_{GS}	±20	V
Continuous Drain Current		I_D	-60	A
Operating & Storage Temperature		T_{OP} & T_{STG}	-55 to +150	ºC
Thermal Resistance, Junction to Case		$R_{\theta JC}$	0.8	ºC/W
Total Device Power Dissipation	T_C = 25ºC T_C = -55ºC	P_D	156 118	Watts

NOTES:
*Pulse Test: Pulse Width = 300µsec, Duty Cycle = 2%.
1/ For ordering information, price, and availability - contact factory.
2/ Screening based on MIL-PRF-19500. Screening flows available on request.
3/ Maximum current limited by package configuration.
4/ Unless otherwise specified, all electrical characteristics @25°C.

TO-254 (M)



TO-254Z (Z)



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Electrical Characteristics [4]		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage (V_{GS} = 0V, I_D = 250μA)		BV_{DSS}	-50	-70	—	**Volts**
Drain to Source On State Resistance (V_{GS} = -10V, I_D = 60A)		$R_{DS(on)1}$	—	0.021	0.033	**Ω**
Drain to Source On State Resistance (V_{GS} = -10V, I_D = 30A)		$R_{DS(on)2}$	—	0.021	—	**Ω**
Gate Threshold Voltage (V_{DS} = V_{GS}, I_D = -250μA)		$V_{GS(th)}$	-2.0	-2.8	-4.0	**Volts**
Forward Transconductance (V_{DS} > $I_{D(on)}$ x $R_{DS(on)}$ Max, I_{Ds} = 50% of Rated I_D)		g_{fs}	—	50	—	**S**
Zero Gate Voltage Drain Current (V_{DS} = 50 V, V_{GS} = 0V) (V_{DS} = 40 V, V_{GS} = 0V)	T_A = 25°C T_A = 125°C	I_{DSS}	— —	0.005 —	1 50	**μA**
Gate to Source Leakage (For **Gate to Source Leakage**	At Rated V_{GS}	I_{GSS}	— —	-10 10	-100 100	**μA**
Total Gate Charge **Gate to Source Charge** **Gate to Drain Charge**	V_{GS} = -10V V_{DD} = 40V I_D = 60A	Q_g Q_{gs} Q_{gd}	— — —	200 20 80	300 50 125	**nC**
Turn on Delay Time **Rise Time** **Turn off Delay Time** **Fall Time**	V_{DD} = 25 V I_D = 30 A R_L = 6.2Ω	$t_{(on)}$ $t_{d(on)}$ t_r $t_{(off)}$ $t_{d(off)}$ t_f	— — — — — —	— 40 20 — 90 60	125 — — 225 — —	**ns**
Diode Forward Voltage	I_S = Rated I_D V_{GS} = 0V T_J = 25ºC	V_{SD}	—	-1.3	-1.9	**Volts**
Diode Reverse Recovery Time	I_F = 10A di/dt = 100A/usec	t_{rr} Q_{rr}	— —	140 —	200 —	**ns** **μC**
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	V_{GS} = 0V V_{DS} = -25V f = 1 MHz	C_{iss} C_{oss} C_{rss}	— — —	6000 1800 500	— — —	**pF**

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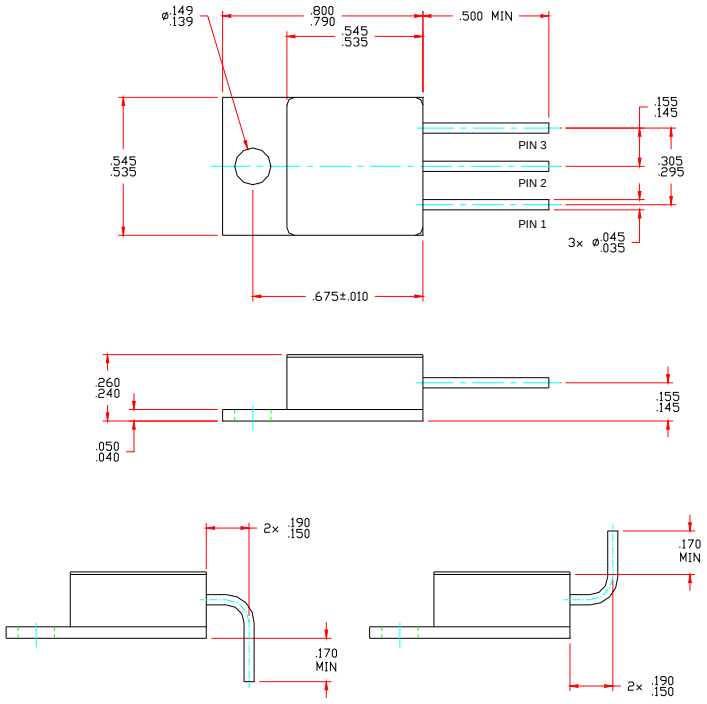
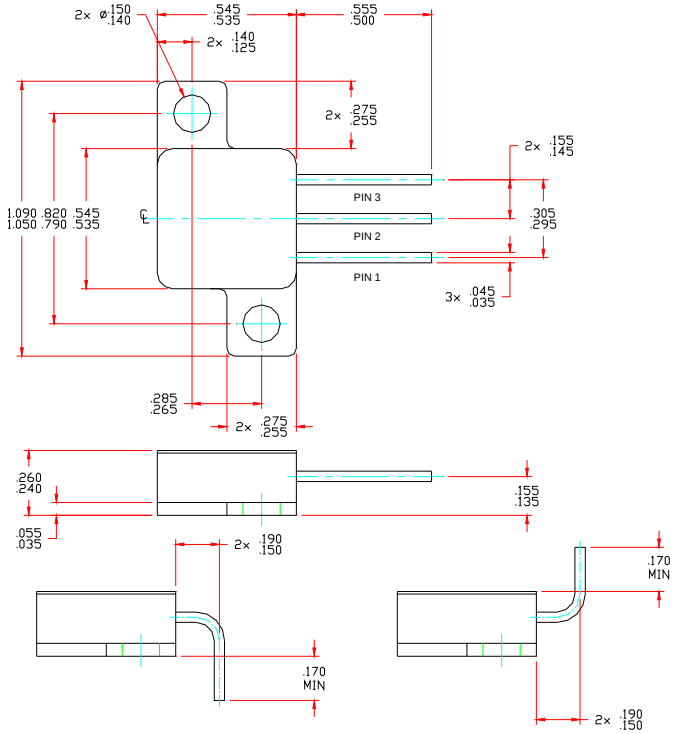
PACKAGE OUTLINE: TO-254 (M)



PACKAGE OUTLINE: TO-254Z (Z)



Available with glass or ceramic seals – contact factory for details.

Available Part Numbers:

SFF60P05M, SFF60P05MUB, SFF60P05MDB;
SFF60P05Z, SFF60P05ZUB, SFF60P05ZDB

PIN ASSIGNMENT (Standard)			
Package	**Drain**	**Source**	**Gate**
TO-254 (M)	Pin 1	Pin 2	Pin 3
TO-254Z (Z)	Pin 1	Pin 2	Pin 3