



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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# MCQ4410

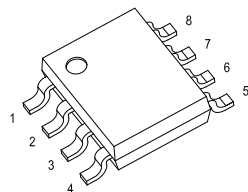
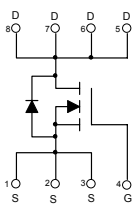
## Features

- Advanced trench MOSFET process technology
- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking:Q4410

## Maximum Ratings @ 25°C Unless Otherwise Specified

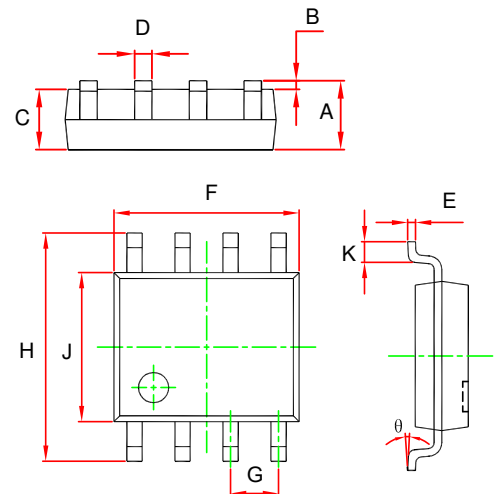
Symbol	Parameter	Rating	Unit
$V_{DS}$	Drain-source Voltage	30	V
$I_D$	Drain Current-Continuous	7.5	A
$I_{DM}$	Pulsed Drain Current	50	A
$V_{GS}$	Gate-source Voltage	$\pm 12$	V
$E_{AS}$	Single Pulsed Avalanche Energy <sup>(1)</sup>	72	mJ
$P_D$	Power Dissipation	1.4	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	89	$^{\circ}C/W$
$T_J$	Operating Junction Temperature	-55 to +150	$^{\circ}C$
$T_{STG}$	Storage Temperature	-55 to +150	$^{\circ}C$

(1). $E_{AS}$  condition:  $V_{DD}=-50V, L=0.5mH, R_G=25\Omega$ , Starting  $T_J = 25^{\circ}C$



## N-Channel Power MOSFET

## SOP-8



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	
$\theta$	0 $^{\circ}$	8 $^{\circ}$	0 $^{\circ}$	8 $^{\circ}$	

