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!

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Micro Commercial Components

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MCQ4459

P-Channel Enhancement Mode Field Effect Transistor

Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/Rohs Compliant ("P"Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking:Q4459

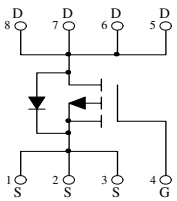
Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	P-Channel	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (note1)	I_D	-6.5	A
Pulsed Drain Current	I_{DM}	-26	A
Single Pulsed Avalanche Energy (note1)	E_{AS}	14	mJ
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	89	℃/W
Operating Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~+150	

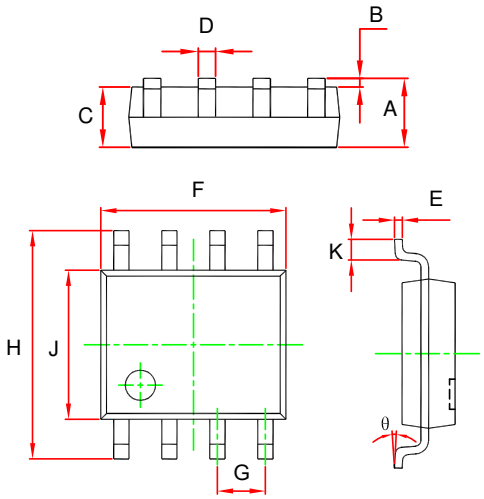
Notes :

(1).E_{AS} condition: V_{DD}=-50V,L=0.1mH, R_G=25Ω, Starting T_J = 25°C

Equivalent Circuit



SOP-8



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.350	1.750	
B	0.004	0.010	0.100	0.250	
C	0.053	0.061	1.350	1.550	
D	0.013	0.020	0.330	0.510	
E	0.007	0.010	0.170	0.250	
F	0.189	0.197	4.800	5.000	
G	0.050 (BSC)		1.270 (BSC)		
H	0.228	0.244	5.800	6.200	
J	0.150	0.157	3.800	4.000	
K	0.016	0.050	0.400	1.270	
θ	0°	8°	0°	8°	

MOSFET ELECTRICAL CHARACTERISTICS

ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

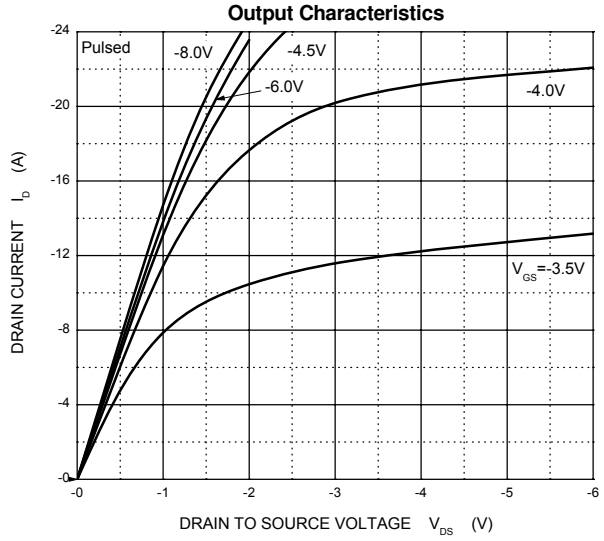
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-30V, V_{GS} =0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
On characteristics (note1)						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1.4	-2.0	-2.4	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-6.5A		26	46	mΩ
		V_{GS} =-4.5V, I_D =-5A		46	72	mΩ
Forward transconductance	g_{FS}	V_{DS} =-5V, I_D =-6.5A	6			S
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V, f =1MHz	415		625	pF
Output capacitance	C_{oss}		70		130	
Reverse transfer capacitance	C_{rss}		40		90	
Switching characteristics (note 2)						
Total gate charge	Q_g	V_{DS}=-15V, V_{GS}=-10V, I_D=-6.5A	7.4		11	nC
Gate-source charge	Q_{gs}		1.3		1.9	
Gate-drain charge	Q_{gd}		1.3		3.1	
Turn-on delay time	$t_{d(on)}$	V_{DD}=-15V,I_D=-1A, V_{GS}=-10V,R_G=3Ω, R_L=2.5Ω		7.5		ns
Turn-on rise time	t_r			5.5		
Turn-off delay time	$t_{d(off)}$			19		
Turn-off fall time	t_f			7		
Gate Resistance	R_g	f =1MHz, V_{DS}=0V, V_{GS}=0V,	3.5	7.5	11.5	Ω
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V_{SD}	V_{GS} =0V, I_S=-1A			-1	V
Continuous drain-source diode forward current	I_S				-6.5	A
Pulsed drain-source diode forward current	I_{SM}				-26	A

Notes:

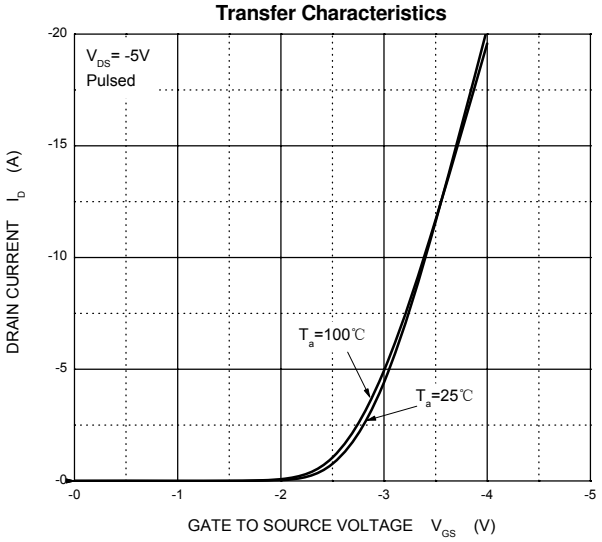
1. Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
2. Guaranteed by design, not subject to production.

