



Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

MCU20N06A

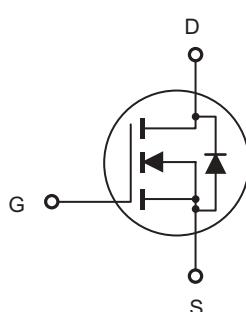
Features

- High density cell design for ultra low $R_{ds(on)}$
- Fully characterized avalanche voltage and current
- 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

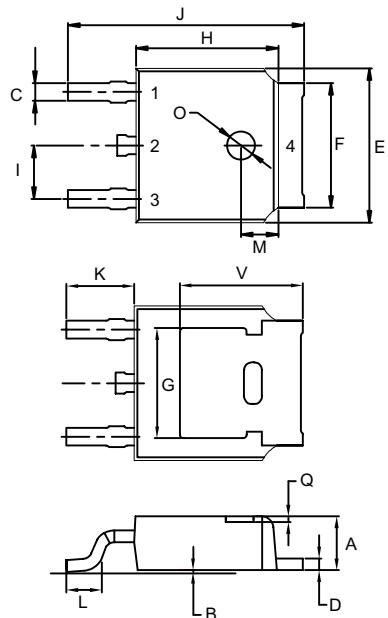
Symbol	Parameter	Rating	Unit
V_{DS}	Drain-source Voltage	60	V
I_D	Drain Current-Continuous	20	A
E_{AS}	Single Pulsed Avalanche Energy(note1)	72	mJ
V_{GS}	Gate-source Voltage	± 20	V
I_{DM}	Pulsed Drain Current	60	A
R_{JA}	Thermal Resistance Junction to Ambient	100	°C/W
T_J	Operating Junction Temperature	-55 to +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C
T_L	Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds	260	°C

