



SOLID STATE DEVICES, INC

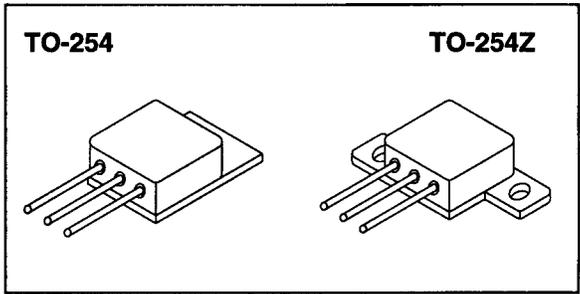
14849 Firestone Boulevard · La Mirada, CA 90638
 Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

**SFF9140M
SFF9140Z**

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

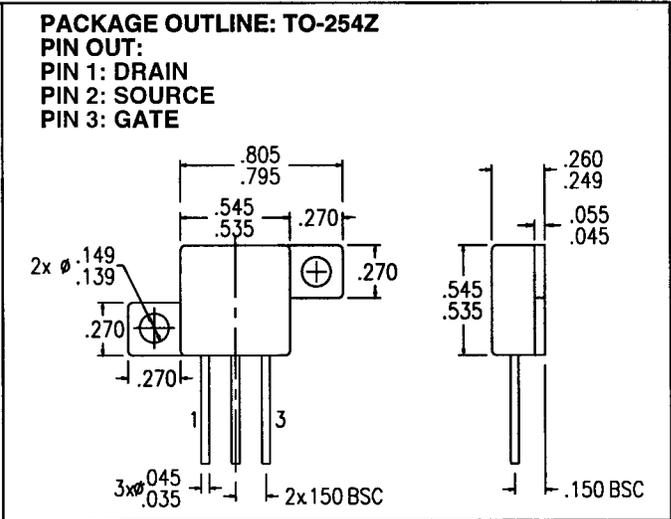
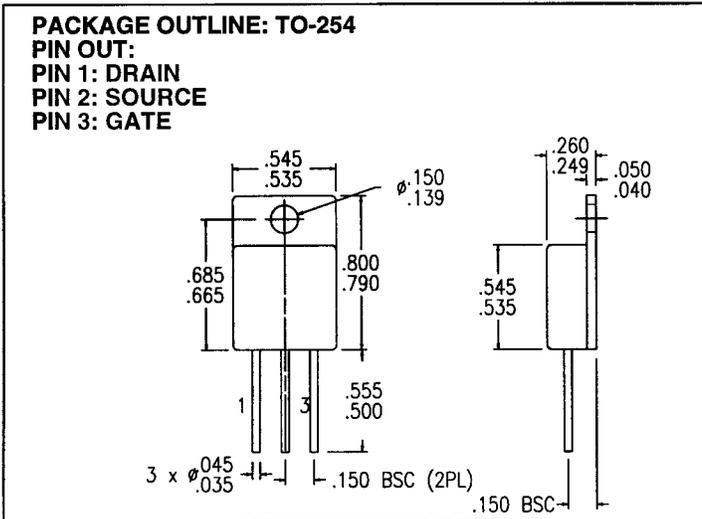
Designer's Data Sheet

- 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



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	Top & Tstg	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	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



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

SFF9140M
SFF9140Z

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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 =1mA)	BV _{DSS}	-100	---	---	V
Drain to Source on State Resistance (V _{GS} = -10 V) ID=11A ID=18A	R _{DS(on)}	---	0.15 ---	0.20 0.23	Ω
Temperature Coefficient of Breakdown Voltage	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	---	-0.087	---	A
Gate Threshold Voltage (V _{DS} =V _{GS} , I _D = -250μA)	V _{GS(th)}	-2.0	---	-4.0	V
Forward Transconductance (V _{DS} ≥15V, I _{DS} =11A)	g _{fs}	6.2	8	---	S(Ω)
Zero Gate Voltage Drain Current (V _{DS} =80% rated voltage, V _{GS} =0 V) (V _{DS} =80% rated V _{DS} , V _{GS} =0 V, T _A =125° C)	I _{DSS}	---	---	25 250	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} I _D =18 A Q _g Q _{gs} Q _{gd}	31 ---	50 3 25	70 13 45	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	V _{DD} =50% rated V _{DS} rated I _D R _G =9.1Ω t _{d(on)} t _r t _{d(off)} t _f	---	15 8 35 20	35 85 85 65	nsec
Diode Forward Voltage (I _S =rated I _D , V _{GS} =0 V, T _J =25° C)	V _{SD}	---	---	-4.2	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}	---	170 ---	280 3.6	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}	---	1400 600 200	---	pF

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