

isc N-Channel MOSFET Transistor
IRF530N
• FEATURES

- Low $R_{DS(on)}$
- V_{GS} Rated at $\pm 20V$
- Silicon Gate for Fast Switching Speed
- Rugged
- Low Drive Requirements

• DESCRIPTION

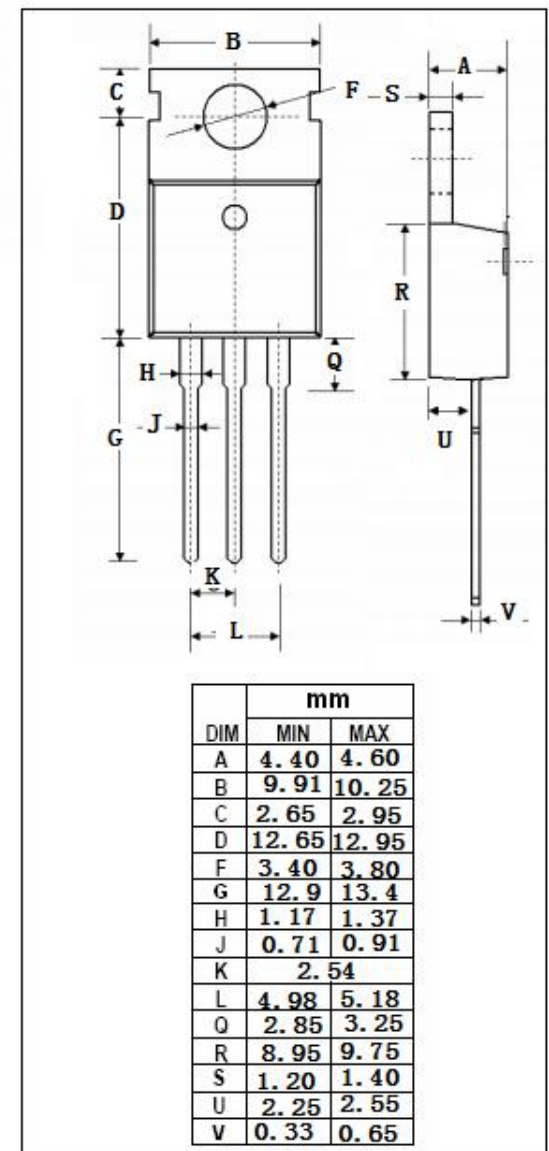
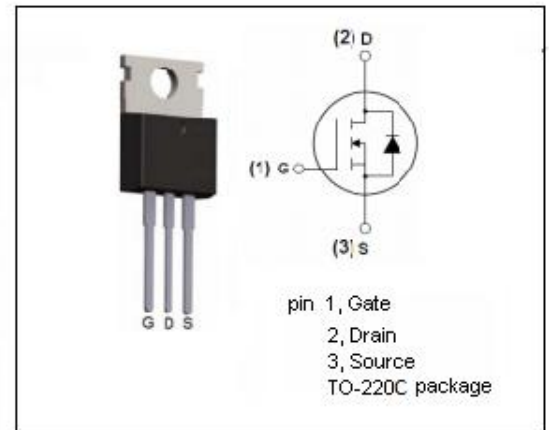
- Designed especially for high voltage, high speed applications, such as off-line switching power supplies, UPS, AC and DC motor controls, relay and solenoid drivers.

• ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ C$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage-Continuous	± 20	V
I_D	Drain Current-Continuous	17	A
I_{DM}	Drain Current-Single Pulsed	68	A
P_D	Total Dissipation @ $T_c=25^\circ C$	79	W
T_j	Max. Operating Junction Temperature	-55~175	$^\circ C$
T_{stg}	Storage Temperature	-55~175	$^\circ C$

• THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.9	$^\circ C/W$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	60	$^\circ C/W$



isc N-Channel MOSFET Transistor**IRF530N****ELECTRICAL CHARACTERISTICS** $T_c=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0; I_D=0.25\text{mA}$	100			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=1.0\text{mA}$	2		4	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10\text{V}; I_D=9\text{A}$			0.11	Ω
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 20\text{V}; V_{DS}=0$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=100\text{V}; V_{GS}=0$			10	μA
V_{SD}	Forward On-Voltage	$I_S=17\text{A}; V_{GS}=0$			1.2	V
C_{iss}	Input Capacitance			633		pF
C_{oss}	Output Capacitance	$V_{DS}=25\text{V}; V_{GS}=0\text{V}; F=1.0\text{MHz}$		103		pF
C_{rss}	Reverse Transfer Capacitance			61		pF

• SWITCHING CHARACTERISTICS ($T_c=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$T_d(on)$	Turn-on Delay Time			6		ns
T_r	Rise Time	$V_{DD}=50\text{V}$ $V_{GS}=10\text{V}$		36		ns
$T_d(off)$	Turn-off Delay Time	$R_{GS}=2.7\Omega$ $R_{GEN}=5.6\Omega$		18		ns
T_f	Fall Time			12		ns