



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





Micro Commercial Components



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

# MCM1208

## Features

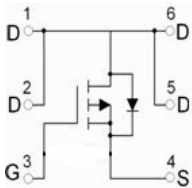
- Advanced trench MOSFET process technology
- Ultra low on-resistance with low gate charge
- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking:1208

## Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
V <sub>DS</sub>	Drain-source Voltage	-12	V
I <sub>D</sub>	Drain Current-Continuous	-8	A
I <sub>DM</sub>	Pulsed Drain Current (note1)	-28	A
V <sub>GS</sub>	Gate-source Voltage	± 8	V
R <sub>θJA</sub>	Thermal Resistance Junction to Ambient(note1)	357	°C/W
T <sub>J</sub>	Operating Junction Temperature	-55 to +150	°C
T <sub>STG</sub>	Storage Temperature	-55 to +150	°C

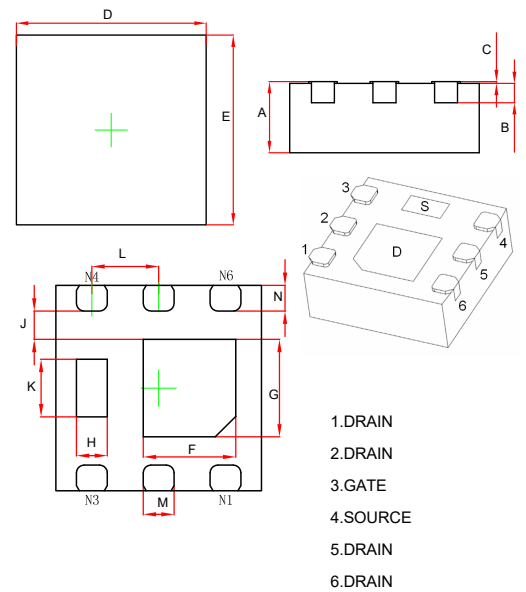
(1).Repetitive rating:Pluse width limited by junction temperature

## Equivalent Circuit



## P-Channel Power MOSFET

## DFN2020-6J



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.028	.032	0.700	0.800	
B	0.008REF.		0.203REF.		
C	0.000	0.002	0.000	0.050	
D	0.076	0.082	1.924	2.076	
E	0.076	0.082	1.924	2.076	
F	0.031	0.039	0.800	1.000	
G	0.033	0.041	0.850	1.050	
H	0.008	0.016	0.200	0.400	
J	0.008	---	0.200	---	
K	0.018	0.026	0.460	0.660	
L	0.026TYP.		0.650TYP.		
M	0.010	0.014	0.250	0.350	
N	0.007	0.013	0.174	0.326	

