



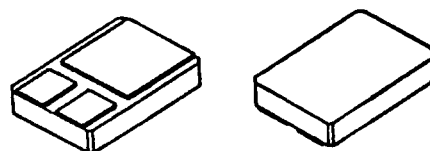
PRELIMINARY

SOLID STATE DEVICES, INC14849 Firestone Boulevard • La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) • Fax: (714) 522-7424**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
- TX, TXV and Space Level Screening available
- Replaces: IRF9140 Types

SFF9140

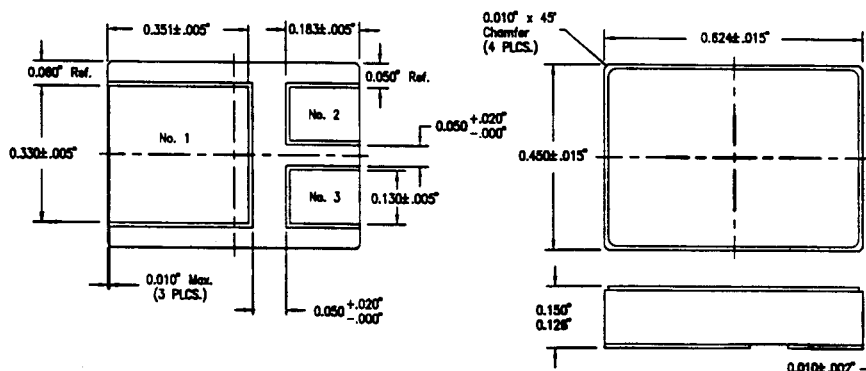
-18 AMP
-100 VOLTS
0.20Ω
P-CHANNEL
POWER MOSFET

MILPACK**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	-100	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current @TC=25°C @TC=100°C	I _D	18 11	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	1.7	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	P _D	74 56	Watts
Single Pulse Avalanche Energy	E _{AS}	500	mJ
Repetitive Avalanche Energy	E _{AR}	12.5	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 #: FP0013 D**MED**

SFF9140

PRELIMINARY

SSDI**SOLID STATE DEVICES, INC**14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**ELECTRICAL CHARACTERISTICS @ $T_J=25^{\circ}\text{C}$ (Unless Otherwise Specified)**

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage ($V_{GS}=0\text{ V}$, $I_D=1\text{ mA}$)		BV_{DSS}	-100	---	---	V
Drain to Source on State Resistance $I_D=11\text{ A}$ ($V_{GS}=-10\text{ V}$) $I_D=18\text{ A}$		$R_{DS(on)}$	---	0.15 ---	0.20 0.23	Ω
Temperature Coefficient of Breakdown Voltage		$\frac{\Delta BV_{DSS}}{\Delta T_J}$	---	-0.087	---	$V/^{\circ}\text{C}$
Gate Threshold Voltage ($V_{DS}=V_{GS}$, $I_D=-250\mu\text{A}$)		$V_{GS(th)}$	-2.0	---	-4.0	V
Forward Transconductance ($V_{DS} \geq 15\text{ V}$, $I_{DS}=11\text{ A}$)		g_{fs}	6.2	8	---	$\text{S}(\Omega)$
Zero Gate Voltage Drain Current ($V_{DS}=80\%$ max rated voltage, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated V_{DS} , $V_{GS}=0\text{ V}$, $T_A=125^{\circ}\text{C}$)		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	$V_{GS}=-10\text{ Volts}$ 50% rated V_{DS} $I_D=18\text{ A}$	Q_g Q_{gs} Q_{gd}	31 ---	50 3 25	70 13 45	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated V_{DS} rated I_D $R_G=9.1\Omega$	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	15 8 35 20	35 85 85 65	nsec
Diode Forward Voltage ($I_S=\text{rated } I_D$, $V_{GS}=0\text{ V}$, $T_J=25^{\circ}\text{C}$)		V_{SD}	---	---	-4.2	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^{\circ}\text{C}$ $I_F=\text{rated } I_D$ $di/dt=100\text{ A/sec}$	t_{rr} Q_{RR}	---	170 ---	280 3.6	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	$V_{GS}=0\text{ Volts}$ $V_{DS}=-25\text{ Volts}$ $f=1\text{ MHz}$	C_{iss} C_{oss} C_{rss}	---	1400 600 200	---	pF

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