



PRELIMINARY

SOLID STATE DEVICES, INC

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

SFF140M
SFF140Z

28 AMP
100 VOLT
0.077 Ω
N-CHANNEL
POWER MOSFET

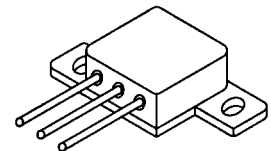
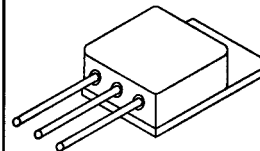
Designer's Data Sheet

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 package
- TX, TXV and Space Level screening available
- Replaces: IRFM140 Types

TO-254

TO-254Z

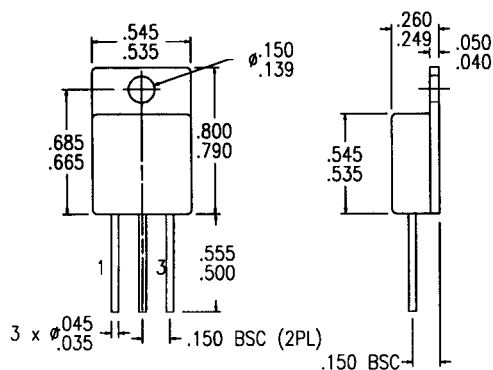


MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	100	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	28	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +175	°C
Thermal Resistance, Junction to Case	R _{θJC}	1.7	°C/W
Total Device Dissipation @ TC=25°C	P _D	74	Watts
Total Device Dissipation @ TC=55°C		56	

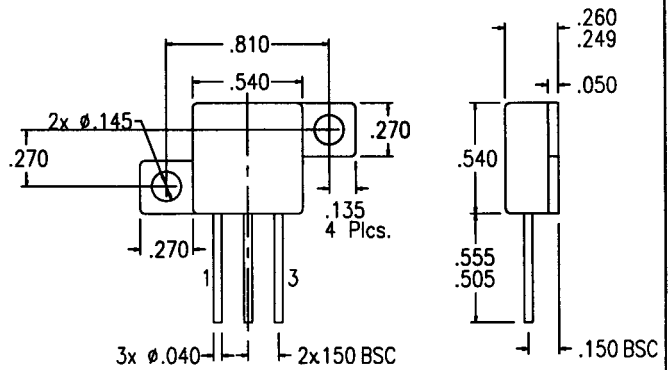
PACKAGE OUTLINE: TO-254

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 #: F00033 C

MED

SFF140M
SFF140Z

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ELECTRICAL CHARACTERISTICS @ $T_J=25^\circ\text{C}$ (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (VGS=0 V, ID=250 μ A)		BVDSS	100	---	---	V
Drain to Source on State Resistance (VGS=10 V, ID=60% Rated ID)		RDS(on)	---	0.06	0.077	Ω
On State Drain Current (VDS > ID(on) X RDS(on) Max, VGS=10 V)		ID(on)	28	---	---	A
Gate Threshold Voltage (VDS=VGS, ID=250 μ A)		VGS(th)	2.0	2.4	4.0	V
Forward Transconductance (VDS > ID(on) X RDS(on) Max, IDS=60% rated ID)		gfs	8.7	13	---	S(\bar{v})
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=150 $^\circ$ C)		IDSS	---	---	250 1000	μ A
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	IGSS	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	VGS=10 Volts 50% rated VDS Rated ID	Qg Qgs Qgd	---	40 8 19	60 12 28	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	VDD=50% rated VDS rated ID RG= 9.1 Ω	td(on) tr td(off) tf	---	15 72 40 50	23 110 60 75	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, TJ=25 $^\circ$ C)		VSD	---	1.3	2.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	TJ=25 $^\circ$ C IF=10A di/dt=100 A/ μ sec	trr QRR	70 0.44	150 0.91	300 1.9	nsec μ C
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f= 1 MHz	Ciss Coss Crss	---	1500 500 90	---	pF

SAFE OPERATING AREA (S.O.A.)
TC = 25 $^\circ$ C, D.C. CONDITION