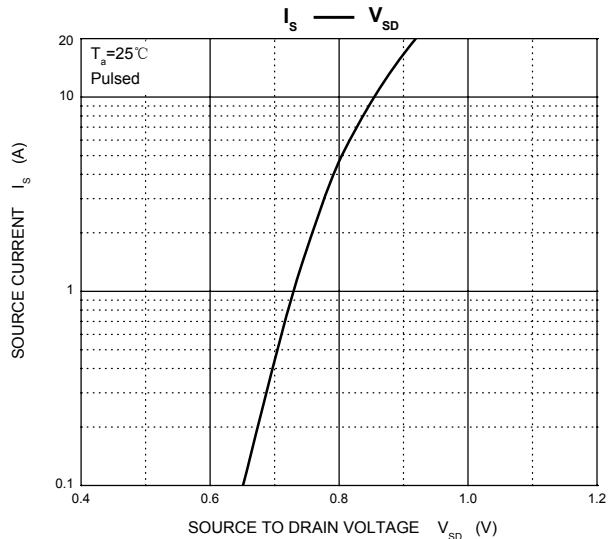
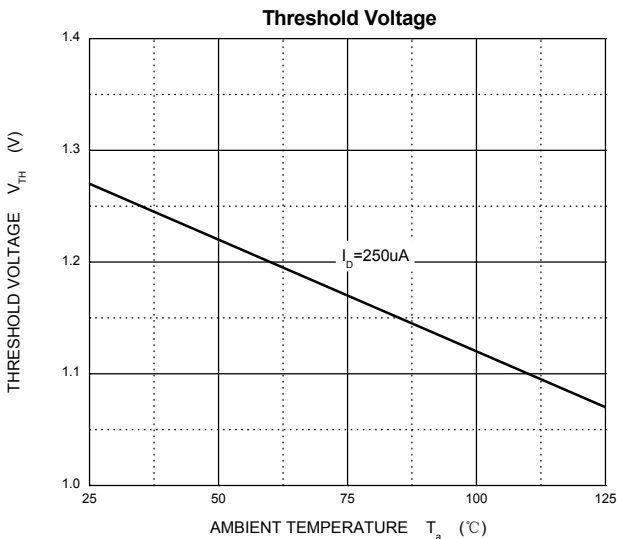
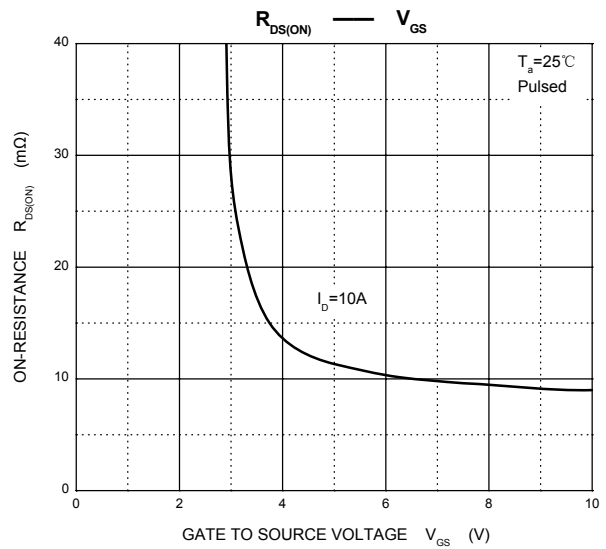
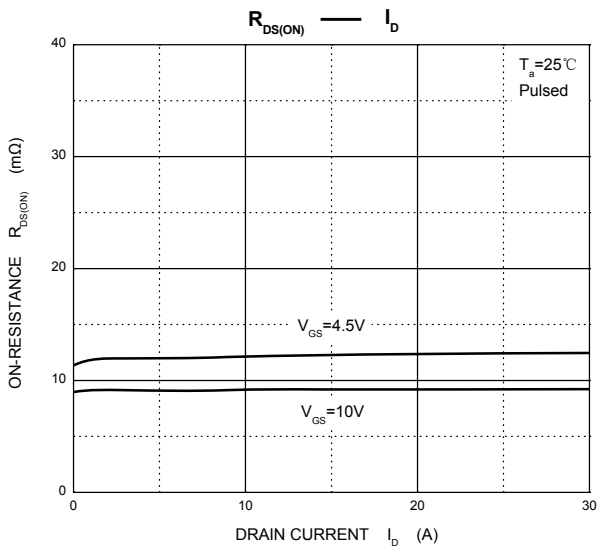
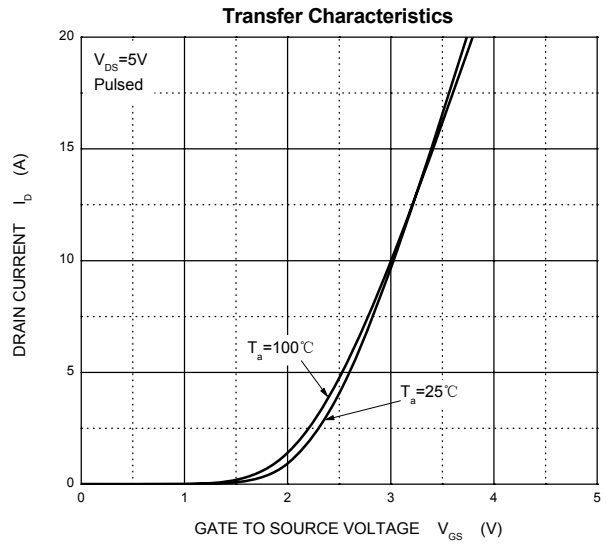
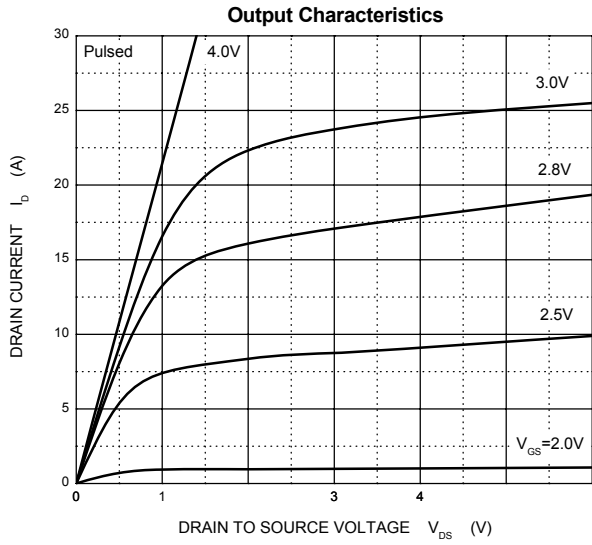
**ELECTRICAL CHARACTERISTICS(T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Off characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	30			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V			±100	nA
<b>On characteristics (note1)</b>						
Gate-threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1.0	1.3	3.0	V
Static drain-source on-state resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =10A		9	13.5	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5A		12	20	mΩ
Forward transconductance	g <sub>FS</sub>	V <sub>DS</sub> =15V, I <sub>D</sub> =5A		8		S
<b>Dynamic characteristics (note 2)</b>						
Input capacitance	C <sub>iSS</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f =1MHz		9130		pF
Output capacitance	C <sub>oSS</sub>			625		
Reverse transfer capacitance	C <sub>rSS</sub>			387		
<b>Switching characteristics (note 2)</b>						
Total gate charge	Q <sub>g</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =10V, I <sub>D</sub> =10A			40	nC
Gate-source charge	Q <sub>gs</sub>			5.5		
Gate-drain charge	Q <sub>gd</sub>			3.7		
Turn-on delay time	t <sub>d(on)</sub>	V <sub>DD</sub> =25V, I <sub>D</sub> =1A, V <sub>GS</sub> =10V, R <sub>G</sub> =6Ω, R <sub>L</sub> =25Ω			15	ns
Turn-on rise time	t <sub>r</sub>				15	
Turn-off delay time	t <sub>d(off)</sub>				60	
Turn-off fall time	t <sub>f</sub>				25	
Gate Resistance	R <sub>g</sub>	f =1MHz, V <sub>DS</sub> =0V, V <sub>GS</sub> =0V,	0.2		0.8	Ω
<b>Drain-Source Diode Characteristics</b>						
Drain-source diode forward voltage(note1)	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =2.3A			1.1	V
Continuous drain-source diode forward current	I <sub>S</sub>				7.5	A
Pulsed drain-source diode forward current	I <sub>SM</sub>				50	A

Notes:

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

**Typical Characteristics**





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

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