

isc N-Channel Mosfet Transistor

IRF610

• FEATURES

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

• DESCRIPTION

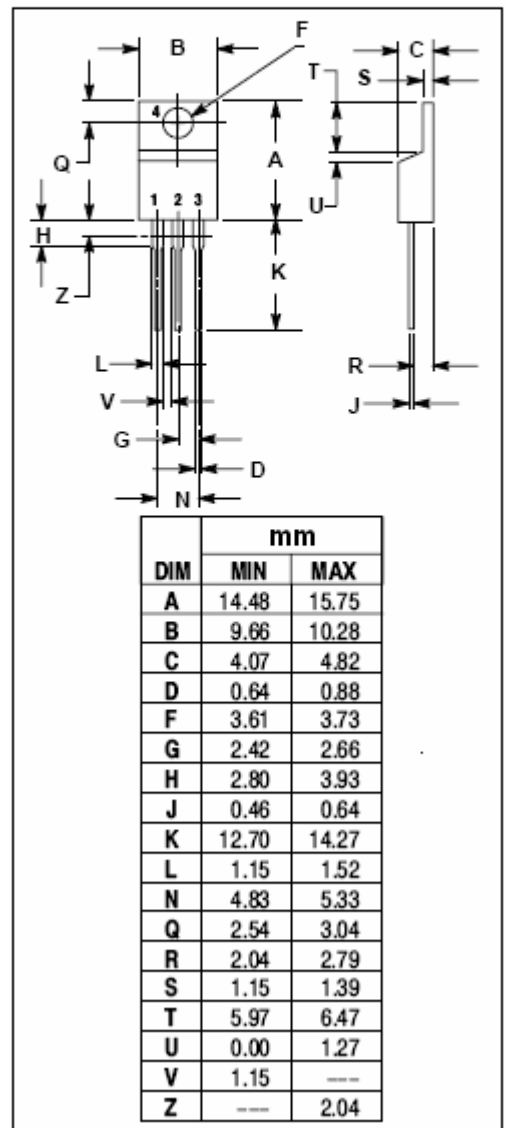
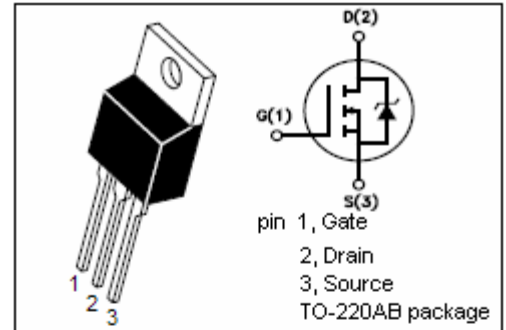
- Designed especially for high voltage,high speed applications, such as off-line switching power supplies , UPS,AC and DC motor controls,relay and solenoid drivers.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage	200	V
$V_{GS}$	Gate-Source Voltage-Continuous	$\pm 20$	V
$I_D$	Drain Current-Continuous	3.3	A
$I_{DM}$	Drain Current-Single Plused	8	A
$P_D$	Total Dissipation @ $T_C=25^{\circ}C$	43	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	2.9	$^{\circ}C/W$
$R_{th\ j-a}$	Thermal Resistance,Junction to Ambient	80	$^{\circ}C/W$



**isc N-Channel Mosfet Transistor****IRF610****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0; I_D=0.25\text{mA}$	200		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	$V_{GS}=10\text{V}; I_D=1.6\text{A}$		1.5	$\Omega$
$I_{GSS}$	Gate-Body Leakage Current	$V_{GS}= \pm 20\text{V}; V_{DS}=0$		$\pm 500$	nA
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=200\text{V}; V_{GS}=0$		250	$\mu\text{A}$
$V_{SD}$	Forward On-Voltage	$I_S=3.3\text{A}; V_{GS}=0$		2.0	V
$C_{iss}$	Input Capacitance	$V_{DS}=25\text{V}, V_{GS}=0\text{V},$ $F=1.0\text{MHz}$		200	pF
$C_{oss}$	Output Capacitance			80	pF
$C_{rss}$	Reverse Transfer Capacitance			25	pF

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$T_d(on)$	Turn-on Delay Time	$V_{DD}=100\text{V}, I_D=3.3\text{A}$ $V_{GS}=10\text{V}, R_{GEN}=24\Omega$ $R_{GS}=24\Omega$		8	12	ns
$T_r$	Rise Time			17	26	ns
$T_d(off)$	Turn-off Delay Time			13	21	ns
$T_f$	Fall Time			9	13	ns