

isc N-Channel MOSFET Transistor

12N45A

• FEATURES

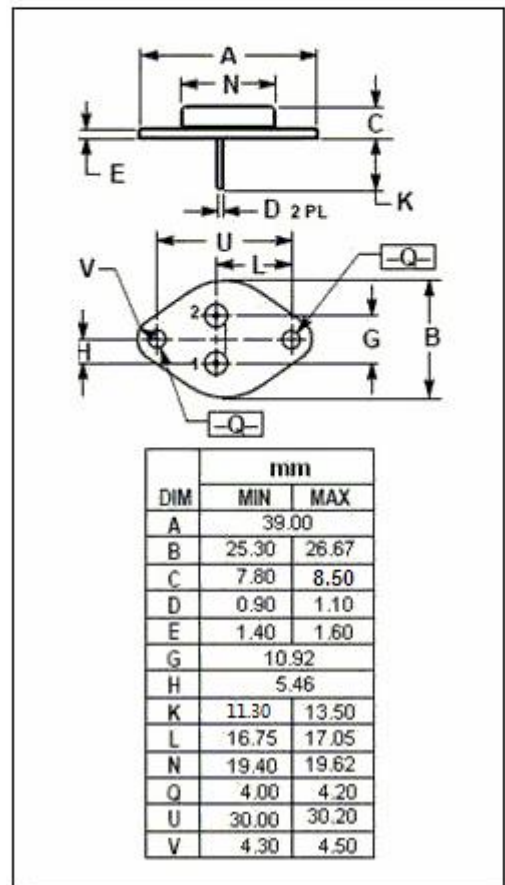
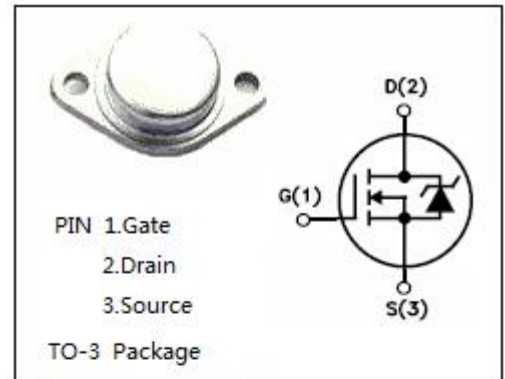
- Drain Current $I_D = 12A @ T_C = 25^\circ C$
- Drain Source Voltage-
: $V_{DSS} = 450V (Min)$
- Static Drain-Source On-Resistance
: $R_{DS(on)} = 0.4 \Omega (Max)$
- Fast Switching
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• APPLICATIONS

- Switch mode power supply
- DC-DC converters
- AC motor control

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	450	V
V_{GS}	Gate-Source Voltage-Continuous	± 30	V
I_D	Drain Current-Continuous	12	A
I_{DM}	Drain Current-Single Plused	48	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	$^\circ C$



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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	$V_{GS}=0$; $I_D=250\mu\text{A}$	450			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	$I_S=12\text{A}$; $V_{GS}=0$			1.5	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10\text{V}$; $I_D=6\text{A}$			0.4	Ω
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 20\text{V}$; $V_{DS}=0$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=360\text{V}$; $V_{GS}=0$			200	μA
C_{iss}	Input Capacitance	$V_{DS}=25\text{V}$; $V_{GS}=0\text{V}$; $f_T=1\text{MHz}$		2700		pF
C_{rss}	Reverse Transfer capacitance			80		
C_{oss}	Output Capacitance			290		
t_r	Rise Time	$V_{GS}=10\text{V}$;		25	50	ns
$t_{d(on)}$	Turn-on Delay Time	$I_D=6.0\text{A}$;		20	35	
t_f	Fall Time	$V_{DD}=225\text{V}$; $R_{GS}=5\Omega$		30	60	
$t_{d(off)}$	Turn-off Delay Time			70	100	

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