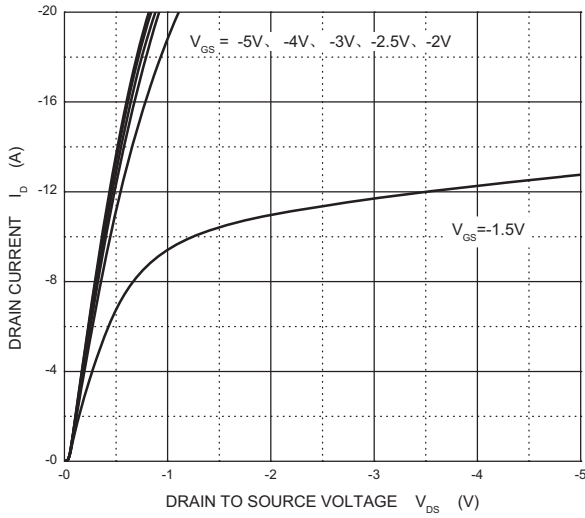
**ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-12			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -12V, V <sub>GS</sub> = 0V			-1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±8V, V <sub>DS</sub> = 0V			±0.1	uA
Gate threshold voltage (note 1)	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.4		-1	V
Drain-source on-resistance (note 1)	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -5A			28	mΩ
		V <sub>GS</sub> = -3.7V, I <sub>D</sub> = -4.6A			32	
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -4.3A			40	
		V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -1A			63	
		V <sub>GS</sub> = -1.5V, I <sub>D</sub> = -0.5A			150	
Forward tranconductance (note 1)	g <sub>FS</sub>	V <sub>DS</sub> = -5V, I <sub>D</sub> = -5A		18		S
<b>Dynamic characteristics (note 2)</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -6V, V <sub>GS</sub> = 0V, f = 1MHz		1275		pF
Output Capacitance	C <sub>oss</sub>			255		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			236		pF
Gate resistance	R <sub>g</sub>	f = 1MHz	1.9		19	Ω
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -6V, V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -5A		14	21	nC
Gate-Source Charge	Q <sub>gs</sub>			2.3		nC
Gate-Drain Charge	Q <sub>gd</sub>			3.6		nC
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> = -6V, V <sub>GEN</sub> = -4.5V, I <sub>D</sub> = -4A R <sub>L</sub> = 6Ω, R <sub>GEN</sub> = 1Ω		26	40	ns
Turn-on rise time	t <sub>r</sub>			24	40	ns
Turn-off delay time	t <sub>d(off)</sub>			45	70	ns
Turn-off fall time	t <sub>f</sub>			20	35	ns
<b>Source-Drain Diode characteristics</b>						
Diode forward current	I <sub>S</sub>				-8	A
Diode pulsed forward current	I <sub>SM</sub>				-28	A
Diode Forward voltage (note 1)	V <sub>DS</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = -4A			-1.2	V
Diode reverse recovery time (note 2)	t <sub>rr</sub>	I <sub>F</sub> = -4A, dI/dt = 100A/μs		24	48	ns
Diode reverse recovery charge (note 2)	Q <sub>rr</sub>			8	16	nC

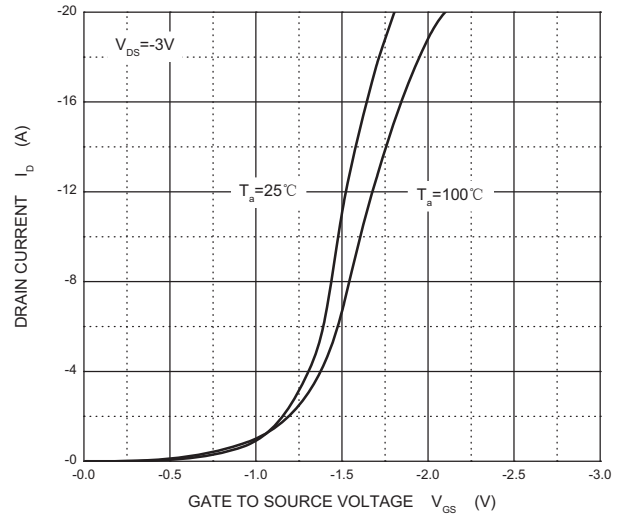
**Notes :** 1. Pulse test; pulse width ≤ 300μs, duty cycles ≤ 2%.

