Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFF40N30M
SFF40N30Z

DESIGNER'S DATA SHEET

40 AMP / 300 Volts
0.10 W
N-Channel Power MOSFET

Part Number / Ordering Information [1/]

SFF40N30 ___

+ **Screening** [2/] __ = Not Screen
TX = TX Level
TXV = TXV Level
S = S Level

+ **Lead Option** [3/] __ = Straight Leads
DB = Down Bend
UB = Up Bend

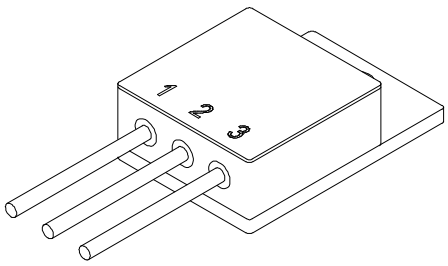
+ **Package** [3/] M = TO-254
Z = TO-254Z

Features:

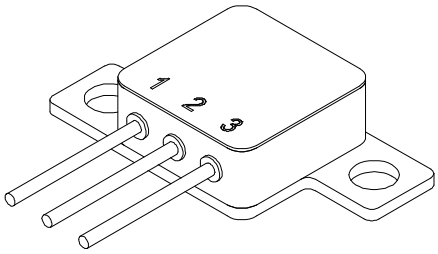
- Rugged Construction with Polysilicon Gate Cell
- Low $R_{DS(ON)}$ and High Transconductance
- Excellent High Temperature Stability
- Very Fast Switching Speed
- Fast Recovery and Superior dV/dt Performance
- Increased Reverse Energy Capability
- Low Input and Transfer Capacitance for Easy Paralleling
- Ceramic Seals for Improved Hermeticity
- Hermetically Sealed Package
- TX, TXV, Space Level Screening Available
- Replacement for IXTH40N30 Types

Maximum Ratings		Symbol	Value	Units
Drain – Source Voltage		V_{DS}	300	**Volts**
Gate – Source Voltage		V_{GS}	±20	**Volts**
Continuous Collector Current		I_D	40	**Amps**
Power Dissipation	T_C = 25ºC T_C = 55ºC	P_D	150 114	**W**
Operating & Storage Temperature		**Top & Tstg**	-55 to +150	**ºC**
Maximum Thermal Resistance Junction to Case		R_{qJC}	0.83	**ºC/W**

TO-254 (M)



TO-254Z (Z)



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	**DATA SHEET #: F00141E**	**DOC**

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Electrical Characteristics @ T_J = 25ºC (Unless Otherwise Specified)		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage (VGS=0 V, ID=250 µA)		BV_{DSS}	300	—	—	**Volts**
Drain to Source On State Resistance (VGS=10 V, ID=50% Rated ID)		$R_{DS(on)}$	—	—	0.10	W
On State Drain Current (VDS>ID(on) X RDS(on) Max, VGS=10V)		$I_{D(on)}$	40	—	—	**A**
Gate Threshold Voltage (VDS=VGS, ID= 4mA)		$V_{GS(th)}$	2.0	—	4.0	**V**
Forward Transconductance (VDS>ID(on) X RDS(on) Max, IDS= 50% Rated ID)		g_{fs}	15	25	—	**mho**
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125ºC)		I_{DSS}	— —	— —	250 1000	m**A**
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 Volts 50% rated VDS 50% Rated ID	Q_g Q_{gs} Q_{gd}	— — —	177 28 78	200 50 105	**nC**
Turn on Delay Time **Rise Time** **Turn on Delay Time** **Fall Time**	VDD=50% Rated VDS 50% Rated ID RG= 2.0Ω VGS=10 Volts	$t_{d(on)}$ **tr** $t_{d(off)}$ t_f	— — — —	30 60 175 45	50 90 250 90	**nsec**
Diode Forward Voltage (IS= Rated ID, VGS=0 V, TJ=25ºC)		V_{SD}	—	—	1.5	**V**
Diode Reverse Recovery Time **Reverse Recovery Charge**	T_J=25ºC IF=10A Di/dt=100A/µsec	t_{rr} Q_{RR}	— —	— —	325 —	**nsec** **nC**
Input Capacitance **Input Capacitance** **Reverse Transfer Capacitance**	VGS=0 Volts VDS=25 Volts f=1 MHz	C_{iss} C_{oss} C_{rss}	— — —	4800 745 283	— — —	**pF**

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

Available Part Numbers:

SFF40N30M; SFF40N30MDB; SFF40N30MUB;
SFF40N30Z; SFF40N30ZDB; SFF40N0ZUB;

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

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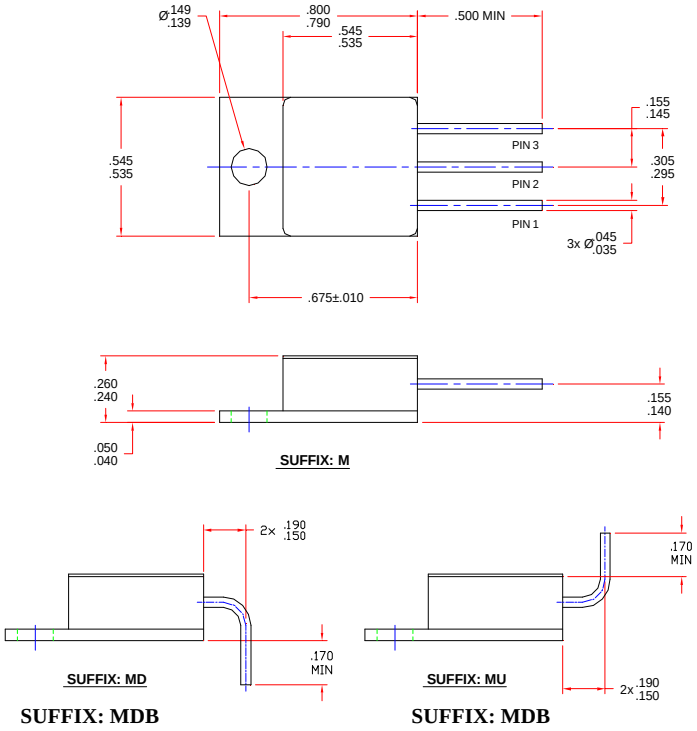
SFF40N30M
SFF40N30Z

Case Outline: TO-254 (M)



Case Outline: TO-254Z (Z)