



Micro Commercial Components



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MCM1206

P-Channel
Power MOSFET

Features

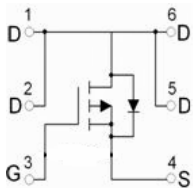
- Advanced trench MOSFET process technology
Ultra low on-resistance with low gate charge
Halogen free available upon request by adding suffix "-HF"
Epoxy meets UL 94 V-0 flammability rating
Moisture Sensitivity Level 1
Marking:1206

Maximum Ratings @ 25°C Unless Otherwise Specified

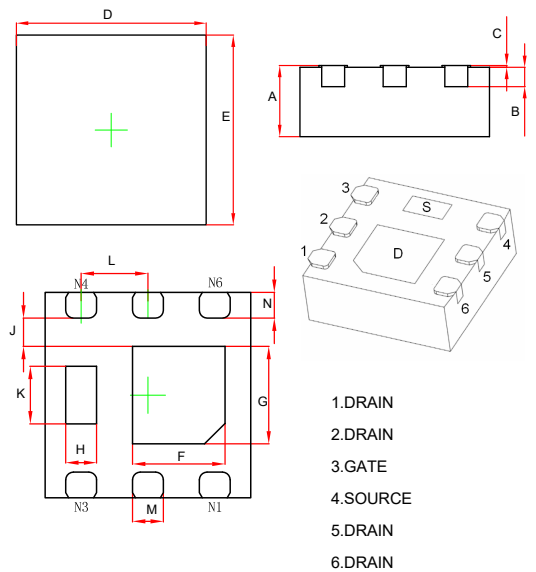
Table with 4 columns: Symbol, Parameter, Rating, Unit. Rows include V_DS, I_D, I_DM, V_GS, R_thetaJA, T_J, T_STG.

(1).Repetitive rating:Pluse width limited by junction temperature

Equivalent Circuit



DFN2020-6J



Dimensions table with columns for DIM, INCHES (MIN, MAX), MM (MIN, MAX), and NOTE. Rows A through N.

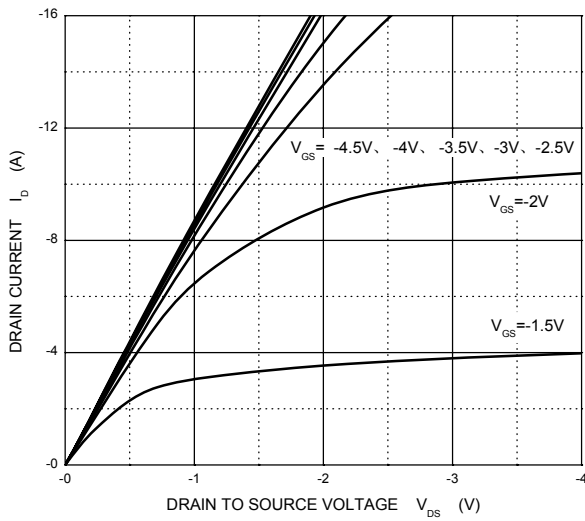
ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-12			V
Gate-source threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.5		-0.9	
Gate-source leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} = -8V, V _{GS} = 0V			-1	μA
Drain-source on-state resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -3.5A		30	45	mΩ
		V _{GS} = -2.5V, I _D = -3A		40	60	
		V _{GS} = -1.8V, I _D = -2.0A		60	90	
Forward transconductance ^a	g _{fs}	V _{DS} = -5V, I _D = -4.1A	6			S
Dynamic						
Input capacitance ^{b,c}	C _{iss}	V _{DS} = -4V, V _{GS} = 0V, f = 1MHz		740		pF
Output capacitance ^{b,c}	C _{oss}			290		
Reverse transfer capacitance ^{b,c}	C _{rss}			190		
Total gate charge ^b	Q _g	V _{DS} = -4V, V _{GS} = -4.5V, I _D = -4.1A		7.8		nC
		V _{DS} = -4V, V _{GS} = -2.5V, I _D = -4.1A		4.5		
Gate-source charge ^b	Q _{gs}			1.2		
Gate-drain charge ^b	Q _{gd}			1.6		
Gate resistance ^{b,c}	R _g	f = 1MHz	1.4	7	14	Ω
Turn-on delay time ^{b,c}	t _{d(on)}	V _{DD} = -4V, R _L = 1.2Ω, I _D ≈ -3.3A, V _{GEN} = -4.5V, R _g = 1Ω		13	2	ns
Rise time ^{b,c}	t _r			35	5	
Turn-off Delay time ^{b,c}	t _{d(off)}			32	4	
Fall time ^{b,c}	t _f			10	2	
Turn-on delay time ^{b,c}	t _{d(on)}	V _{DD} = -4V, R _L = 1.2Ω, I _D ≈ -3.3A, V _{GEN} = -8V, R _g = 1Ω		5	10	
Rise time ^{b,c}	t _r			11	1	
Turn-off delay time ^{b,c}	t _{d(off)}			22	3	
Fall time ^{b,c}	t _f			16	2	
Drain-source body diode characteristics						
Continuous source-drain diode current	I _S				-6	A
Pulse diode forward current ^a	I _{SM}				-20	
Body diode voltage	V _{SD}	I _F = -3.3A			-1.2	V

