

isc N-Channel Mosfet Transistor

IRF631

• FEATURES

- $R_{DS(on)} = 0.4 \Omega$
- 9A and 150V
- single pulse avalanche energy rated
- SOA is Power- Dissipation Limited
- Linear Transfer Characteristics
- High Input Impedance

• DESCRIPTION

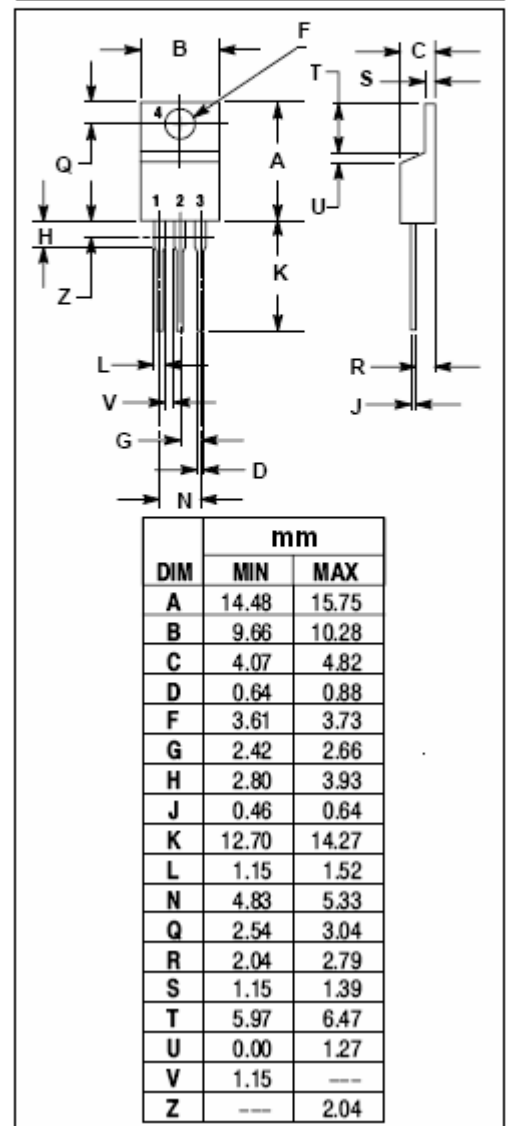
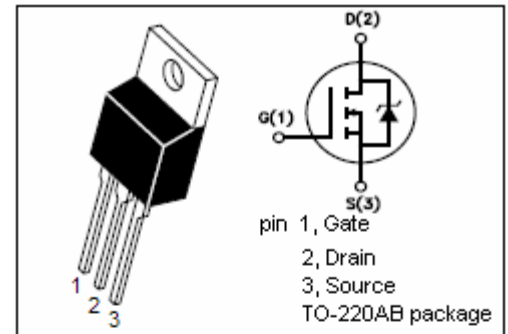
- Designed for high speed applications, such as switching power supplies , AC and DC motor controls ,relay and solenoid drivers and other pulse.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	150	V
V_{GS}	Gate-Source Voltage-Continuous	± 20	V
I_D	Drain Current-Continuous	9	A
I_{DM}	Drain Current-Single Plused	36	A
P_D	Total Dissipation @ $T_C=25^\circ C$	75	W
T_j	Max. Operating Junction Temperature	-55~150	$^\circ C$
T_{stg}	Storage Temperature	-55~150	$^\circ C$

• THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance,Junction to Case	1.67	$^\circ C/W$
$R_{th j-a}$	Thermal Resistance,Junction to Ambient	80	$^\circ C/W$



isc N-Channel Mosfet Transistor**IRF631****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	$V_{GS}=0; I_D=0.25\text{mA}$	150			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=0.25\text{mA}$	2		4	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10\text{V}; I_D=5\text{A}$			0.4	Ω
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 20\text{V}; V_{DS}=0$			± 500	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=150\text{V}; V_{GS}=0$			250	μA
V_{SD}	Forward On-Voltage	$I_S=9\text{A}; V_{GS}=0$			2.0	V
C_{iss}	Input Capacitance	$V_{DS}=25\text{V}, V_{GS}=0\text{V}, F=1.0\text{MHz}$		600		pF
C_{oss}	Output Capacitance			250		pF
C_{rss}	Reverse Transfer Capacitance			80		pF

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$T_d(on)$	Turn-on Delay Time	$V_{DD}=90\text{V}, I_D=9.0\text{A}$ $R_G=9.1\Omega$			30	ns
T_r	Rise Time				50	ns
$T_d(off)$	Turn-off Delay Time				50	ns
T_f	Fall Time				40	ns