



Micro Commercial Components



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MCU60N08

N-Channel Enhancement Mode Field Effect Transistor

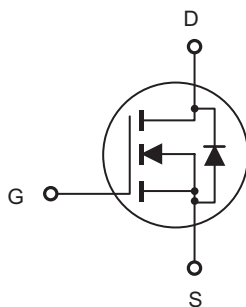
Features

- Excellent package for good heat dissipation
- High density cell design for ultra low R_{ds(on)}
- Halogen free available upon request by adding suffix "-HF"
- Excellent package for good heat dissipation
- Special process technology for high ESD capability
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

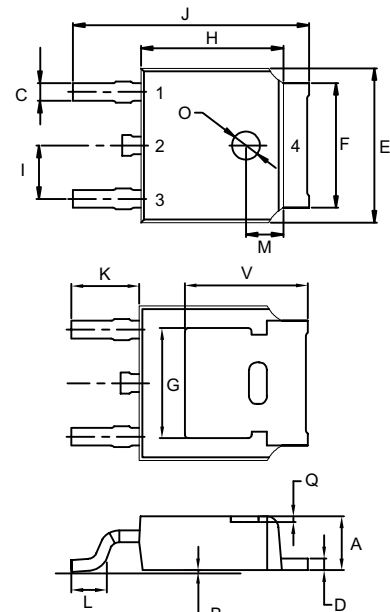
Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V _{DS}	Drain-source Voltage	80	V
I _D	Drain Current-Continuous	60	A
E _{AS}	Single Pulsed Avalanche Energy(note1)	300	mJ
V _{GS}	Gate-source Voltage	±20	V
I _{DM}	Pulsed Drain Current	240	A
R _{θJA}	Thermal Resistance Junction to Ambient	100	°C/W
T _J	Operating Junction Temperature	-55 to +150	°C
T _{STG}	Storage Temperature	-55 to +150	°C

Internal Block Diagram



DPAK



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

DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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	
	0.211		5.35		

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	80			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 80V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
On characteristics (note2)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2	3	4	V
Static drain-source on-state resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 30A		7.0	8.5	mΩ

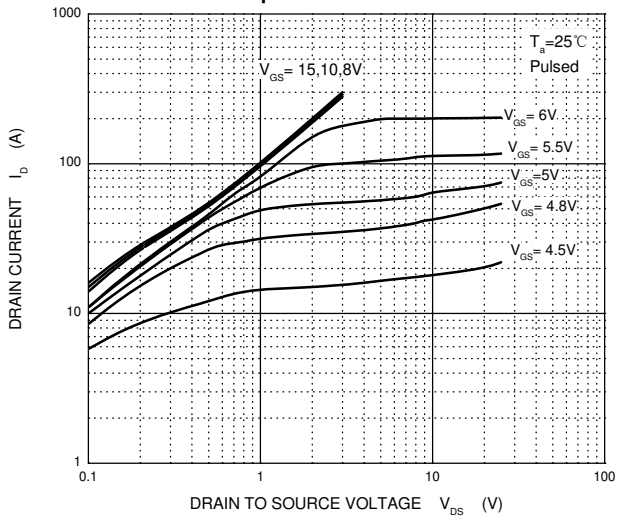
Dynamic characteristics (note 3)						
Input capacitance	C _{iss}	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz		4400		pF
Output capacitance	C _{oss}			340		
Reverse transfer capacitance	C _{rss}			260		
Switching characteristics (note 3)						
Total gate charge	Q _g	V _{DS} =30V, V _{GS} =10V, I _D =30A		100		nC
Gate-source charge	Q _{gs}			20		
Gate-drain charge	Q _{gd}			30		
Turn-on delay time	t _{d(on)}	V _{DD} =30V, V _{GS} =10V, R _G =2.5Ω, I _D =2A, R _L =15Ω		18		ns
Turn-on rise time	t _r			12		
Turn-off delay time	t _{d(off)}			56		
Turn-off fall time	t _f			15		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note2)	V _{SD}	V _{GS} = 0V, I _S = 30A			1.2	V
Continuous drain-source diode forward current	I _S				60	A
Pulsed drain-source diode forward current	I _{SM}				240	A

Notes:

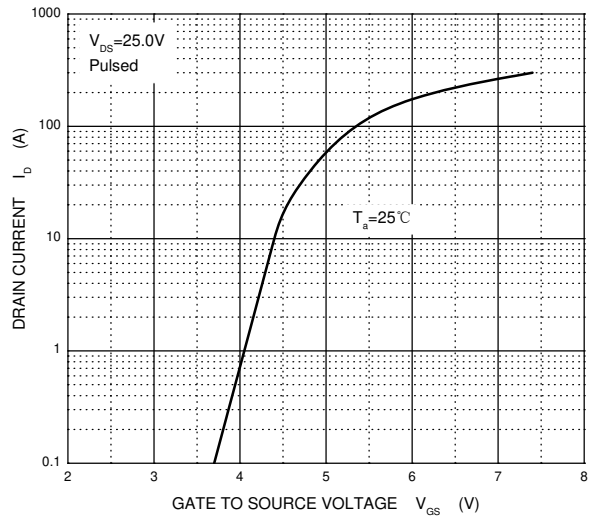
1. L=0.5mH, V_{DD}=40V, V_G=10V, R_G=25Ω, Starting T_J=25°C.
2. Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
3. Guaranteed by design, not subject to production.

