



Solid State Devices, Inc.

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Designer's Data Sheet

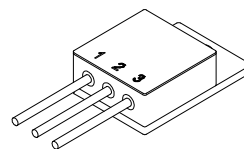
FEATURES:

- 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
- Replaces: IRF9140 Types
- TX, TXV, and Space Level Screening Available. Consult Factory.

SFF9140J

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

TO-257



MAXIMUM RATINGS		Symbol	Value	Units
Drain to Source Voltage		V_{DS}	-100	Volts
Gate to Source Voltage		V_{GS}	± 20	Volts
Continuous Drain Current	$T_C = 25^\circ C$ $T_C = 100^\circ C$	I_D	-18 -11	Amps
Operating and Storage Temperature		$T_{OP} \text{ \& } T_{stg}$	-55 to +150	$^\circ C$
Thermal Resistance, Junction to Case		$R_{\theta JC}$	2.0	$^\circ C/W$
Total Device Dissipation	$T_C = 25^\circ C$ $T_C = 55^\circ C$	P_D	63 48	Watts
Single Pulse Avalanche Energy		E_{AS}	500	mJ
Repetitive Avalanche Energy		E_{AR}	12.5	mJ

PACKAGE OUTLINE:

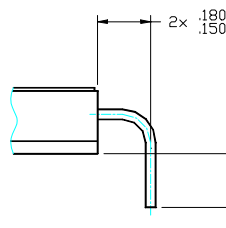
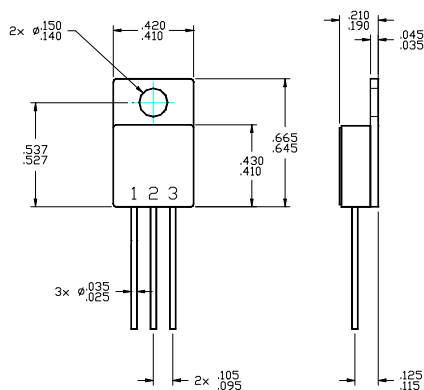
TO-257 (J)

PINOUT:

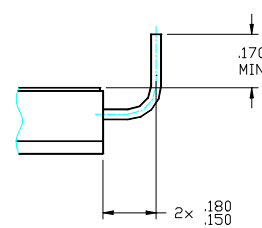
PIN 1: DRAIN

PIN 2: SOURCE

PIN 3: GATE



SUFFIX JDB



SUFFIX JUB

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

DATA SHEET #: FP0015G

DOC



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SFF9140J

ELECTRICAL CHARACTERISTICS		Symbol	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage (V _{GS} = 0 V, I _D = 1 mA)		ΔBV _{DSS}	-100	—	—	Volts
Temperature Coefficient of Breakdown Voltage		$\frac{\Delta BV_{DSS}}{T_J}$	—	0.087	—	Volts
Drain to Source ON State Resistance (V _{GS} = -10 V)	I _D = 11A I _D = 18A	R _{DS(on)}	— —	0.15 —	0.20 0.23	Ω
Gate Threshold Voltage (V _{DS} = V _{GS} , I _D = 250μA)		V _{GS(th)}	-2.0	—	-4.0	Volts
Forward Transconductance (V _{DS} ≥ 10V, I _{DS} = 11A)		g _{fs}	6.1	8.0	—	S mho
Zero Gate Voltage Drain Current (V _{DS} = 80% rated V _{DS} , 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 — 7	50 3 25	70 15 45	nC
Turn ON Delay Time Rise Time Turn OFF Delay Time Fall Time	(V _{DD} = 50% of rated V _{DS} rated I _D R _G = 9.1 Ω)	t _{d(on)r} t _r t _{d(off)} t _f	— — — —	15 8 35 20	35 85 85 65	ns
Diode Forward Voltage (IS = rated ID, VGS = 0 V, T _J = 25°C)		V _{SD}	—	—	-4.2	Volts
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	ns 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	1650 740 260	ns

