

isc N-Channel MOSFET Transistor

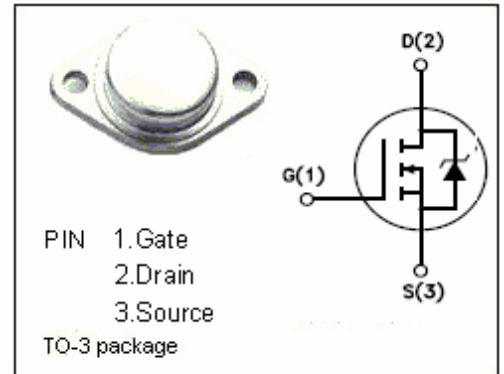
IRF452

DESCRIPTION

- 11A,500V
- Low $R_{DS(on)}$ at high voltage
- Improved inductive ruggedness
- Low input Characteristics
- Fast switching times
- Extended safe operating area

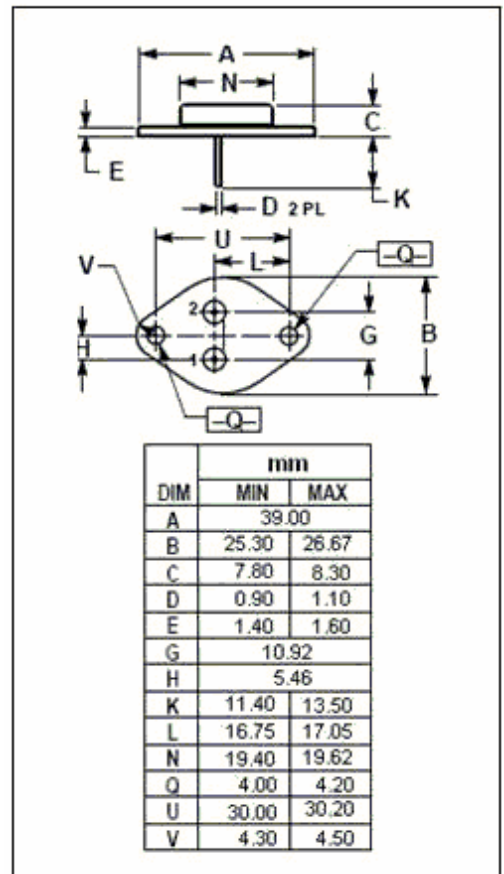
APPLICATIONS

- Designed for applications such as switching regulators, switching convertors ,motor drivers ,relay driver ,and drivers for high power bipolar switching transistors requiring high speed and low gate drive power.



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

SYMBOL	ARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage ($V_{GS}=0$)	500	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current-continuous@ $TC=25^{\circ}C$	11	A
P_{tot}	Total Dissipation@ $TC=25^{\circ}C$	125	W
T_j	Max. Operating Junction Temperature	-55~150	$^{\circ}C$
T_{stg}	Storage Temperature Range	-55~150	$^{\circ}C$



THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance,Junction to Case	0.83	$^{\circ}C/W$
$R_{th j-A}$	Thermal Resistance,Junction to Ambient	30	$^{\circ}C/W$

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0$; $I_D=0.25\text{mA}$	500			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-stage Resistance	$V_{GS}=10\text{V}$; $I_D=7.2\text{A}$			0.5	Ω
I_{GSS}	Gate Source Leakage Current	$V_{GS}=\pm 20\text{V}$; $V_{DS}=0$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=500\text{V}$; $V_{GS}=0$			250	μA
V_{SD}	Diode Forward Voltage	$I_F=13\text{A}$; $V_{GS}=0$			1.4	V
C_{iss}	Input Capacitance	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$, $F=1.0\text{MHz}$		1800		pF
C_{oss}	Output Capacitance			400		pF
C_{rss}	Reverse Transfer Capacitance			100		pF

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT	
$T_d(\text{on})$	Turn-on Delay Time	$V_{DD}=250\text{V}$, $I_D=13\text{A}$ $R_G=6.2\Omega$		20	27	ns	
T_r	Rise Time			40	66	ns	
$T_d(\text{off})$	Turn-off Delay Time				72	100	ns
T_f	Fall Time				35	60	ns