

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

**SFF140**

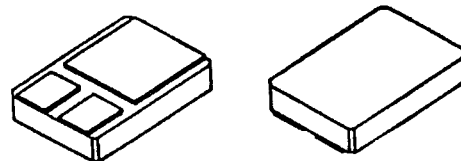
**28 AMP  
 100 VOLT  
 0.077 Ω  
 N-CHANNEL  
 POWER MOSFET**

**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 power surface mount package
- TX, TXV and Space Level screening available
- Replaces: IRF140 Types

**MILPACK**



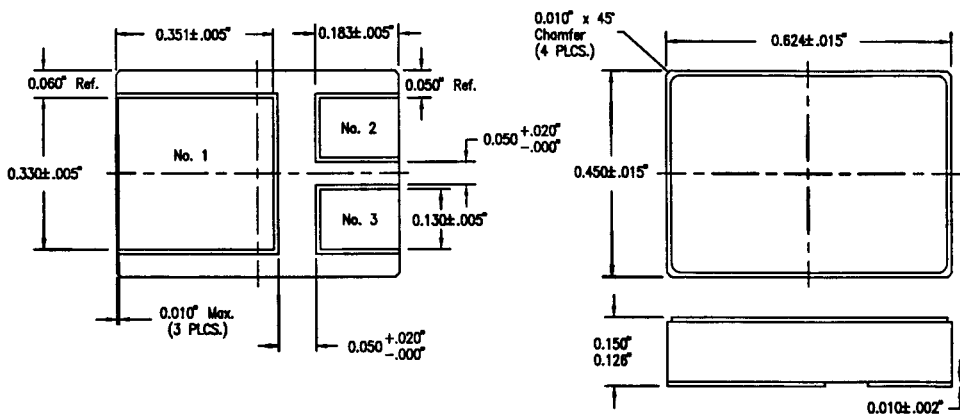
**MAXIMUM RATINGS:**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	100	Volts
Gate to Source Voltage	V <sub>GS</sub>	±20	Volts
Continuous Drain Current	I <sub>D</sub>	28	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +175	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	1.7	°C/W
Total Device Dissipation @ TC=25°C	P <sub>D</sub>	74	Watts
Total Device Dissipation @ TC=55°C		56	

**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 #: F00037 C**

**MED**

**SFF140**

**SOLID STATE DEVICES, INC**

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**ELECTRICAL CHARACTERISTICS @  $T_J=25^\circ\text{C}$  (Unless Otherwise Specified)**

RATING	SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage ( $V_{GS}=0\text{ V}$ , $I_{D}=250\mu\text{A}$ )	$BV_{DSS}$	100	---	---	V
Drain to Source on State Resistance ( $V_{GS}=10\text{ V}$ , $I_{D}=60\%$ Rated ID)	$R_{DS(on)}$	---	0.06	0.077	$\Omega$
On State Drain Current ( $V_{DS} > I_{D(on)} \times R_{DS(on)}$ Max, $V_{GS}=10\text{ V}$ )	$I_{D(on)}$	28	---	---	A
Gate Threshold Voltage ( $V_{DS}=V_{GS}$ , $I_{D}=250\mu\text{A}$ )	$V_{GS(th)}$	2.0	2.4	4.0	V
Forward Transconductance ( $V_{DS} > I_{D(on)} \times R_{DS(on)}$ Max, $I_{DS}=60\%$ rated ID)	$g_{fs}$	8.7	13	---	$S(\Omega)$
Zero Gate Voltage Drain Current ( $V_{DS}=\text{max rated voltage}$ , $V_{GS}=0\text{ V}$ ) ( $V_{DS}=80\%$ rated VDS, $V_{GS}=0\text{ V}$ , $T_A=150^\circ\text{C}$ )	$I_{DSS}$	---	---	250 1000	$\mu\text{A}$
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS $I_{GSS}$	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	$V_{GS}=10\text{ Volts}$ 50% rated VDS Rated ID $Q_g$ $Q_{gs}$ $Q_{gd}$	---	40 8 19	60 12 28	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated VDS rated ID $R_G=9.1\Omega$ $t_{d(on)}$ $t_r$ $t_{d(off)}$ $t_f$	---	15 72 40 50	23 110 60 75	nsec
Diode Forward Voltage ( $I_S=\text{rated ID}$ , $V_{GS}=0\text{ V}$ , $T_J=25^\circ\text{C}$ )	$V_{SD}$	---	1.3	2.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^\circ\text{C}$ $I_F=10\text{A}$ $di/dt=100\text{ A}/\mu\text{sec}$ $t_{rr}$ $Q_{RR}$	70 0.44	150 0.91	300 1.9	nsec $\mu\text{C}$
Input Capacitance Output Capacitance Reverse Transfer Capacitance	$V_{GS}=0\text{ Volts}$ $V_{DS}=25\text{ Volts}$ $f=1\text{ MHz}$ $C_{iss}$ $C_{oss}$ $C_{rss}$	---	1500 500 90	---	pF

 SAFE OPERATING AREA (S.O.A.)  
 $T_C = 25^\circ\text{C}$ , D.C. CONDITION
