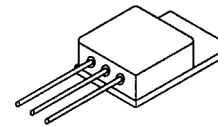




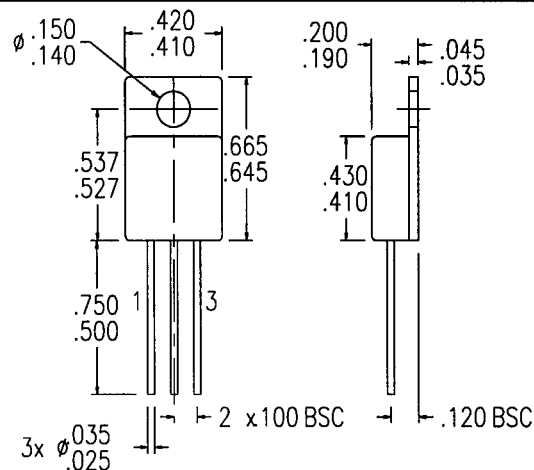
PRELIMINARY

SOLID STATE DEVICES, INC14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**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 package
- TX, TXV and Space Level screening available
- Replaces: IRF230 Types

SFF230J**9 AMP
200 VOLTS
0.40Ω
N-CHANNEL
POWER MOSFET****TO-257****MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	200	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current @ 25°C @ 100°C	I _D	9 6	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	2.5	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	P _D	50 38	Watts
Single Pulse Avalanche Energy	E _{AS}	54	mJ
Repetitive Avalanche Energy	E _{AR}	7.5	mJ

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 #: F00013 B****MED**

SFF230J

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ELECTRICAL CHARACTERISTICS @ $T_J=25^{\circ}\text{C}$ (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage ($V_{GS}=0\text{ V}$, $I_D=1\text{mA}$)		BV_{DSS}	200	---	---	V
Drain to Source on State Resistance @6A ($V_{GS}=10\text{ V}$) @9A		$R_{DS(on)}$	---	0.25	0.40 0.49	Ω
Temperature Coefficient of Breakdown Voltage		$\frac{\Delta BV_{DSS}}{\Delta T_J}$	---	0.29	---	$V/^{\circ}\text{C}$
Gate Threshold Voltage ($V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$)		$V_{GS(th)}$	2	---	4	V
Forward Transconductance ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $I_{DS}=6\text{ A}$)		g_{fs}	3.0	6	---	$S_{(T_J)}$
Zero Gate Voltage Drain Current ($V_{DS}=80\%$ max rated voltage, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated V_{DS} , $V_{GS}=0\text{ V}$, $T_A=125^{\circ}\text{C}$)		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	$V_{GS}=10\text{ Volts}$ 50% rated V_{DS} $I_D=9\text{ A}$	Q_g Q_{gs} Q_{gd}	16 --- 8	30 3 9	39 5.7 25	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated V_{DS} $I_D=9\text{ A}$ $R_G=7.5\Omega$	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	---	35 80 60 40	nsec
Diode Forward Voltage ($I_S=\text{rated } I_D$, $V_{GS}=0\text{ V}$, $T_J=25^{\circ}\text{C}$)		V_{SD}	---	---	1.4	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^{\circ}\text{C}$ $I_F=9\text{ A}$ $di/dt \leq 100\text{ A}/\mu\text{sec}$	t_{rr} Q_{RR}	---	450 3.0	500 6	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	$V_{GS}=0\text{ Volts}$ $V_{DS}=25\text{ Volts}$ $f=1\text{ MHz}$	C_{iss} C_{oss} C_{rss}	---	600 250 80	---	pF

 SAFE OPERATING AREA (S.O.A.)
 $T_C = 25^{\circ}\text{C}$, D.C. CONDITION
