

isc P-Channel Mosfet Transistor

IRF9530

FEATURES

- -12A, -100V
- Single pulse avalanche energy rated
- Static Drain-Source On-Resistance: $R_{DS(on)} = 0.3 \Omega$ (Max)
- SOA is power dissipation limited
- Nanosecond switching speeds
- Linear transfer characteristics
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

DESCRIPTION

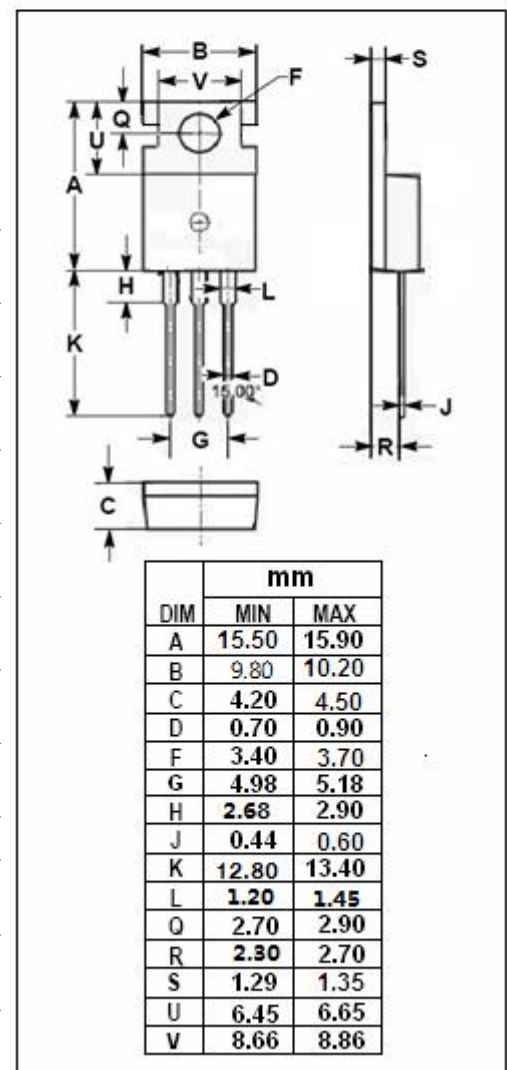
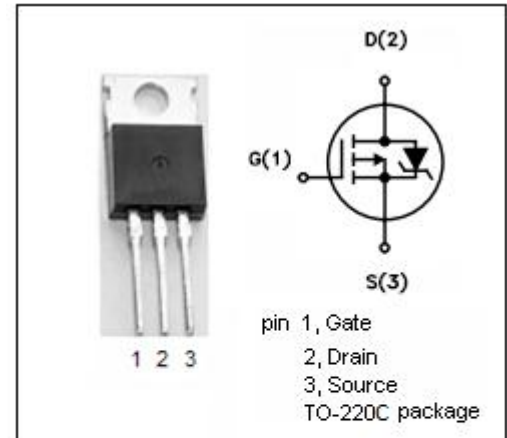
- The power MOSFET is designed for applications such as switching regulators, switching convertors, motor drivers, relay drivers and drivers for high power bipolar switching transistors requiring high speed and low gate drive power

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DS}	Drain-Source Voltage ($V_{GS}=0$)	-100	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current-continuous@ $TC=25^\circ\text{C}$	-12	A
I_{DM}	Drain Current-Single Pulsed	-48	A
P_{tot}	Total Dissipation@ $TC=25^\circ\text{C}$	75	W
T_j	Max. Operating Junction Temperature	-55~150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance, Junction to Case	1.67	$^\circ\text{C/W}$
$R_{th j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	MAX	UNIT
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0$; $I_D=-0.25\text{mA}$	-100			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}$; $I_D=-0.25\text{mA}$	-2.0		-4.0	V
V_{SD}	Diode Forward On-voltage	$I_S=-12\text{A}$; $V_{GS}=0$			-1.5	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=-10\text{V}$; $I_D=-6.5\text{A}$			0.3	Ω
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 20\text{V}$; $V_{DS}=0$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-100\text{V}$; $V_{GS}=0$			-25	μA
G_{fs}	Forward Transconductance	$I_D=-6.5\text{A}$	2			S
$t_{d(on)}$	Turn-on Delay Time	$I_D=-12\text{A}$; $V_{DD}=50\text{V}$; $R_G=50\Omega$; $V_{GS}=10\text{V}$			60	ns
t_r	Rise Time				140	
$t_{d(off)}$	Turn-off Delay Time				140	
t_f	Fall Time				140	

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