Typical Characteristics

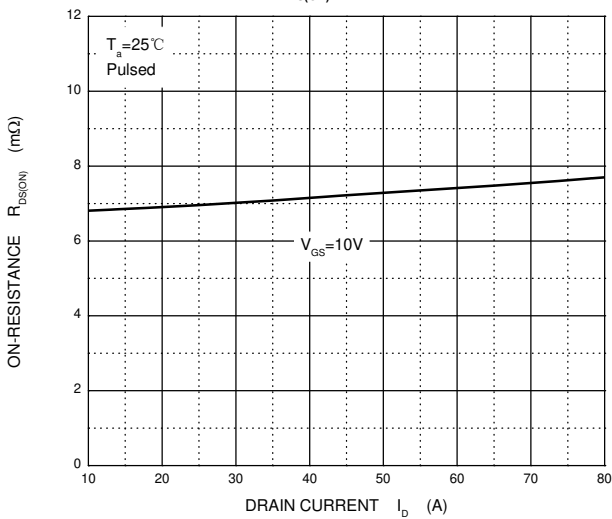
Output Characteristics



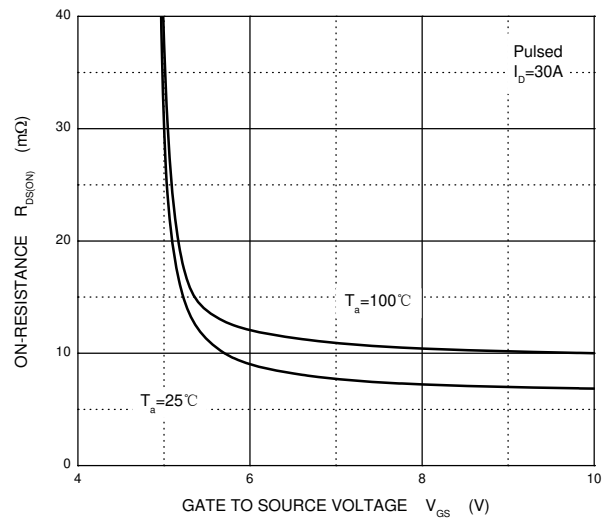
Transfer Characteristics



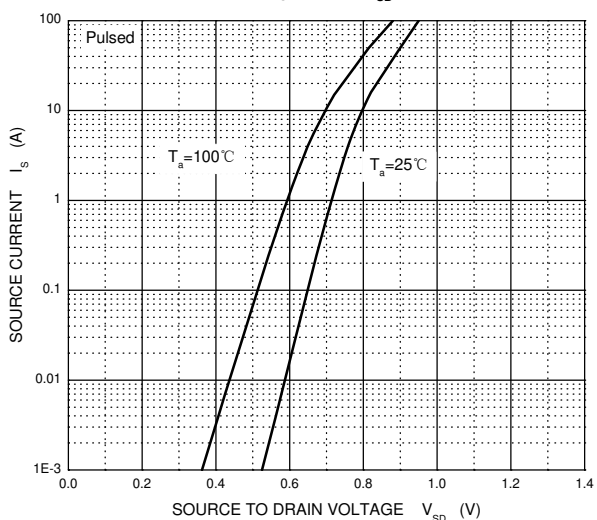
$R_{DS(ON)}$ — I_D



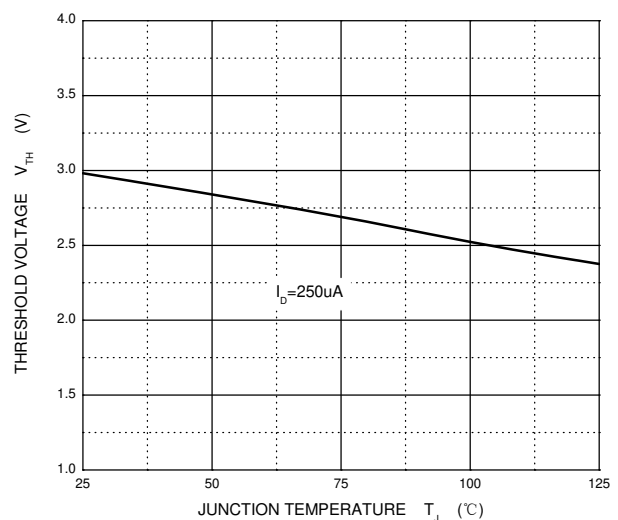
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage





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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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