



SOLID STATE DEVICES, INC

PRELIMINARY

14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

Designer's Data Sheet

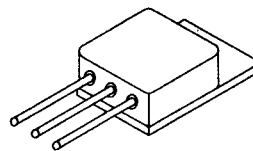
FEATURES:

- Rugged construction with polysilicon gate
- 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 and Space Level screening available
- Replaces: IXTH40N30 Types

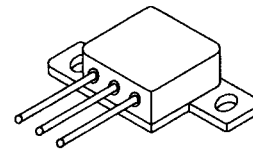
SFF40N30M
SFF40N30Z

40 AMP
300 VOLTS
0.10 Ω
N-CHANNEL
POWER MOSFET

TO-254



TO-254Z

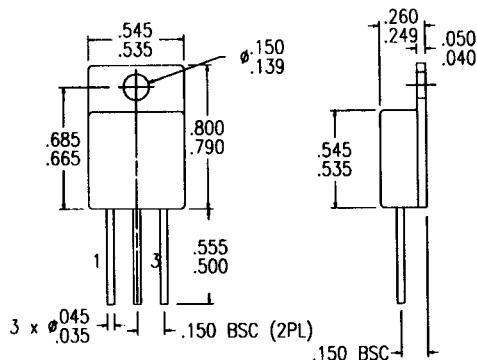


MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V_{DS}	300	Volts
Gate to Source Voltage	V_{GS}	± 20	Volts
Continuous Drain Current	I_D	40	Amps
Operating and Storage Temperature	$T_{op} \text{ \& } T_{stg}$	-55 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.83	$^{\circ}C/W$
Total Device Dissipation @ $T_C=25^{\circ}C$	P_D	150	Watts
Total Device Dissipation @ $T_C=55^{\circ}C$		114	

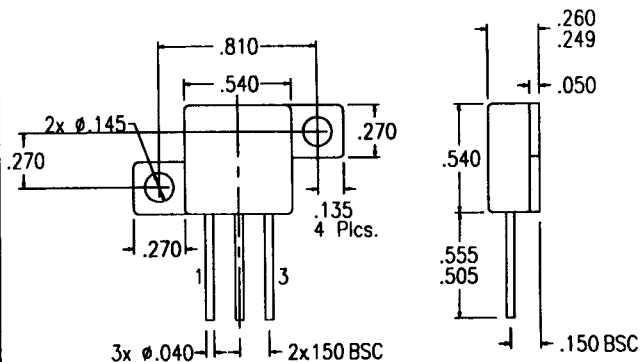
PACKAGE OUTLINE: TO-254

PIN OUT:
PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE



PACKAGE OUTLINE: TO-254Z

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. SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: F00141 D

MED

SFF40N30M SFF40N30Z

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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}	300	---	---	V
Drain to Source on State Resistance (V _{GS} =10 V, I _D =50% Rated I _D)	R _{DS(on)}	---	---	0.10	Ω
On State Drain Current (V _{DS} > I _{D(on)} X R _{DS(on)} Max, V _{GS} =10 V)	I _{D(on)}	40	---	---	A
Gate Threshold Voltage (V _{DS} ≥ V _{GS} , I _D =4mA)	V _{GS(th)}	2.0	---	4.0	V
Forward Transconductance (V _{DS} > I _{D(on)} X R _{DS(on)} Max, I _{DS} =50% rated I _D)	g _{fs}	22	25	---	S(Ω)
Zero Gate Voltage Drain Current (V _{DS} =max rated voltage, V _{GS} =0 V) (V _{DS} =80% rated V _{DS} , V _{GS} =0 V, T _A =125°C)	I _{DSS}	---	---	250 1000	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 Volts 50% rated V _{DS} 50% Rated I _D Q _g Q _{gs} Q _{gd}	---	177 28 78	200 50 105	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	V _{DD} =50% rated V _{DS} 50% rated I _D R _G = 2.0 Ω V _{GS} =10V t _{d(on)} t _r t _{d(off)} t _f	---	30 60 175 45	50 90 250 90	nsec
Diode Forward Voltage (I _S =rated I _D , V _{GS} =0 V, T _J =25°C)	V _{SD}	---	---	1.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25°C I _F =rated I _D di/dt=100 A/μsec t _{rr} Q _{RR}	---	---	325 ---	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	V _{GS} =0 Volts V _{DS} =25 Volts f= 1 MHz C _{iss} C _{oss} C _{rss}	---	4800 745 283	---	pF

SAFE OPERATING AREA (S.O.A.)
T_C = 25 °C, D.C. CONDITION

