

isc N-Channel MOSFET Transistor

40N20

• 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

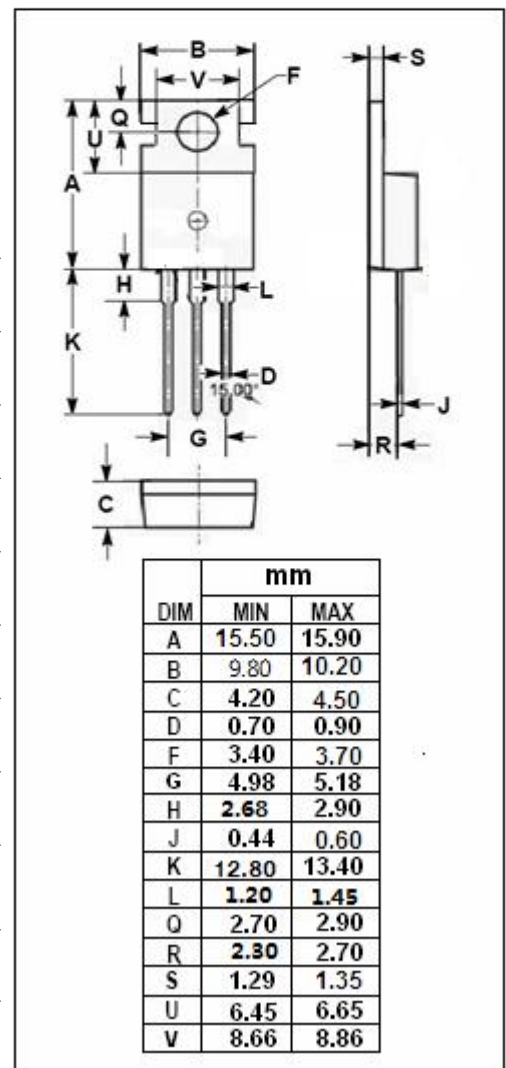
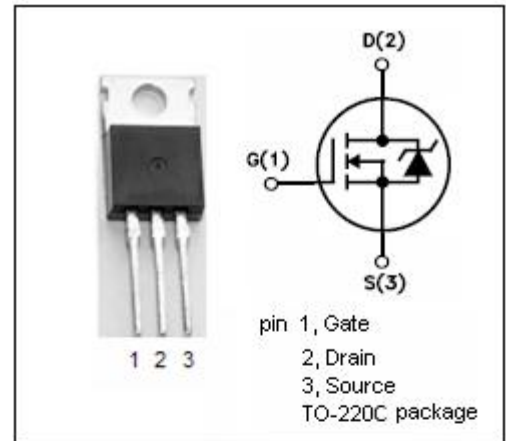
- Power switching applications
- Hard switched and high frequency circuits
- Uninterruptible power supply

• 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	± 20	V
I_D	Drain Current-Continuous	40	A
I_{DM}	Drain Current-Single Plused	160	A
P_D	Total Dissipation @ $T_c=25^\circ C$	220	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	1.47	$^\circ C/W$



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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	200			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 = 20A			50	mΩ
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V; V _{DS} = 0			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 200V; V _{GS} =0			1.0	uA
V _{SD}	Forward On-Voltage	I _S = 40A; V _{GS} =0			1.2	V
G _{fs}	Forward Transconductance	V _{DS} ≥ 25V; I _D = 25A	26			S
C _{iss} *	Input capacitance			6500		pF
C _{oss} *	Output capacitance	V _{GS} =0V V _{DS} =25V f=1MHz		290		pF
C _{rss} *	Reverse transfer capacitance			220		pF
td(on)*	Turn-on delay time			26		ns
Tr*	Rise time	V _{DD} =30V V _{GS} =10V I _D =2A		24		ns
td(off)*	Turn-off delay time	R _G =2.5Ω R _L =15Ω		91		ns
Tf*	Fall time			39		ns
Qg*	Total Gate Charge			163		nC
Qgs*	Gate-Source Charge	I _D =30A V _{DS} =30V V _{GS} =10V		31		nC
Qgd*	Gate-Drain Charge			64		nC

*:Pulse width≤300us,duty cycle ≤2%

*:Guaranteed by design,not subject to production

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