

SFF420J

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

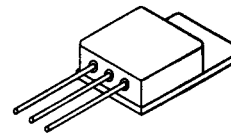
Designer's Data Sheet

**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



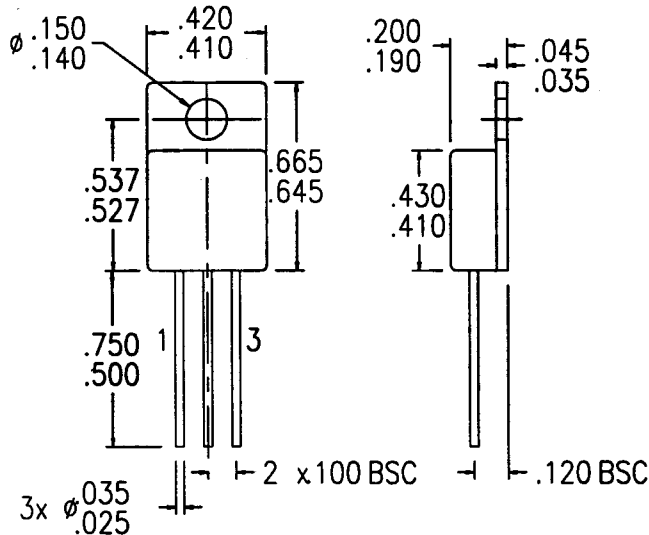
MAXIMUM RATINGS

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 _{θJC}	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

SFF420J

PRELIMINARY

**SOLID STATE DEVICES, INC**14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**ELECTRICAL CHARACTERISTICS @ $T_J=25^\circ\text{C}$ (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	RDS(on)	---	---	3.0	Ω
Gate Threshold Voltage (VDS=VGS, ID=250 μ A)		VGS(th)	2.0	---	4.0	V
Forward Transconductance (VDS \geq 15V, IDS=1A)		gfs	1.0	---	---	S(τ)
Zero Gate Voltage Drain Current (VDS=80% rated VDS, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125 $^\circ$ C)		IDSS	---	---	25 250	μ A
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 50% rated VDS ID=1.5 A	Qg Qgs Qgd	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=7.5 Ω RD=167 Ω	td(on) tr td(off) tf	---	---	40 30 60 30	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, TJ=25 $^\circ$ C)		VSD	---	---	1.6	V
Diode Reverse Recovery Time Reverse Recovery Charge	TJ=25 $^\circ$ C IF=rated ID di/dt=100 A/ μ sec	t _{rr} QRR	---	---	900 5.9	nsec μ C
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f= 1 MHz	Ciss Coss Crss	---	360 92 37	---	pF

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