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Designer's Data Sheet

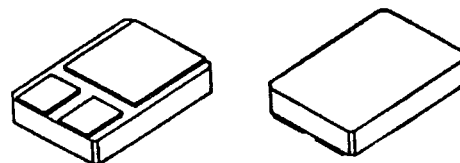
FEATURES:

- 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

SFF140

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

MILPACK



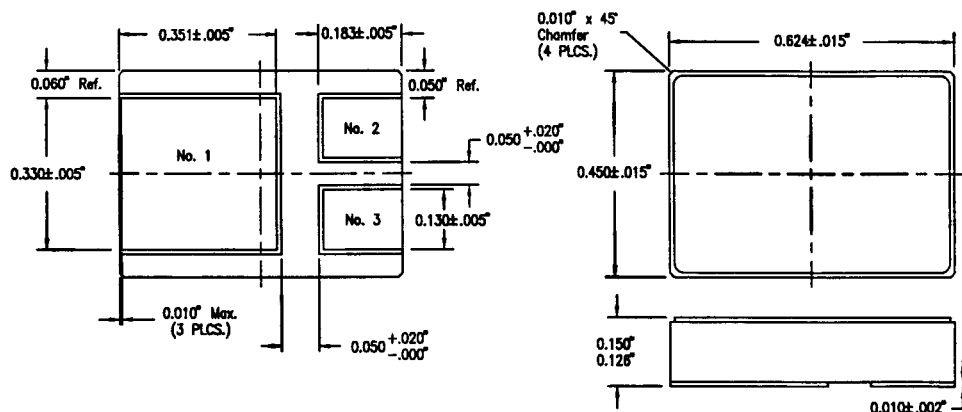
MAXIMUM RATINGS:

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V_{DS}	100	Volts
Gate to Source Voltage	V_{GS}	± 20	Volts
Continuous Drain Current	I_D	28	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +175	$^{\circ}\text{C}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.7	$^{\circ}\text{C/W}$
Total Device Dissipation @ $T_C=25^{\circ}\text{C}$ Total Device Dissipation @ $T_C=55^{\circ}\text{C}$	P_D	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 #: F00037 C

MED

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	Ω
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(Ω)
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	μA
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 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}	---	1500 500 90	---	pF

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