Typical Characteristics

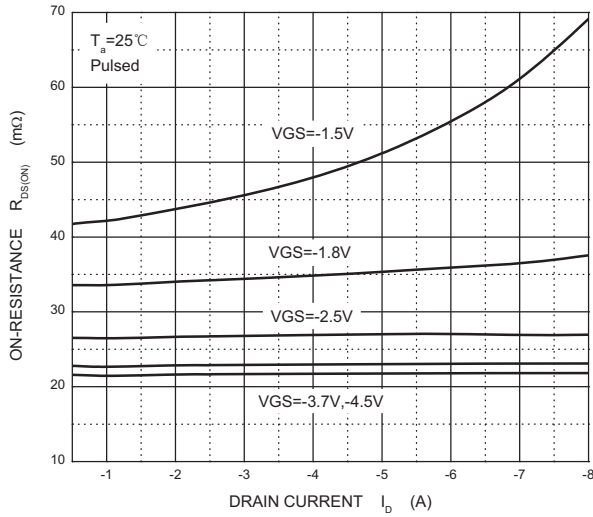
Output Characteristics



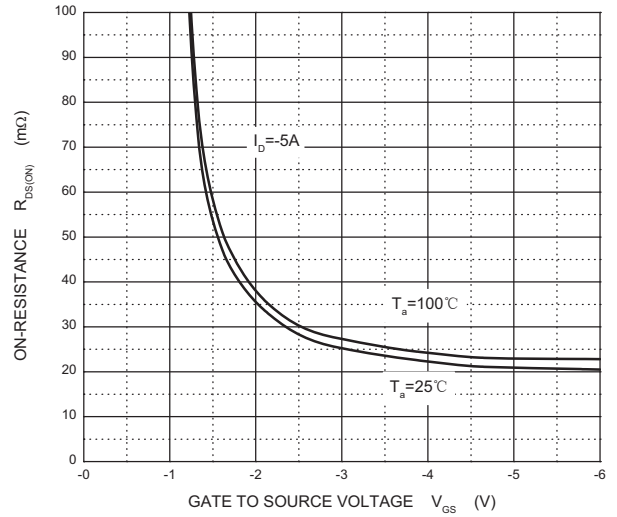
Transfer Characteristics



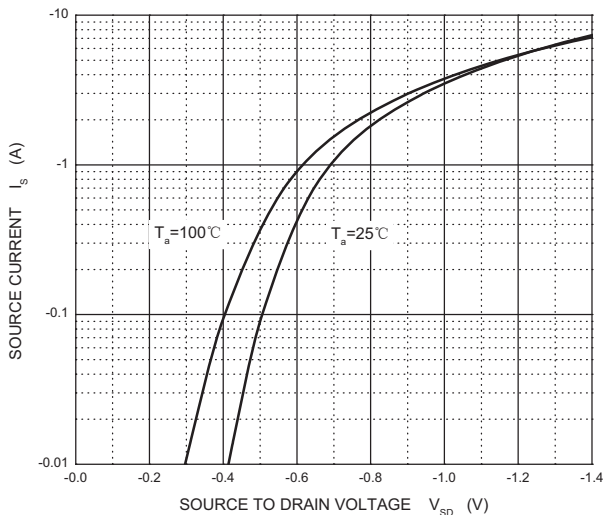
$R_{DS(ON)}$  —  $I_D$



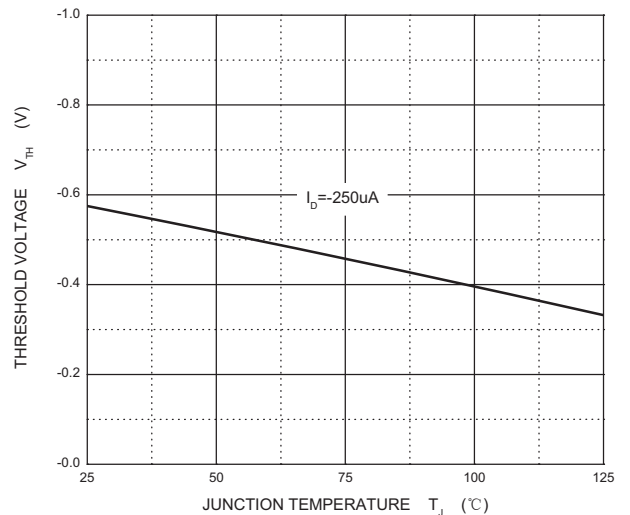
$R_{DS(ON)}$  —  $V_{GS}$



$I_S$  —  $V_{SD}$



Threshold Voltage





Micro Commercial Components

## Ordering Information :

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

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

### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp .** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp .** and all the companies whose products are represented on our website, harmless against all damages.

### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

[www.mccsemi.com](http://www.mccsemi.com)