

isc N-Channel MOSFET Transistor

14N05

• FEATURES

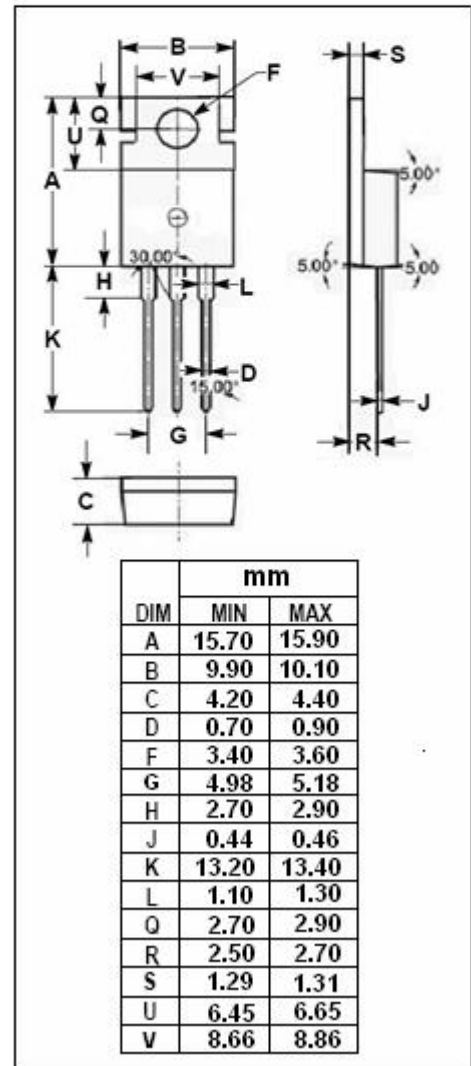
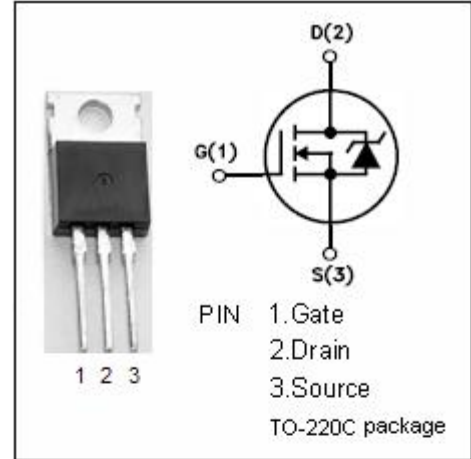
- Drain Current $I_D = 14A @ T_C = 25^\circ C$
- Drain Source Voltage-
: $V_{DSS} = 50V (Min)$
- Static Drain-Source On-Resistance
: $R_{DS(on)} = 0.1 \Omega (Max)$
- Fast Switching

• APPLICATIONS

- Switch regulators
- Switching converters motor drivers and relay drivers

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	50	V
V_{GS}	Gate-Source Voltage-Continuous	± 10	V
I_D	Drain Current-Continuous	14	A
P_D	Total Dissipation @ $T_C = 25^\circ C$	48	W
T_j	Max. Operating Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature	-55~150	$^\circ C$



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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	$V_{GS}=0; I_D=250\mu\text{A}$	50			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=250\mu\text{A}$	2.0		4.0	V
V_{SD}	Diode Forward On-voltage	$I_S=14\text{A}; V_{GS}=0$			1.5	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10\text{V}; I_D=14\text{A}$			0.1	Ω
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 10\text{V}; V_{DS}=0$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=40\text{V}; V_{GS}=0$			1	μA
C_{iss}	Input Capacitance	$V_{DS}=25\text{V};$ $V_{GS}=0\text{V};$ $f_T=1\text{MHz}$		670		pF
C_{rss}	Reverse Transfer capacitance			50		
C_{oss}	Output Capacitance			185		
t_r	Rise Time	$V_{GS}=10\text{V};$ $R_{GS}=0.6\ \Omega$ $I_D=7\text{A};$ $V_{DD}=25\text{V};$ $R_L=3.57\ \Omega$		24		ns
$t_{d(on)}$	Turn-on Delay Time			13		
t_f	Fall Time			16		
$t_{d(off)}$	Turn-off Delay Time			42		