



PRELIMINARY

SOLID STATE DEVICES, INC

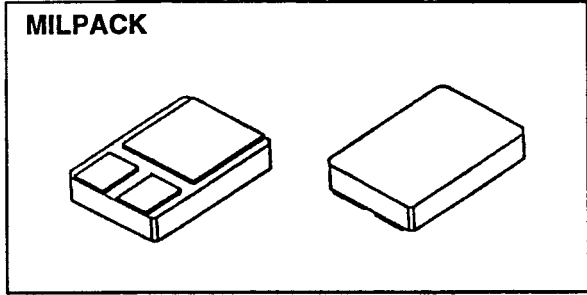
14849 Firestone Boulevard · La Mirada, CA 90638  
 Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

**SFF230**

**9 AMP  
 200 VOLTS  
 0.40Ω  
 N-CHANNEL  
 POWER MOSFET**

**Designer's Data Sheet**

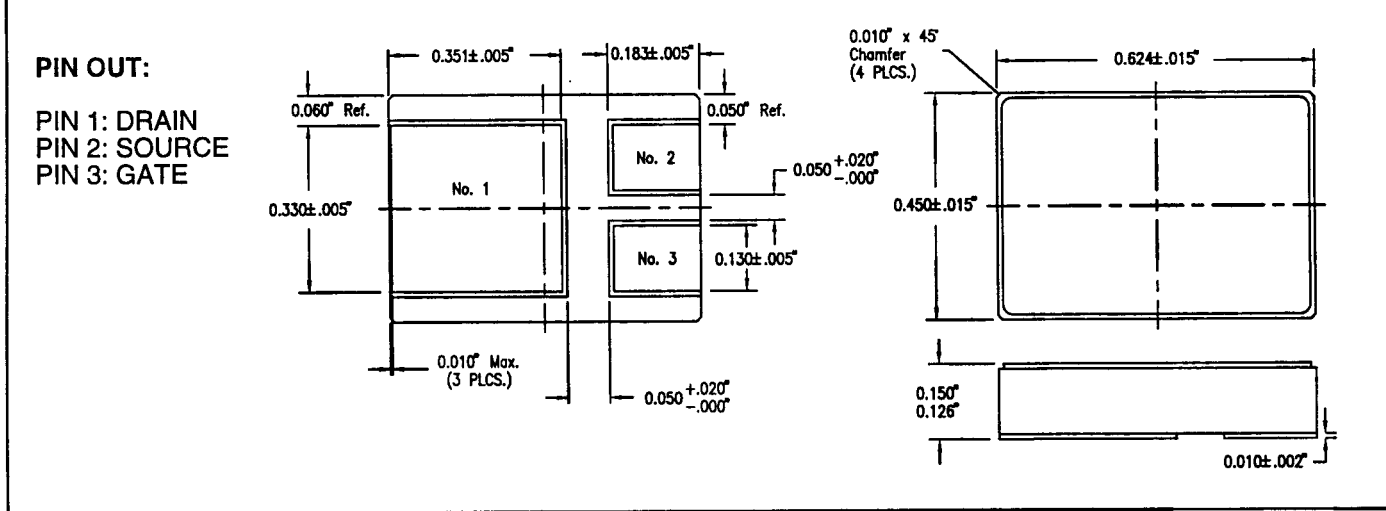
- FEATURES:**
- Rugged construction with poly silicon gate
  - Low RDS(on) and high transconductance
  - Excellent high temperature stability
  - Very fast switching speed
  - Fast recovery and superior dv/dt performance
  - Increased reverse energy capability
  - Low input and transfer capacitance for easy paralleling
  - Hermetically sealed surface mount package
  - TX, TXV and Space Level screening available
  - Replaces: IRF230 Types



**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	200	Volts
Gate to Source Voltage	V <sub>GS</sub>	±20	Volts
Continuous Drain Current	I <sub>D</sub>	9	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +150	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	2.0	°C/W
Total Device Dissipation @ TC=25°C	P <sub>D</sub>	63	Watts
Total Device Dissipation @ TC=55°C		48	

**PACKAGE OUTLINE: MILPACK**



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

**DATA SHEET #: F00009 C**

**MED**

# SFF230

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## ELECTRICAL CHARACTERISTICS @ T<sub>J</sub>=25° C (Unless Otherwise Specified)

RATING	SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (V <sub>GS</sub> =0 V, I <sub>D</sub> =250μA)	BV <sub>DSS</sub>	200	---	---	V
Drain to Source on State Resistance (V <sub>GS</sub> =10 V, I <sub>D</sub> = 5 A)	R <sub>DS(on)</sub>	---	0.25	0.4	Ω
On State Drain Current (V <sub>DS</sub> > I <sub>D(on)</sub> X R <sub>DS(on)</sub> Max, V <sub>GS</sub> =10 V)	I <sub>D(on)</sub>	9	---	---	A
Gate Threshold Voltage (V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA)	V <sub>GS(th)</sub>	2	---	4	V
Forward Transconductance (V <sub>DS</sub> > I <sub>D(on)</sub> X R <sub>DS(on)</sub> Max, I <sub>DS</sub> = 5 A)	g <sub>fs</sub>	3.0	6	---	S(Ω)
Zero Gate Voltage Drain Current (V <sub>DS</sub> =max rated voltage, V <sub>GS</sub> =0 V) (V <sub>DS</sub> =80% rated V <sub>DS</sub> , V <sub>GS</sub> =0 V, T <sub>A</sub> =125° C)	I <sub>DSS</sub>	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated V <sub>GS</sub> I <sub>gss</sub>	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	V <sub>GS</sub> =10 Volts 80% rated V <sub>DS</sub> I <sub>D</sub> = 12 A Q <sub>g</sub> Q <sub>gs</sub> Q <sub>gd</sub>	---	30 10 9	39 ---	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	V <sub>DD</sub> =50% rated V <sub>DS</sub> 50% rated I <sub>D</sub> R <sub>G</sub> = 15Ω t <sub>d(on)</sub> t <sub>r</sub> t <sub>d(off)</sub> t <sub>f</sub>	---	---	30 50 50 40	nsec
Diode Forward Voltage (I <sub>S</sub> =rated I <sub>D</sub> , V <sub>GS</sub> =0 V, T <sub>J</sub> =25° C)	V <sub>SD</sub>	---	---	2.0	V
Diode Reverse Recovery Time Reverse Recovery Charge	T <sub>J</sub> =150° C I <sub>F</sub> =rated I <sub>D</sub> di/dt=100 A/μsec t <sub>rr</sub> Q <sub>RR</sub>	---	450 3.0	---	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	V <sub>GS</sub> =0 Volts V <sub>DS</sub> =25 Volts f= 1 MHz C <sub>iss</sub> C <sub>oss</sub> C <sub>rss</sub>	---	600 250 80	800 450 150	pF

SAFE OPERATING AREA (S.O.A.)  
 T<sub>C</sub> = 25 C, D.C. CONDITION

