

isc N-Channel MOSFET Transistor

3N90

• FEATURES

- Drain Current $I_D = 3A @ T_C = 25^\circ C$
- Drain Source Voltage-
: $V_{DSS} = 900V(\text{Min})$
- Static Drain-Source On-Resistance
: $R_{DS(on)} = 4.8 \Omega (\text{Max})$
- Fast Switching

• APPLICATIONS

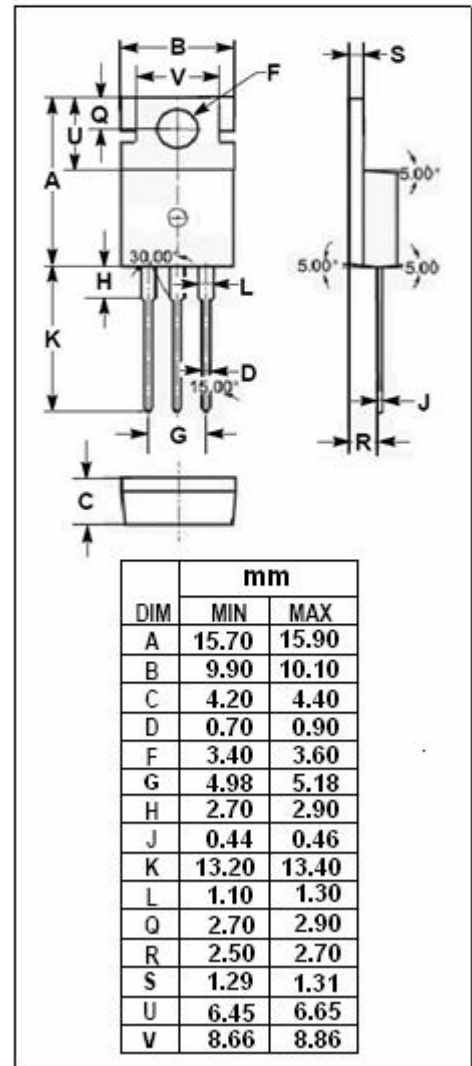
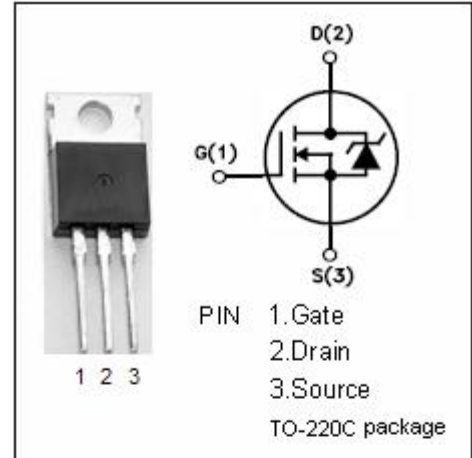
- Switching power supplies, converters, AC and DC motor controls

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	900	V
V_{GS}	Gate-Source Voltage-Continuous	± 30	V
I_D	Drain Current-Continuous	3	A
I_{DM}	Drain Current-Single Plused	10	A
P_D	Total Dissipation @ $T_C = 25^\circ C$	75	W
T_j	Max. Operating Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature	-55~150	$^\circ C$

• THERMAL CHARACTERISTICS

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



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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	$V_{GS}=0; I_D=250\mu\text{A}$	900			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=250\mu\text{A}$	3.0		4.5	V
V_{SD}	Diode Forward On-voltage	$I_S=3\text{A}; V_{GS}=0$			1.6	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10\text{V}; I_D=1.5\text{A}$			4.8	Ω
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 30\text{V}; V_{DS}=0$			± 10	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=550\text{V}; V_{GS}=0$			1	μA
C_{iss}	Input Capacitance	$V_{DS}=25\text{V};$		590		pF
C_{rss}	Reverse Transfer capacitance	$V_{GS}=0\text{V};$		13		
C_{oss}	Output Capacitance	$f_T=1\text{MHz}$		63		
t_r	Rise Time	$V_{GS}=10\text{V};$		7		ns
$t_{d(on)}$	Turn-on Delay Time	$I_D=1.5\text{A};$		18		
t_f	Fall Time	$V_{DD}=450\text{V};$		18		
$t_{d(off)}$	Turn-off Delay Time	$R_L=4.7\Omega$		45		