

isc N-Channel MOSFET Transistor

IRF640A

FEATURES

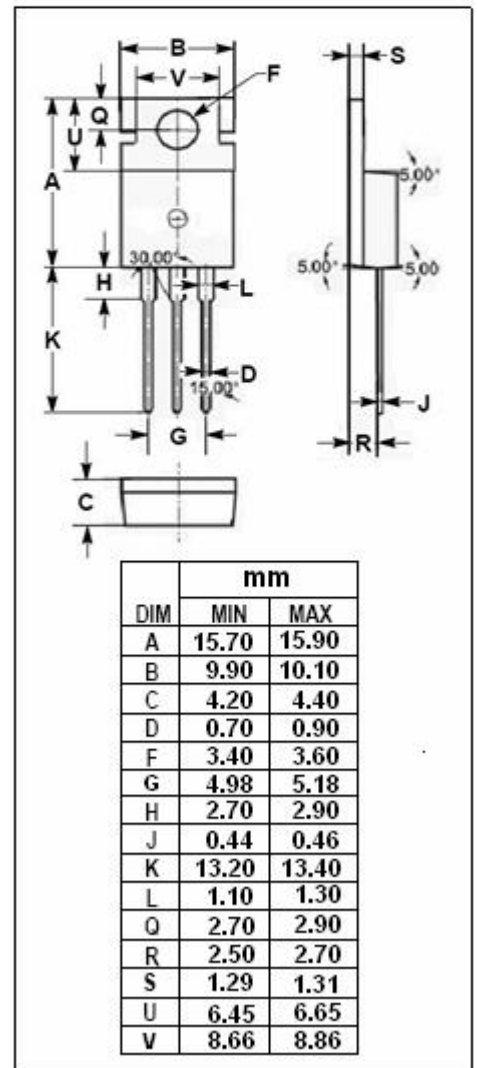
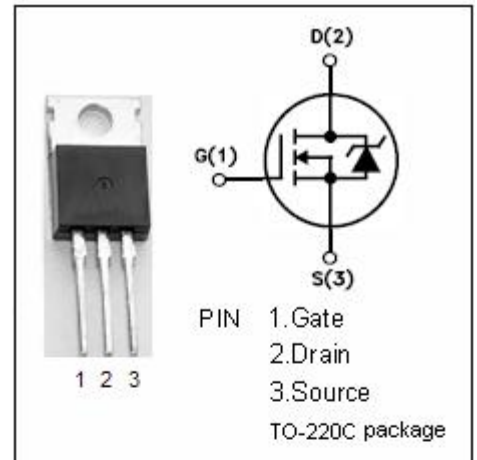
- Low $R_{DS(on)} = 0.144 \Omega$ (TYP)
- Lower Input Capacitance
- Improved Gate Charge
- Extended Safe Operating Area
- Rugged Gate Oxide Technology

DESCRIPTION

- Designed for use in switch mode power supplies and general purpose applications.

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	± 30	V
I_D	Drain Current-Continuous	18	A
I_{DM}	Drain Current-Single Pluse	72	A
P_D	Total Dissipation @ $T_C=25^\circ C$	139	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	0.9	°C/W
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	°C/W

isc N-Channel MOSFET Transistor**IRF640A****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	$V_{GS}=10\text{V}; I_D=9\text{A}$		0.18	Ω
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 30\text{V}; V_{DS}=0$		± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=200\text{V}; V_{GS}=0$ $V_{DS}=160\text{V}; V_{GS}=0; T_j=125^\circ\text{C}$		10 100	μA
V_{SD}	Forward On-Voltage	$I_S=18\text{A}; V_{GS}=0$		1.5	V
C_{iss}	Input Capacitance	$V_{DS}=25\text{V}, V_{GS}=0\text{V},$ $F=1.0\text{MHz}$		1500	pF
C_{oss}	Output Capacitance			250	pF
C_{rss}	Reverse Transfer Capacitance			110	pF

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$T_d(on)$	Turn-on Delay Time	$V_{DD}=100\text{V}, I_D=18\text{A}$ $R_G=9.1\Omega$		17	40	ns
T_r	Rise Time			16	40	ns
$T_d(off)$	Turn-off Delay Time			48	110	ns
T_f	Fall Time			24	60	ns