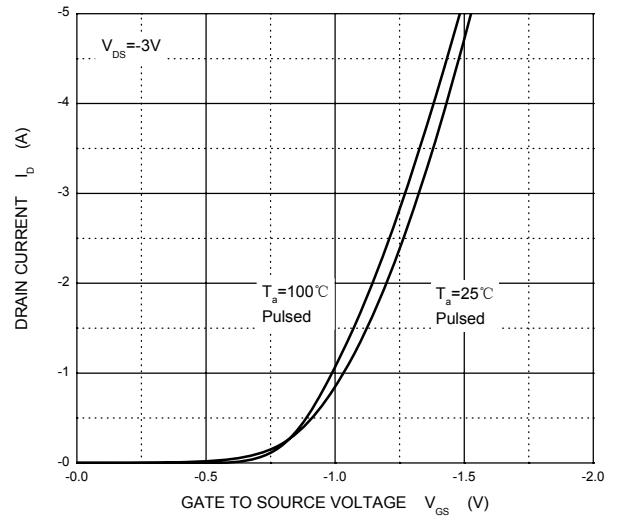
Note :

- a. Pulse Test ; Pulse Width ≤300μs, Duty Cycle ≤2%.
- b. Guaranteed by design, not subject to production testing.
- c. These parameters have no way to verify.

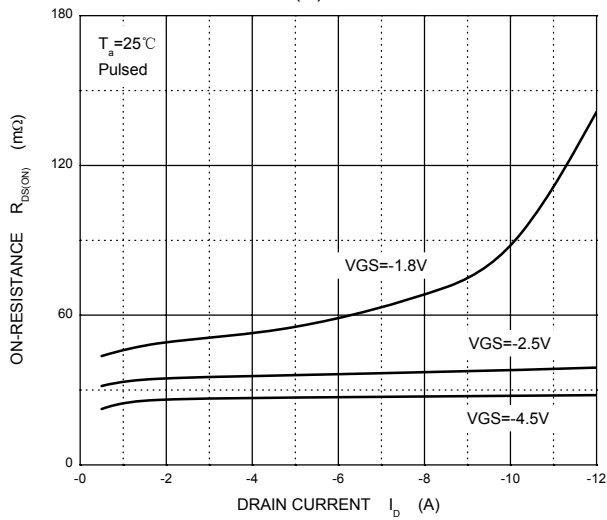
Output Characteristics



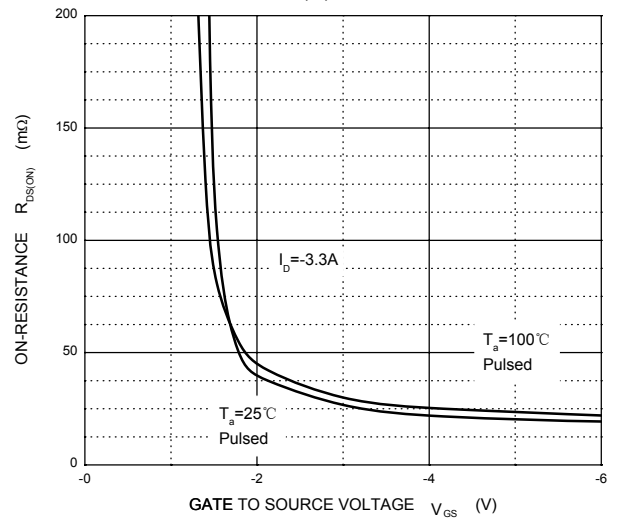
Transfer Characteristics



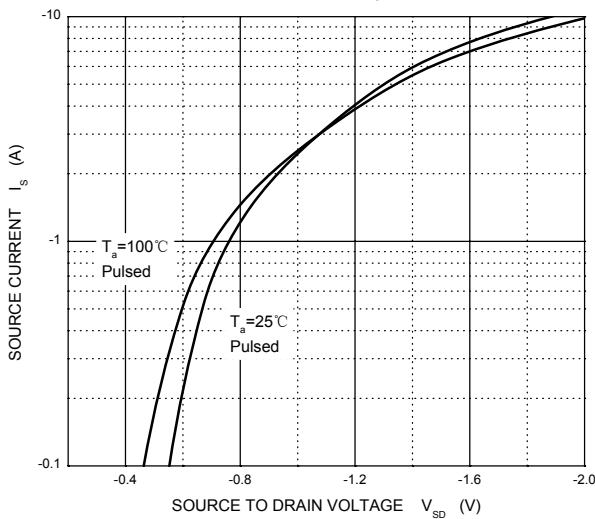
$R_{DS(ON)}$ — I_D



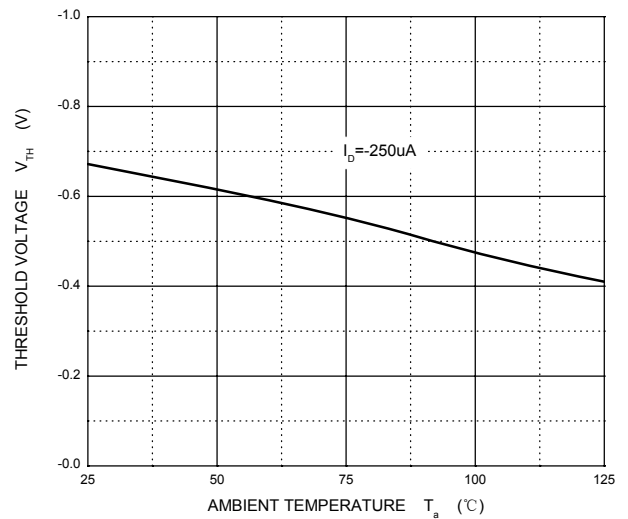
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage





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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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

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