



PRELIMINARY

SOLID STATE DEVICES, INC

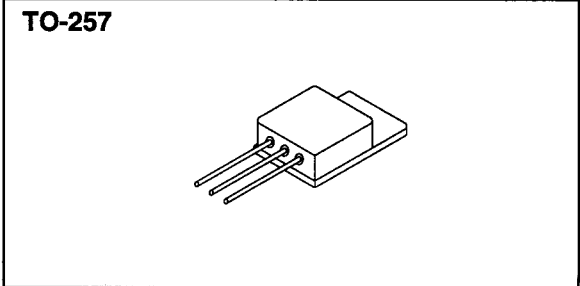
14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

SFF230J

**9 AMP
200 VOLTS
0.40Ω
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 package
 - TX, TXV and Space Level screening available
 - Replaces: IRF230 Types



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

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SFF230J

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ELECTRICAL CHARACTERISTICS @ T_J=25° C (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (V _{GS} =0 V, I _D =1mA)		BV _{DSS}	200	---	---	V
Drain to Source on State Resistance @6A (V _{GS} =10 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/°C
Gate Threshold Voltage (V _{DS} =V _{GS} , I _D =250μA)		V _{GS(th)}	2	---	4	V
Forward Transconductance (V _{DS} > I _{D(on)} X R _{DS(on)} Max, I _{DS} = 6 A)		g _{fs}	3.0	6	---	S ₍₂₅₎
Zero Gate Voltage Drain Current (V _{DS} =80% max rated voltage, 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 = 9 A	Q _g Q _{gs} Q _{gd}	16 ---	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 = 9A R _G = 7.5Ω	t _{d(on)} t _r t _{d(off)} t _f	---	---	35 80 60 40	nsec
Diode Forward Voltage (I _S =rated I _D , V _{GS} =0 V, T _J =25° C)		V _{SD}	---	---	1.4	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25° C I _F = 9 A di/dt ≤ 100 A/μsec	t _{rr} Q _{RR}	---	450 3.0	500 6	nsec 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}	---	600 250 80	---	pF

 SAFE OPERATING AREA (S.O.A.)
 T_C = 25 °C, D.C. CONDITION
