Micro Commercial Components

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MCU05N60A

N-Channel Enhancement Mode Field Effect Transistor

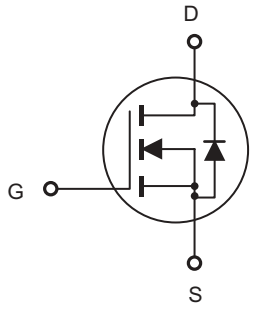
Features

- High Current Rating
- Lower Capacitance
- Halogen free available upon request by adding suffix "-HF"
- Lower $R_{dS(ON)}$
- Lower Total Gate Charge
- Tighter VSD Specifications
- Avalanche Energy Specified
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

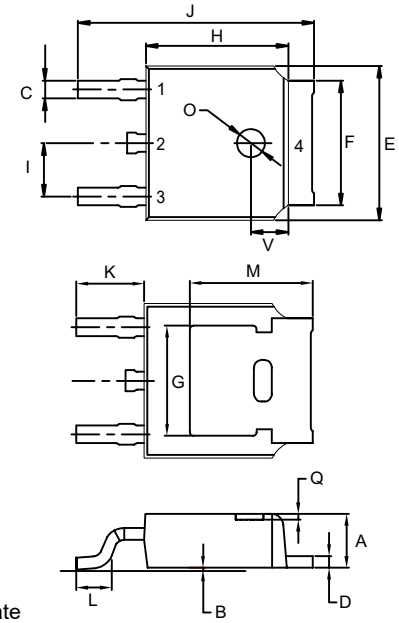
Maximum Ratings @ 25ºC Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V_{DS}	Drain-source Voltage	600	V
I_D	Drain Current-Continuous	4.5	A
E_{AS}	Single Pulsed Avalanche Energy(note1)	210	mJ
V_{GSS}	Gate-source Voltage	±30	V
P_D	Power Dissipation(note2,T_C=25°C) Maximum Power Dissipation(note3,T_C=25°C)	1.25 120	W W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	100	℃/W
T_J	Operating Junction Temperature	-55 to +150	℃
T_{STG}	Storage Temperature	-55 to +150	℃
T_L	Maximum lead temperure for soldering purposes,1/8" from case for 5 seconds	260	℃

Internal Block Diagram



DPAK



1.Gate
2&4.Drain
3.Source

DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	**0.409**	9.80	10.40	
K	0.114		2.90		
L	0.055	0.067	1.40	1.70	
M	0.211		5.35		
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.063		1.60		

Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	600			V
Drain-source diode forward voltage(note4)	V_{SD}	V_{GS} = 0V, I_S =4.5A			1.4	
Zero gate voltage drain current	I_{DSS}	V_{DS} =600V, V_{GS} =0V			1	μA
Gate-body leakage current, forward(note4)	I_{GSSF}	V_{DS} =0V, V_{GS} =30V			100	nA
Gate-body leakage current, reverse(note4)	I_{GSSR}	V_{DS} =0V, V_{GS} =-30V			-100	
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2.0		4.0	V
Static drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =2.25A			2.5	Ω
Forward transconductance(note4)	g_{fs}	V_{DS} =40V, I_D =2.25A	2.9			S
Input capacitance	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz			670	pF
Output capacitance	C_{oss}				72	
Reverse transfer capacitance	C_{rss}				8.5	
Turn-on delay time (note4)	$t_{d(on)}$	V_{DD}=300V, R_G=25Ω, I_D =4.5A			30	ns
Turn-on rise time (note4)	t_r				90	
Turn-off delay time (note4)	$t_{d(off)}$				85	
Turn-off fall time (note4)	t_f				100	

Notes :

1. E_{AS} Condition:L=20mH, I_{AS}=4.5 A, V_{DD}=50V, R_G=25Ω, T_J=25℃.
2. This test is performed with no heat sink at Ta=25°C
3. This test is performed with infinite heat sink at Tc=25°C
4. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.

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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel:2.5Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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