Typical Characteristics

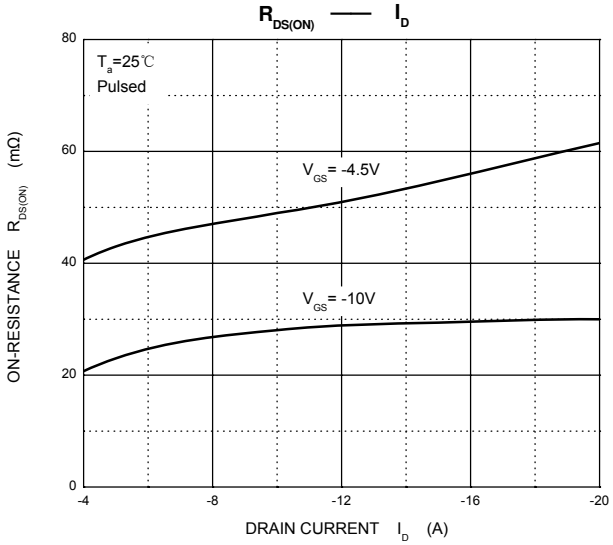
Output Characteristics



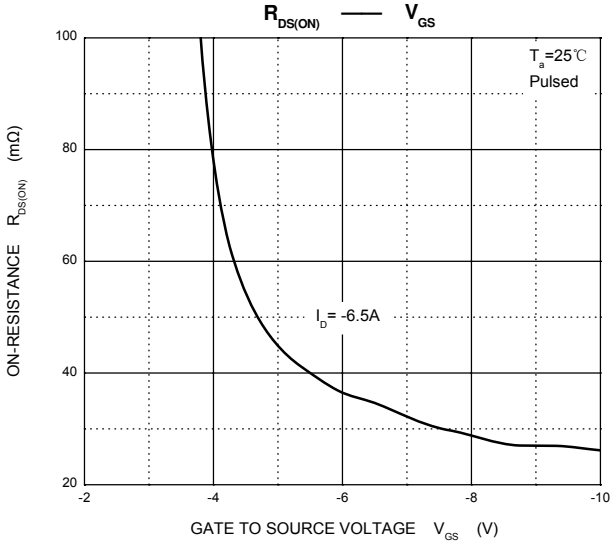
Transfer Characteristics



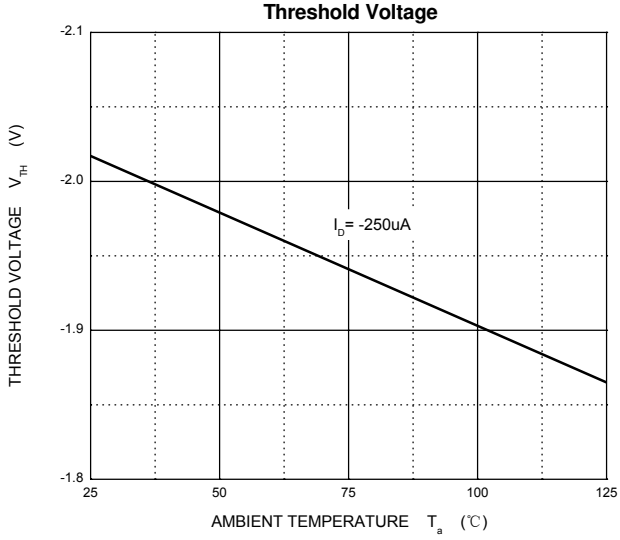
$R_{DS(ON)}$ — I_D



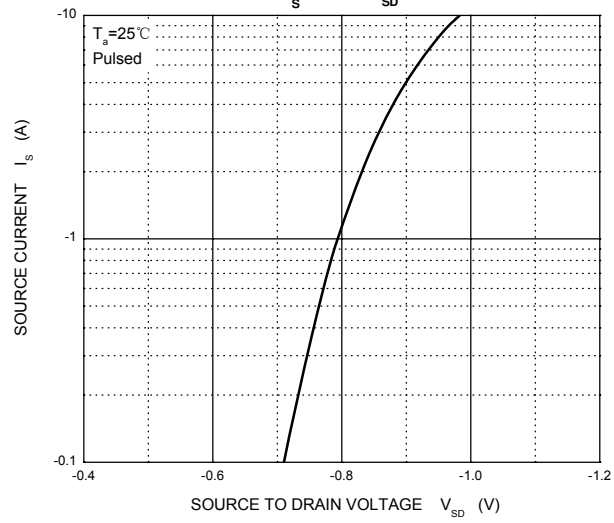
$R_{DS(ON)}$ — V_{GS}



Threshold Voltage



I_S — V_{SD}



Micro Commercial Components

Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel:4Kpcs/Reel

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