PRELIMINARY

SFF9140M
SFF9140Z

SOLID STATE DEVICES, INC

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

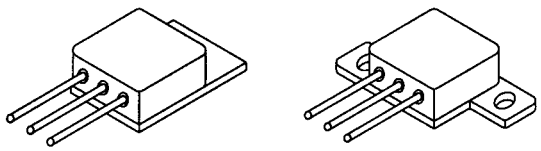
-18 AMP
-100 VOLTS
0.20Ω
P-CHANNEL
POWER MOSFET

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
- TX, TXV and Space Level Screening available
- Replaces: IRF9140 Types

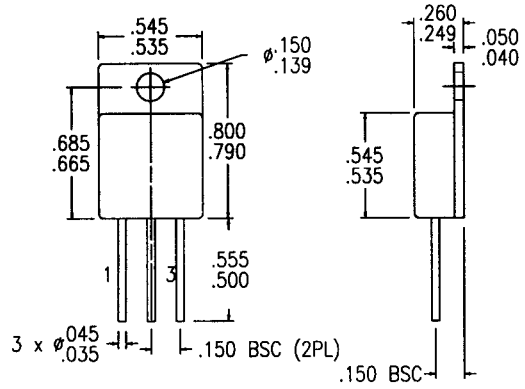
TO-254 **TO-254Z**



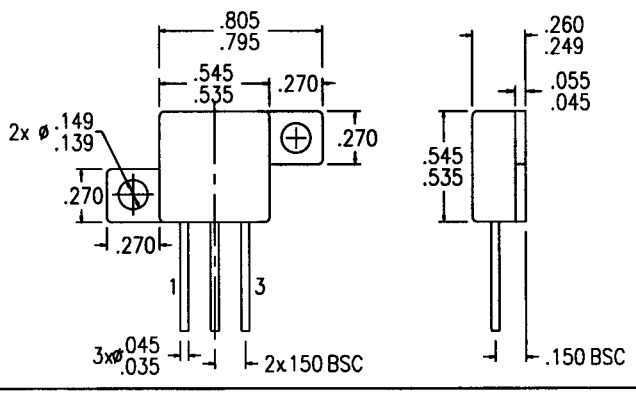
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V_{DS}	-100	Volts
Gate to Source Voltage	V_{GS}	±20	Volts
Continuous Drain Current @TC=25°C @TC=100°C	I_D	18 11	Amps
Operating and Storage Temperature	T_{op} & T_{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.7	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	P_D	63 48	Watts
Single Pulse Avalanche Energy	E_{AS}	500	mJ
Repetitive Avalanche Energy	E_{AR}	12.5	mJ

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 #: FP0017 C	MED

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ELECTRICAL CHARACTERISTICS @ T_J=25°C (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (VGS=0 V, ID=1mA)		BV_{DSS}	-100	---	---	V
Drain to Source on State Resistance (VGS= -10 V)	ID=11A ID=18A	$R_{DS(on)}$	---	0.15 ---	0.20 0.23	Ω
Temperature Coefficient of Breakdown Voltage		$\frac{\Delta BV_{DSS}}{\Delta Tj}$	---	-0.087	---	A
Gate Threshold Voltage (VDS=VGS, ID= -250μA)		$V_{GS(th)}$	-2.0	---	-4.0	V
Forward Transconductance VDS≥15V, IDS=11A)		g_{fs}	6.2	8	---	S(℧)
Zero Gate Voltage Drain Current (VDS=80% rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125°C)		I_{DSS}	--- ---	--- ---	25 250	μA
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 ID=18 A	Q_g Q_{gs} Q_{gd}	31 --- 7	50 3 25	70 13 45	nC
Turn on Delay Time **Rise Time** **Turn Off Delay Time** **Fall Time**	VDD=50% rated VDS rated ID RG=9.1Ω	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	--- --- --- ---	15 8 35 20	35 85 85 65	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, TJ=25°C)		V_{SD}	---	---	-4.2	V
Diode Reverse Recovery Time **Reverse Recovery Charge**	TJ=25°C IF=rated ID di/dt=100 A/μsec	t_{rr} Q_{RR}	--- ---	170 ---	280 3.6	nsec μC
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	VGS=0 Volts VDS= -25 Volts f= 1 MHz	C_{iss} C_{oss} C_{rss}	--- --- ---	1400 600 200	--- --- ---	pF

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