

isc N-Channel MOSFET Transistor

14N05

• FEATURES

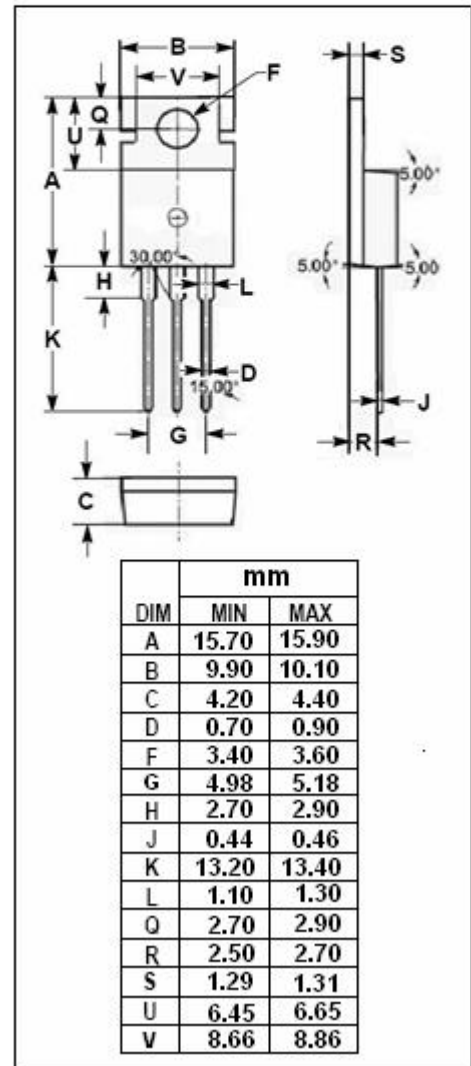
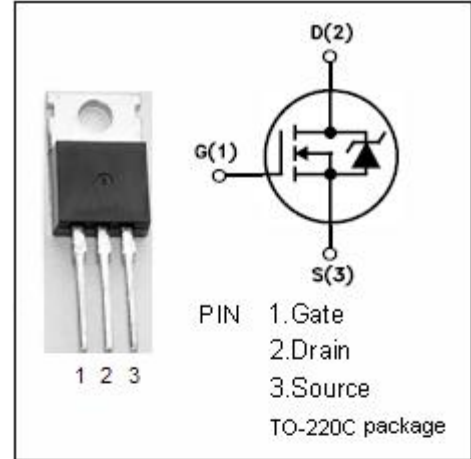
- Drain Current  $I_D = 14A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS} = 50V (Min)$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 0.1 \Omega (Max)$
- Fast Switching

• 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	$\pm 10$	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	$^\circ C$



## isc N-Channel MOSFET Transistor

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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	$\Omega$
$I_{GSS}$	Gate-Body Leakage Current	$V_{GS}=\pm 10\text{V}; V_{DS}=0$			$\pm 100$	nA
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=40\text{V}; V_{GS}=0$			1	$\mu\text{A}$
$C_{iss}$	Input Capacitance	$V_{DS}=25\text{V};$		670		pF
$C_{rss}$	Reverse Transfer capacitance	$V_{GS}=0\text{V};$		50		
$C_{oss}$	Output Capacitance	$f_T=1\text{MHz}$		185		
$t_r$	Rise Time	$V_{GS}=10\text{V};$		24		ns
$t_{d(on)}$	Turn-on Delay Time	$R_{GS}=0.6\ \Omega$		13		
$t_f$	Fall Time	$I_D=7\text{A};$		16		
$t_{d(off)}$	Turn-off Delay Time	$V_{DD}=25\text{V};$ $R_L=3.57\ \Omega$		42		