PRELIMINARY

SOLID STATE DEVICES, INC

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

SFF450

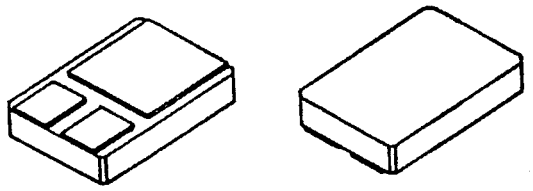
Designer's Data Sheet

12 AMP
500 VOLTS
0.40Ω
N-CHANNEL
POWER MOSFET

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 power package
- TX, TXV and Space Level screening available
- Replaces: IRF450 Types

MILPACK



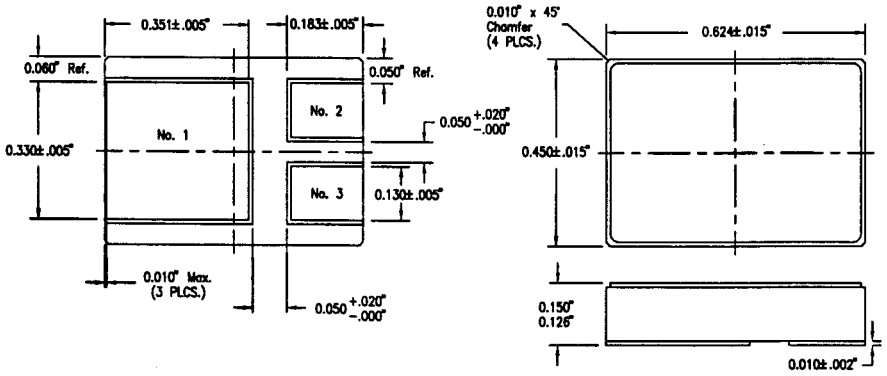
MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	VALUE	UNIT
Drain to Source Voltage		V_{DS}	500	Volts
Gate to Source Voltage		V_{GS}	±20	Volts
Continuous Drain Current	@25°C @100°C	I_D	12 7.75	Amps
Operating and Storage Temperature		T_{op} & T_{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case		$R_{\theta JC}$	1.0	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C		P_D	125 95	Watts
Single Pulse Avalanche Energy Repetitive Avalanche Energy		E_{AS} E_{AR}	8 ---	mJ

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 #: F00095 C

MED

SFF450

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

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (VGS=0 V, ID=1mA)		**BVDSS**	500	---	---	**V**
Temperature Coefficient of Breakdown Voltage		$\frac{\Delta BV_{DSS}}{\Delta TJ}$	---	0.78	---	**V/°C**
Drain to Source on State Resistance (VGS=10 V)	@ 7.75A @12 A	**RDS(on)**	---	0.35 ---	0.40 0.50	**Ω**
Gate Threshold Voltage (VDS=VGS, ID=250μA)		**VGS(th)**	2.0	---	4.0	**V**
Forward Transconductance (VDS ≥ 10 V, IDS=7.75 A)		**gfs**	5.5	13	---	**S(℧)**
Zero Gate Voltage Drain Current (VDS=80% rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125°C)		**IDSS**	--- ---	--- ---	25 250	**μA**
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 Rated ID	**Qg** **Qgs** **Qgd**	55 5 27	83 11 42	120 19 70	**nC**
Turn on Delay Time **Rise Time** **Turn Off Delay Time** **Fall Time**	VDD=50% rated VDS 50% rated ID RG= 6.2 Ω	**td(on)** **tr** **td(off)** **tf**	--- --- --- ---	26 16 55 15	35 190 170 130	**nsec**
Diode Forward Voltage (IS=rated ID, VGS=0 V, TJ=25°C)		**VSD**	---	0.9	1.7	**V**
Diode Reverse Recovery Time **Reverse Recovery Charge**	TJ=25°C IF=rated ID di/dt=100 A/μsec	**trr** **QRR**	--- ---	500 6.7	1600 14	**nsec** **μC**
Input Capacitance **Output Capacitance** **Reverse Transfer Capacitance**	VGS=0 Volts VDS=25 Volts f= 1 MHz	**Ciss** **Coss** **Crss**	--- --- ---	2700 600 240	--- --- ---	**pF**

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