


SOLID STATE DEVICES, INC

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SFF450

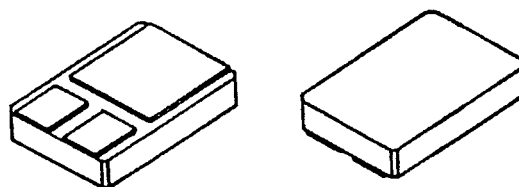
Designer's Data Sheet

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

**12 AMP
500 VOLTS
0.40Ω
N-CHANNEL
POWER MOSFET**

MILPACK



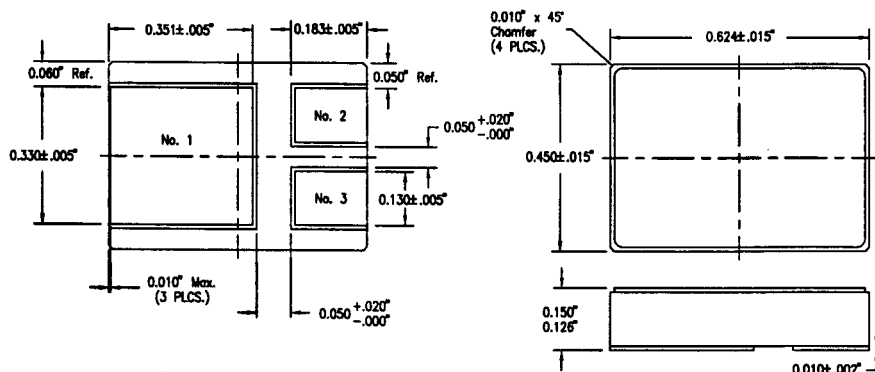
MAXIMUM RATINGS

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	$T_{OP} \text{ \& } T_{STG}$	-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	E_{AS}	8	mJ
Repetitive Avalanche Energy	E_{AR}	---	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

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		$\frac{\Delta BVDSS}{\Delta T_J}$	---	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=250 μ A)		VGS(th)	2.0	---	4.0	V
Forward Transconductance (VDS \geq 10 V, IDS=7.75 A)		gfs	5.5	13	---	S(Ω)
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	μ A
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/ μ sec	trr QRR	---	500 6.7	1600 14	nsec μ C
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.