



PRELIMINARY

SOLID STATE DEVICES, INC

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

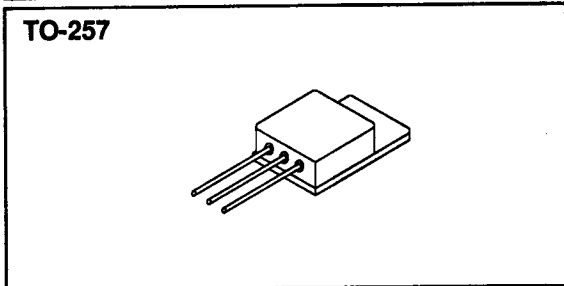
SFF440J

**8 AMP
500 VOLTS
0.86Ω
N-CHANNEL
POWER MOSFET**

Designer's Data Sheet

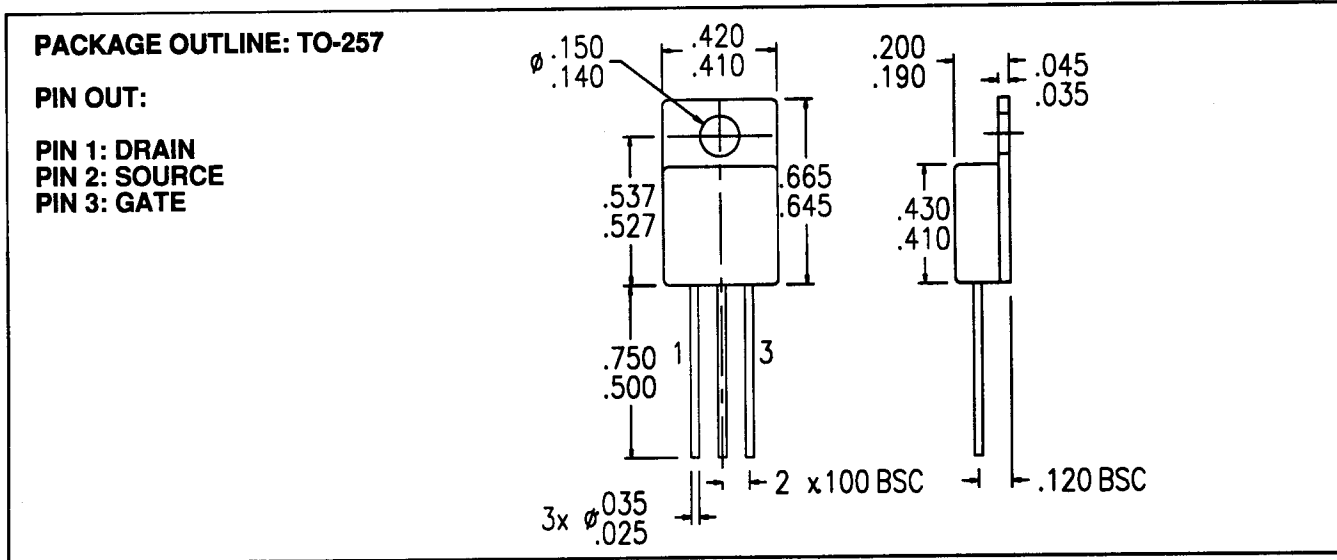
FEATURES:

- 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 surface mount package
- Low inductance leads
- TX, TXV and Space Level screening available
- Replaces: IRF440 Types



MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	500	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	6.9	Amps
Operating and Storage Temperature	Top & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	2	°C/W
Total Device Dissipation @ TC=25°C	P _D	63	Watts
Total Device Dissipation @ TC=55°C		48	



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

DATA SHEET #: F00087 A

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SFF440J

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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=250μA)		BV _{DSS}	500	---	---	V
Drain to Source on State Resistance (VGS=10 V, ID=60% Rated ID)		R _{DS(on)}	---	0.72	0.86	Ω
On State Drain Current (VDS > ID(on) X RDS(on) Max, VGS=10 V)		ID(on)	8	---	---	A
Gate Threshold Voltage (VDS=VGS, ID=250μA)		VGS(th)	2.0	---	4.0	V
Forward Transconductance (VDS ≥ 50V, IDS=60% rated ID)		g _{fs}	4.9	7.4	---	S(Ω)
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125 °C)		IDSS	---	---	250 1000	μA
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 80% rated VDS ID=8 A	Q _g Q _{gs} Q _{gd}	---	42 6 22	63 10 32	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	VDD=50% rated VDS ID= 8 A RG=9.1Ω RD=30Ω	t _{d(on)} t _r t _{d(off)} t _f	---	14 23 50 20	21 35 74 30	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, T _J =25 °C)		VSD	---	---	2.0	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25 °C IF=rated ID di/dt=100 A/μsec	t _{rr} Q _{RR}	210 2	460 4.2	970 8.9	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f= 1 MHz	C _{iss} C _{oss} C _{rss}	---	1300 180 45	---	pF

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