

M·C·C·

Micro Commercial Components



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MCU04N60

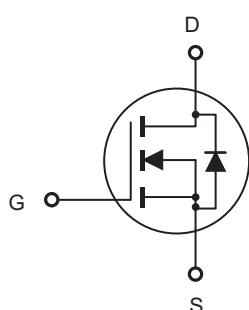
Features

- 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 @ 25°C Unless Otherwise Specified

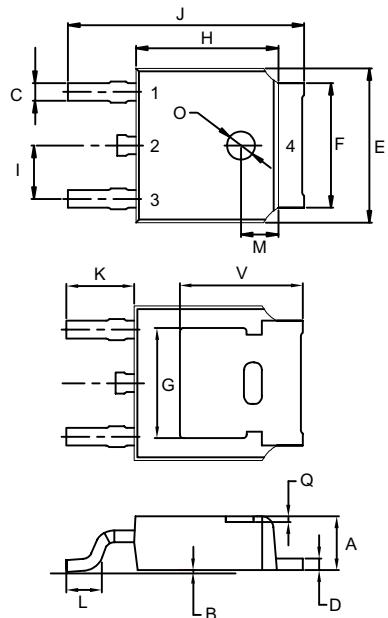
Symbol	Parameter	Rating	Unit
V_{DS}	Drain-source Voltage	600	V
I_D	Drain Current-Continuous	4.0	A
I_S	Continuous Drain-Source Diode Forward Current	4.0	A
V_{GSS}	Gate-source Voltage	± 30	V
E_{AS}	Single Pulsed Avalanche Energy(note1)	260	mJ
$R_{J\text{A}}$	Thermal Resistance Junction to Ambient	100	$^{\circ}\text{C}/\text{W}$
T_J	Operating Junction Temperature	-55 to +150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-55 to +150	$^{\circ}\text{C}$
T_L	Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds	260	$^{\circ}\text{C}$

Internal Block Diagram



N-Channel Enhancement Mode Field Effect Transistor

DPAK



- 1.GATE
- 2.DRAIN
- 3.SOURCE

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
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		0.063		1.60	
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V		0.211		5.35	

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Electrical characteristics (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	600			V
Drain-source diode forward voltage(note2)	V _{SD}	V _{GS} = 0V, I _S = 4.0A			1.5	
Zero gate voltage drain current	I _{DSS}	V _{DS} = 600V, V _{GS} = 0V			25	μA
Gate-body leakage current, forward(note2)	I _{GSSF}	V _{DS} = 0V, V _{GS} = 30V			100	nA
Gate-body leakage current, reverse(note2)	I _{GSSR}	V _{DS} = 0V, V _{GS} = -30V			-100	
On characteristics (note2)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.0		4.0	V
Static drain-source on-resistance	R _{DSS(on)}	V _{GS} = 10V, I _D = 2.0A		2.0	3.0	Ω
Forward transconductance	g _{fs}	V _{DS} = 50V, I _D = 2A	2.5			S
Dynamic characteristics (note 3)						
Input capacitance	C _{iss}	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz		540	760	pF
Output capacitance	C _{oss}			125	180	
Reverse transfer capacitance	C _{rss}			8.0	20	
Switching characteristics						
Total gate charge	Q _g	V _{DS} = 480V, V _{GS} = 10V, I _D = 4.0A		5.0	10	nC
Gate-source charge	Q _{gs}			2.7		
Gate-drain charge	Q _{gd}			2.0		
Turn-on delay time (note3)	t _{d(on)}	V _{DD} = 300V, V _{GS} = 10V, R _G = 9.1Ω, I _D = 4.0A		12	20	ns
Turn-on rise time (note3)	t _r			7.0	10	
Turn-off delay time (note3)	t _{d(off)}			19	40	
Turn-off fall time (note3)	t _f			10	20	

Notes :

1. L=30mH, I_L=4 A, V_{DD}=100V, V_{GS}=10V, R_G=25Ω, Starting T_J=25°C.
2. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
3. These parameters have no way to verify.

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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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