Internal Block Diagram



N-Channel Enhancement Mode Field Effect Transistor

DPAK



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	
		0.211	5.35		

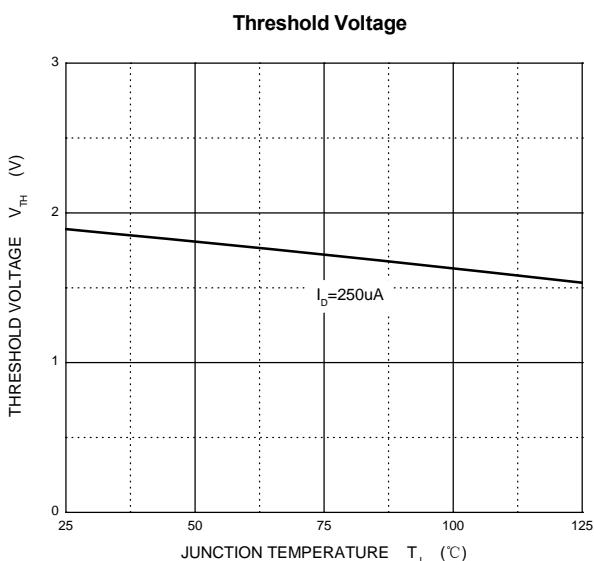
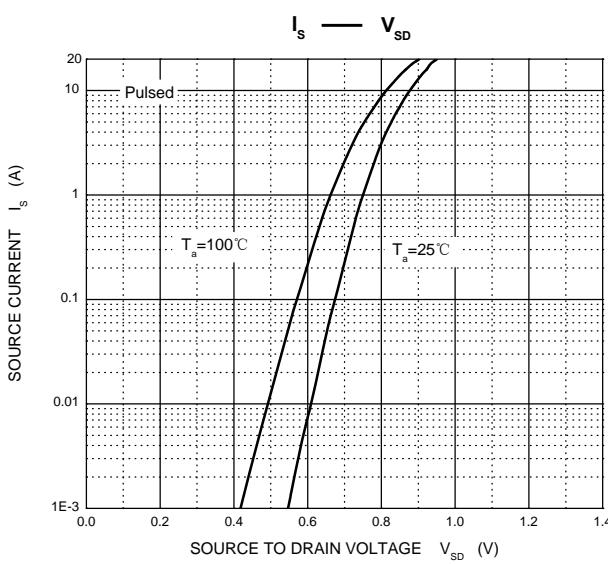
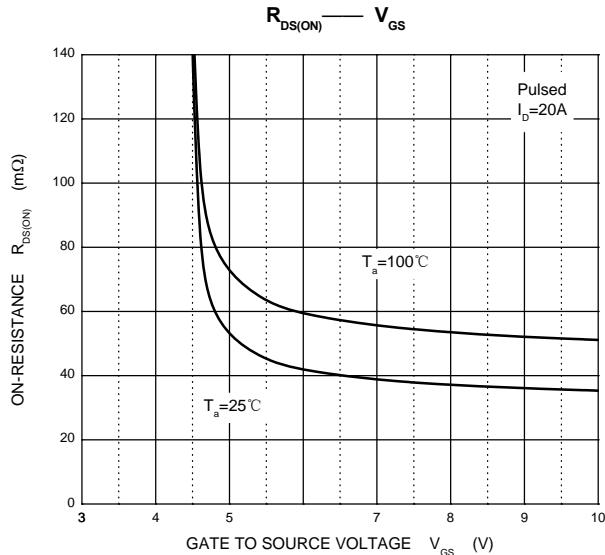
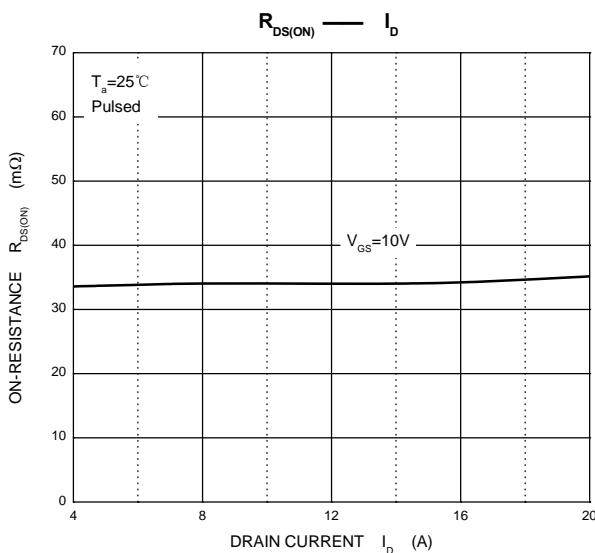
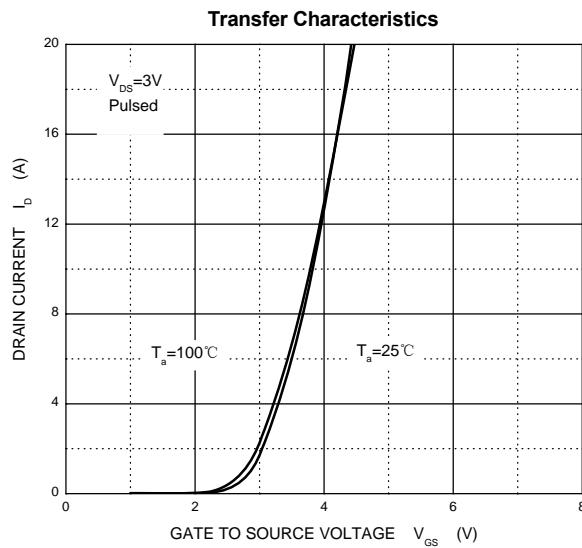
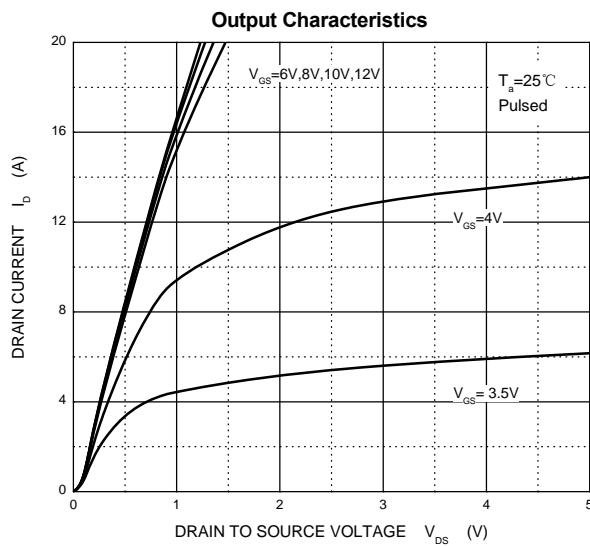
Electrical characteristics (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250µA	60			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =60V, 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	1.0	2.0	3.0	V
Static drain-source on-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 20A		0.037	0.045	Ω
Dynamic characteristics (note 3)						
Input capacitance	C _{iss}	V _{DS} = 30V, V _{GS} = 0V, f = 1MHz		500		pF
Output capacitance	C _{oss}			60		
Reverse transfer capacitance	C _{rss}			25		
Switching characteristics (note 3)						
Turn-on delay time	t _{d(on)}	V _{DD} = 30V, R _G = 3Ω, I _D = 2A, V _{GS} = 10V		5		ns
Turn-on rise time	t _r			2.6		
Turn-off delay time	t _{d(off)}			16.1		
Turn-off fall time	t _f			2.3		
Total Gate Charge	Q _g	V _{DS} = 48V, V _{GS} = 10V, I _D = 15A		12		nC
Gate-Source Charge	Q _{gs}			4.1		nC
Gate-Drain Charge	Q _{gd}			4.5		nC
Drain-Source Diode Characteristics						
Drain-source diode forward voltage (note2)	V _{SD}	V _{GS} = 0V, I _S = 20A			1.2	V
Continuous drain-source diode forward current	I _S				20	A
Pulsed drain-source diode forward current	I _{SM}				60	A

Notes :

1. T_J=25°C, V_{DD}=30V, L=0.5mH, 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





Micro Commercial Components

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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