

isc N-Channel MOSFET Transistor

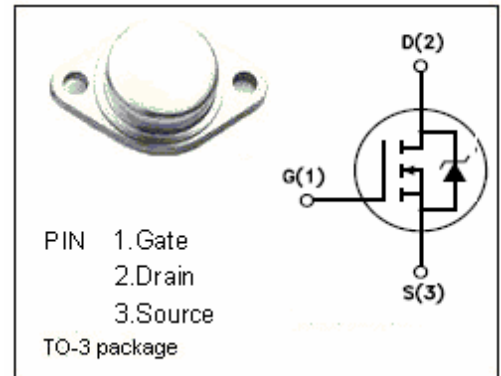
IRF142

DESCRIPTION

- Drain Current $I_D=24A @ T_C=25^\circ C$
- Drain Source Voltage-
: $V_{DSS}= 100V(\text{Min})$
- Static Drain-Source On-Resistance
: $R_{DS(on)} =0.11 \Omega (\text{Max})$
- High Power,High Speed Applications

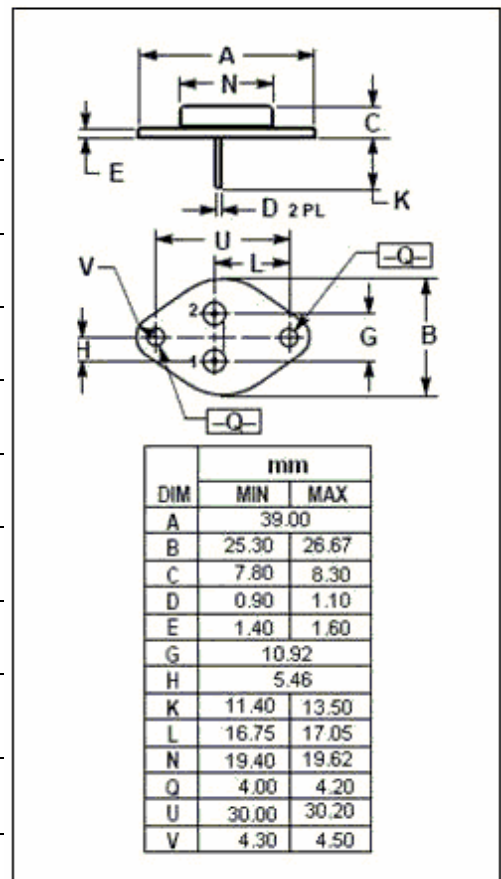
APPLICATIONS

- Switching power supplies



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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage ($V_{GS}=0$)	100	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current-continuous@ $T_C=25^\circ C$	24	A
P_{tot}	Total Dissipation@ $T_C=25^\circ C$	125	W
T_j	Max. Operating Junction Temperature	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	1.0	$^\circ C/W$
$R_{th j-a}$	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	TYPE	MAX	UNIT
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0$; $I_D=250\mu\text{A}$	100			V
$V_{GS(TH)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}$; $I_D=250\mu\text{A}$	2.0		4.0	V
$R_{DS(ON)}$	Drain-Source On-stage Resistance	$V_{GS}=10\text{V}$; $I_D=8\text{A}$			0.11	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	$V_{DS}=100\text{V}$; $V_{GS}=0$			250	μA
V_{SD}	Diode Forward Voltage	$I_S=24\text{A}$; $V_{GS}=0$			2.3	V
C_{iss}	Input Capacitance	$V_{DS}=25\text{V}$; $V_{GS}=0\text{V}$; $f_T=1\text{MHz}$		1320	1600	pF
C_{rss}	Reverse Transfer Capacitance			250	300	
C_{oss}	Output Capacitance			600	800	
t_r	Rise Time	$I_D=15\text{A}$; $V_{DD}=50\text{V}$; $R_L=4.7\ \Omega$			60	ns
$t_{d(on)}$	Turn-on Delay Time				30	
t_f	Fall Time				30	
$t_{d(off)}$	Turn-off Delay Time				80	