

# isc N-Channel MOSFET Transistor

## 45N05

### • FEATURES

- Drain Current  $I_D = 45A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS} = 50V(\text{Min})$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 0.04 \Omega (\text{Max})$
- Fast Switching
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### • APPLICATIONS

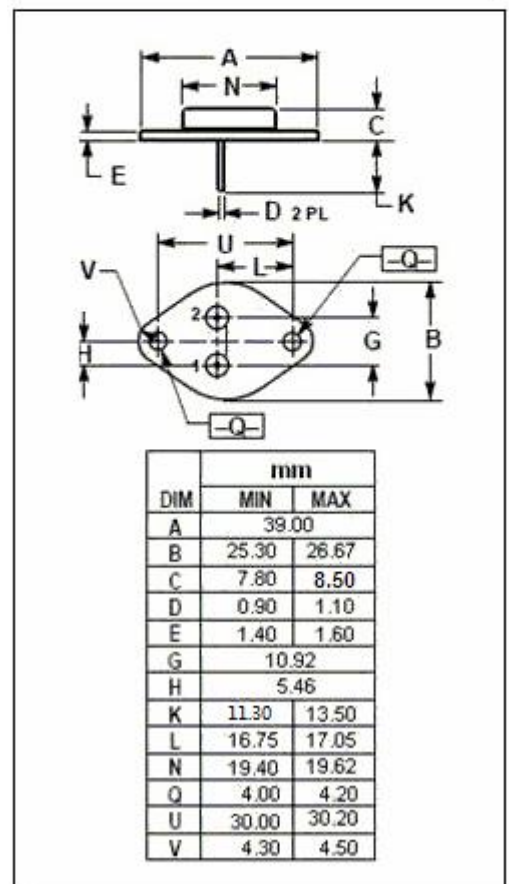
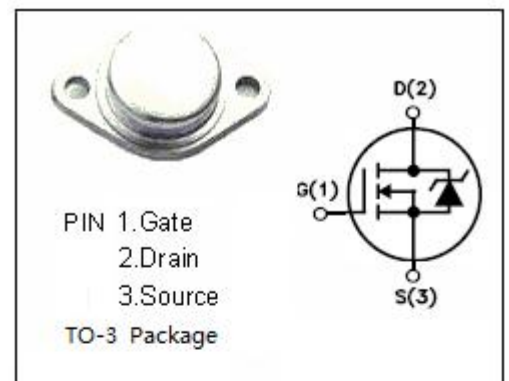
- Switching power supplies, converters, AC and DC motor controls

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage	50	V
$V_{GS}$	Gate-Source Voltage-Continuous	$\pm 30$	V
$I_D$	Drain Current-Continuous	45	A
$I_{DM}$	Drain Current-Single Plused	100	A
$P_D$	Total Dissipation @ $T_C = 25^\circ C$	150	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	0.63	$^\circ C/W$
$R_{th j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ C/W$



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## • ELECTRICAL CHARACTERISTICS

T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	MAX	UNIT
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> = 0; I <sub>D</sub> =1mA	50			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> =1mA	2.0		4.0	V
V <sub>SD</sub>	Diode Forward On-voltage	I <sub>S</sub> = 22.5A ;V <sub>GS</sub> = 0			1.4	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 22.5A			0.04	Ω
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> = ±20V;V <sub>DS</sub> = 0			±100	nA
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =40V; V <sub>GS</sub> = 0			1	μA
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =25V;			3000	pF
C <sub>rss</sub>	Reverse Transfer capacitance	V <sub>GS</sub> =0V;			750	
C <sub>oss</sub>	Output Capacitance	f <sub>r</sub> =1MHz			1800	

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