PRELIMINARY

SFF420J

SOLID STATE DEVICES, INC

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

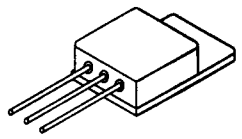
Designer's Data Sheet

2.5 AMP
500 VOLTS
3.0Ω
N-CHANNEL
POWER MOSFET

FEATURES:

- Low RDS(on) and high transconductance
- Excellent high temperature stability
- Very fast switching speed
- Fast recovery and superior dv/dt performance
- Low input and transfer capacitance for easy paralleling
- Hermetically sealed package
- Low inductance leads
- TX, TXV and Space Level screening available
- Replaces: IRF420 Types

TO-257



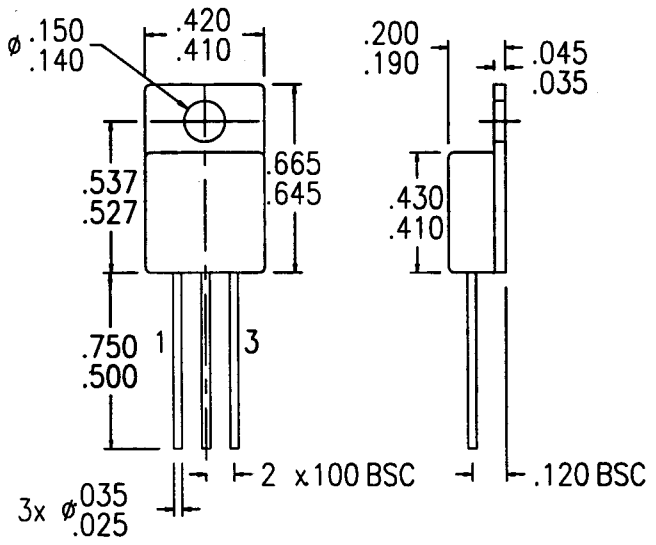
MAXIMUM RATINGS

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	2.5	Amps
Operating and Storage Temperature	T_{op} & T_{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.5	°C/W
Total Device Dissipation @ TC=25°C	P_D	45	Watts

PACKAGE OUTLINE: TO-257

PIN OUT:

PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE



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

DATA SHEET #: F00313 A

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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}	500	---	---	V
Drain to Source on State Resistance (VGS=10 V)	ID=1.5A	$R_{DS(on)}$	---	---	3.0	Ω
Gate Threshold Voltage (VDS=VGS, ID=250μA)		$V_{GS(th)}$	2.0	---	4.0	V
Forward Transconductance (VDS ≥15V, IDS=1A)		g_{fs}	1.0	---	---	S(℧)
Zero Gate Voltage Drain Current (VDS=80% rated VDS, 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=1.5 A	Q_g Q_{gs} Q_{gd}	7.3 0.1 3.7	--- --- ---	16.7 3.0 12.0	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	VDD=50% rated VDS ID= 1.5 A RG=7.5Ω RD=167Ω	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	--- --- --- ---	--- --- --- ---	40 30 60 30	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, TJ=25°C)		V_{SD}	---	---	1.6	V
Diode Reverse Recovery Time Reverse Recovery Charge	TJ=25°C IF=rated ID di/dt=100 A/μsec	t_{rr} Q_{RR}	--- ---	--- ---	900 5.9	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f= 1 MHz	C_{iss} C_{oss} C_{rss}	--- --- ---	360 92 37	--- --- ---	pF

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