

isc N-Channel MOSFET Transistor

IRF520N

• FEATURES

- Low $R_{DS(on)}$
- V_{GS} Rated at $\pm 20V$
- Silicon Gate for Fast Switching Speed
- Rugged
- Low Drive Requirements
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRIPTION

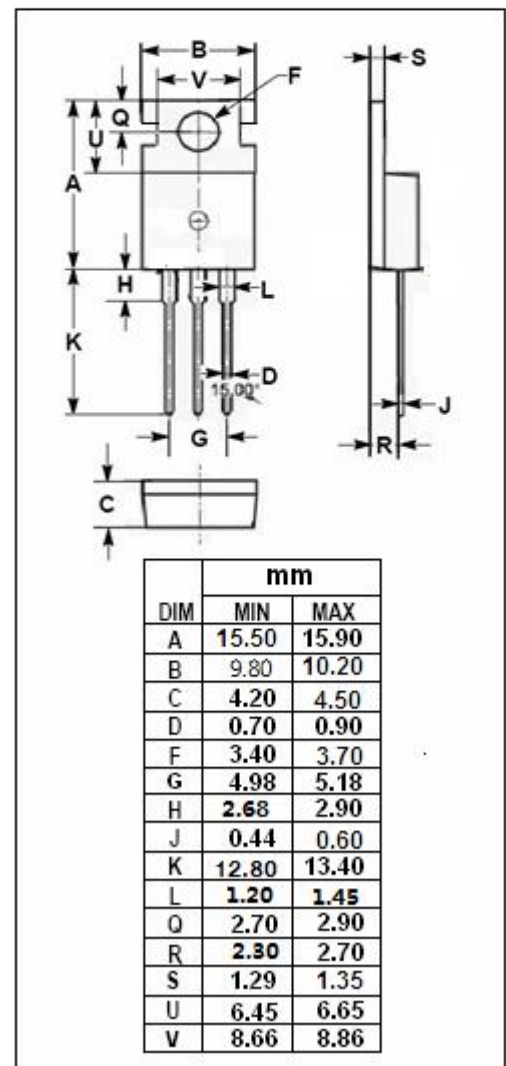
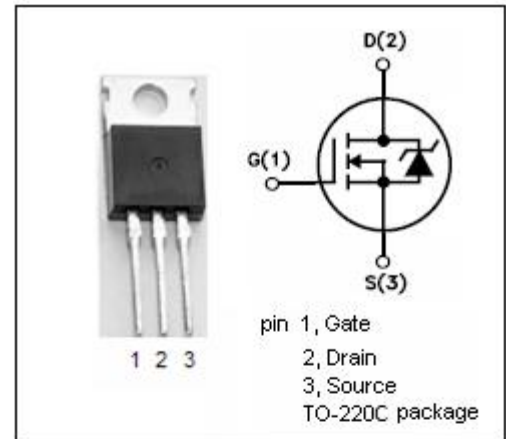
- Designed especially for high voltage, high speed applications, such as off-line switching power supplies, UPS, AC and DC motor controls, relay and solenoid drivers.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage-Continuous	± 20	V
I_D	Drain Current-Continuous	9.7	A
I_{DM}	Drain Current-Single Pulsed	38	A
P_D	Total Dissipation @ $T_c=25^\circ C$	48	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	3.125	$^\circ C/W$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62	$^\circ C/W$



isc N-Channel MOSFET Transistor**IRF520N****ELECTRICAL CHARACTERISTICS**T_C=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0; I _D = 0.25mA	100			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} ; I _D = 0.25mA	2		4	V
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} = 10V; I _D = 5.7A			0.2	Ω
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V; V _{DS} = 0			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 100V; V _{GS} =0			25	uA
V _{SD}	Forward On-Voltage	I _S = 5.7A; V _{GS} =0			1.3	V
G _{fs}	Forward Transconductance	V _{DS} ≥ 50V; I _D = 5.7A	2.7			S
C _{iss} *	Input capacitance			3400		pF
C _{oss} *	Output capacitance	V _{GS} =0V V _{DS} =25V f=1MHz		260		pF
C _{rss} *	Reverse transfer capacitance			210		pF
td(on)*	Turn-on delay time			15		ns
Tr*	Rise time	V _{DD} =30V V _{GS} =10V I _D =2A		11		ns
td(off)*	Turn-off delay time	R _G =2.5Ω R _L =15Ω		52		ns
Tf*	Fall time			13		ns
Qg*	Total Gate Charge				94	nC
Qgs*	Gate-Source Charge	I _D =30A V _{DS} =30V V _{GS} =10V			16	nC
Qgd*	Gate-Drain Charge				24	nC

*:Pulse width≤300us,duty cycle ≤2%

*:Guaranteed by design,not subject to production