



PRELIMINARY

SOLID STATE DEVICES, INC

SFF340/66

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

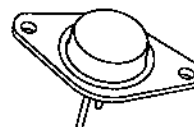
Designer's Data Sheet

FEATURES:

- Rugged construction with poly silicon gate
- Low $R_{DS(on)}$ 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 package
- TX, TXV and Space Level screening available
- Replaces: IRF340 Types

**10 AMP
400 VOLTS
0.55 Ω
N-CHANNEL
POWER MOSFET**

TO-66

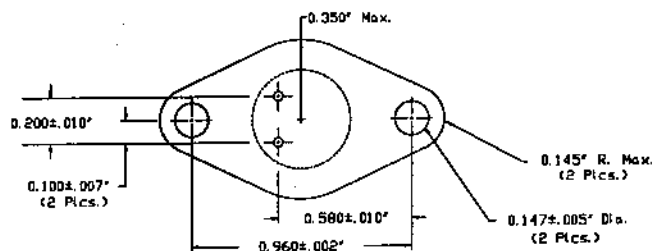
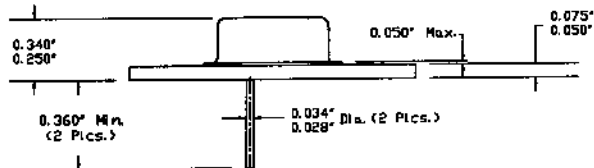


MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V_{DS}	400	Volts
Gate to Source Voltage	V_{GS}	± 20	Volts
Continuous Drain Current	I_D	8.5	Amps
Operating and Storage Temperature	$T_{op} \& T_{stg}$	-55 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2	$^{\circ}C/W$
Total Device Dissipation @ $T_C=25^{\circ}C$ Total Device Dissipation @ $T_C=55^{\circ}C$	P_D	63 48	Watts

PACKAGE OUTLINE: TO-66

PIN OUT:

PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE

NOTE: All specifications are subject to change without notification. SSDI's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: F00317 A

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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 ($V_{GS}=0\text{ V}$, $I_D=250\mu\text{A}$)	BV_{DSS}	400	---	---	V
Drain to Source on State Resistance ($V_{GS}=10\text{ V}$, $I_D=60\%$ Rated I_D)	$R_{DS(on)}$	---	0.42	0.55	Ω
On State Drain Current ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $V_{GS}=10\text{ V}$)	$I_D(on)$	10	---	---	A
Gate Threshold Voltage ($V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$)	$V_{GS(th)}$	2.0	---	4.0	V
Forward Transconductance ($V_{DS} \geq 50\text{ V}$, $I_{DS}=60\%$ rated I_D)	g_{fs}	5.8	8.7	---	S(Ω)
Zero Gate Voltage Drain Current ($V_{DS}=\text{max rated voltage}$, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated V_{DS} , $V_{GS}=0\text{ V}$, $T_A=125^\circ\text{C}$)	I_{DSS}	---	---	250 1000	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	$V_{GS}=10\text{ Volts}$ 80% rated V_{DS} $I_D=10\text{ A}$ Q_g Q_{gs} Q_{gd}	---	43 6 22	65 9.3 33	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated V_{DS} $I_D=10\text{ A}$ $R_G=9.1\Omega$ $R_D=20\Omega$ $t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	14 27 50 24	30 30 74 36	nsec
Diode Forward Voltage ($I_S=\text{rated } I_D$, $V_{GS}=0\text{ V}$, $T_J=25^\circ\text{C}$)	V_{SD}	---	---	2.0	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^\circ\text{C}$ $I_F=\text{rated } I_D$ $di/dt=100\text{ A}/\mu\text{sec}$ t_{rr} Q_{RR}	170 1.6	370 3.8	790 8.2	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}	---	1300 350 130	1600 450 190	pF

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