

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

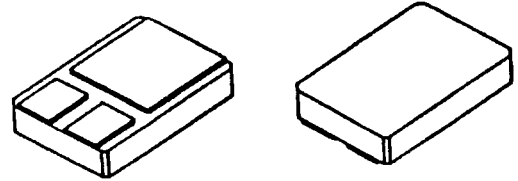
### Designer's Data Sheet

#### FEATURES:

- Rugged construction with polysilicon 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
- Ceramic Seals for improved hermeticity
- Hermetically sealed surface mount package
- TX, TXV and Space Level screening available
- Replaces: IRF240 Types

**18 AMP  
 200 VOLTS  
 0.18Ω  
 N-CHANNEL  
 POWER MOSFET**

#### MILPACK

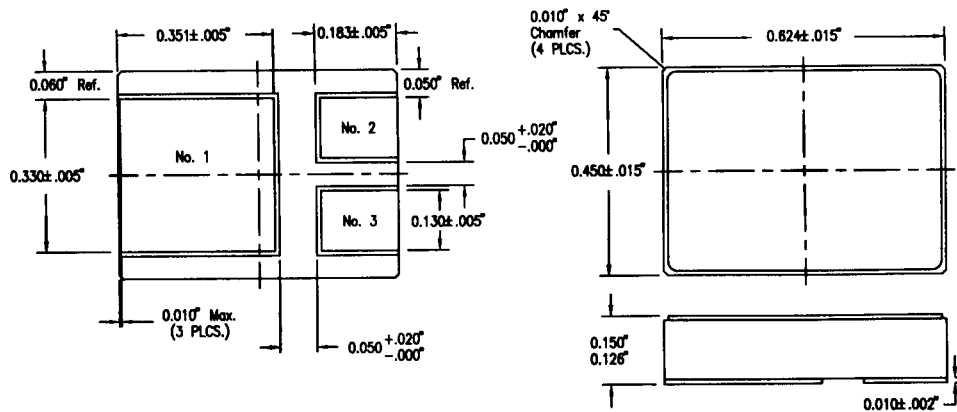


#### MAXIMUM RATINGS

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>	18	Amps
Operating and Storage Temperature	T <sub>op</sub> & T <sub>stg</sub>	-55 to +150	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	1.7	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	P <sub>d</sub>	74 56	Watts

#### PACKAGE OUTLINE: MILPACK

**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 #: F00109 B**

**MED**

# SFF240

PRELIMINARY



SOLID STATE DEVICES, INC

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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> = 10 A)	R <sub>DS(on)</sub>	---	0.13	0.18	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>	18	---	---	A
Gate Threshold Voltage (V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA)	V <sub>GS(th)</sub>	2.0	---	4.0	V
Forward Transconductance (V <sub>DS</sub> ≥ 10 V, I <sub>DS</sub> = 10 A)	g <sub>fs</sub>	6.5	10	---	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> Rated I <sub>D</sub> Q <sub>g</sub> Q <sub>gs</sub> Q <sub>gd</sub>	---	40 7 21	60 10 32	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	V <sub>DD</sub> =50% rated V <sub>DS</sub> rated I <sub>D</sub> R <sub>G</sub> = 9.1 Ω R <sub>D</sub> = 5.6Ω t <sub>d(on)</sub> t <sub>r</sub> t <sub>d(off)</sub> t <sub>f</sub>	---	14 52 45 36	21 77 68 54	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> =25°C I <sub>F</sub> =rated I <sub>D</sub> di/dt=100 A/μsec t <sub>rr</sub> Q <sub>RR</sub>	120 1.3	250 2.6	530 5.6	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>	---	1300 380 93	---	pF

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

