



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

MCQ4407

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: Q4407

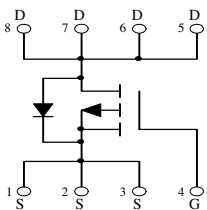
Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-12	A
Pulsed Drain Current	I_{DM}	-48	A
Single Pulsed Avalanche Energy ⁽¹⁾	E_{AS}	115	mJ
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	89	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	

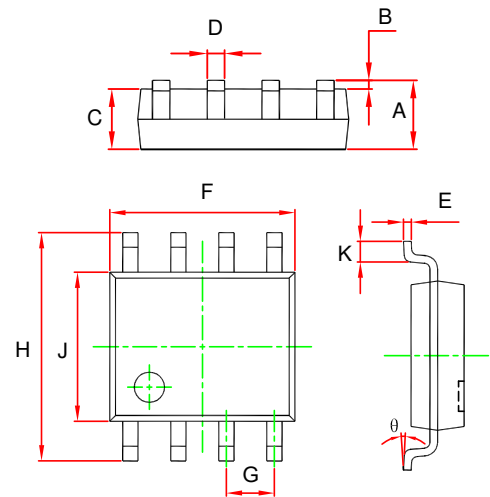
Notes :

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

Equivalent Circuit



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

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

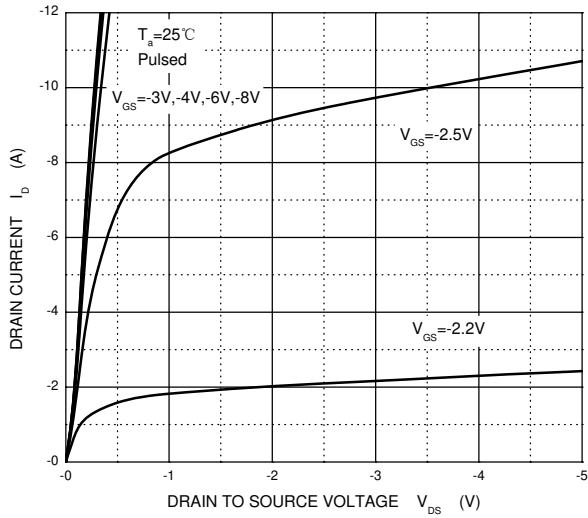
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
On characteristics (note1)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.5	-2.2	V
Static drain-source on-state resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -12A		7.8	13	mΩ
		V _{GS} = -6.0V, I _D = -10A		9	17	mΩ
Forward transconductance	g _{FS}	V _{DS} = -5V, I _D = -15A	25			S
Dynamic characteristics (note 2)						
Input capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		2900		pF
Output capacitance	C _{oss}			410		
Reverse transfer capacitance	C _{rss}			280		
Switching characteristics (note 2)						
Total gate charge	Q _g	V _{DS} = -15V, V _{GS} = -10V, I _D = -10A		48		nC
Gate-source charge	Q _{gs}			12		
Gate-drain charge	Q _{gd}			14		
Turn-on delay time	t _{d(on)}	V _{DD} = -15V, V _{GS} = -10V, R _G = 3Ω, R _L = 1.25Ω		15		ns
Turn-on rise time	t _r			11		
Turn-off delay time	t _{d(off)}			44		
Turn-off fall time	t _f			21		
Gate Resistance	R _g	f = 1MHz, V _{DS} = 0V, V _{GS} = 0V,			3.6	Ω
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V _{SD}	V _{GS} = 0V, I _S = -2A			-1.2	V
Continuous drain-source diode forward current	I _S				-15	A
Pulsed drain-source diode forward current	I _{SM}				-60	A

Notes:

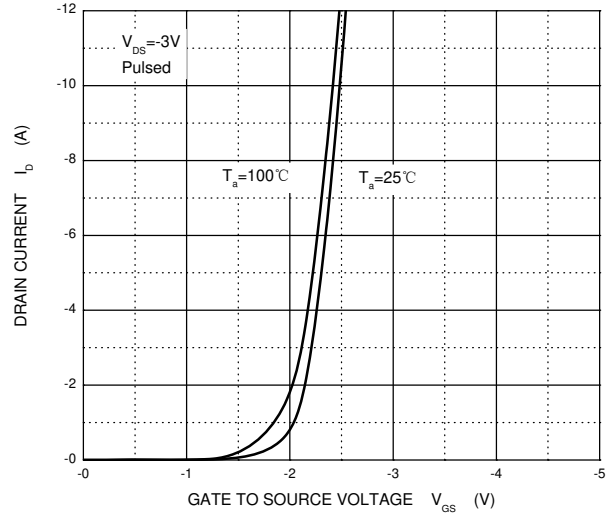
1. Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.

Typical Characteristics

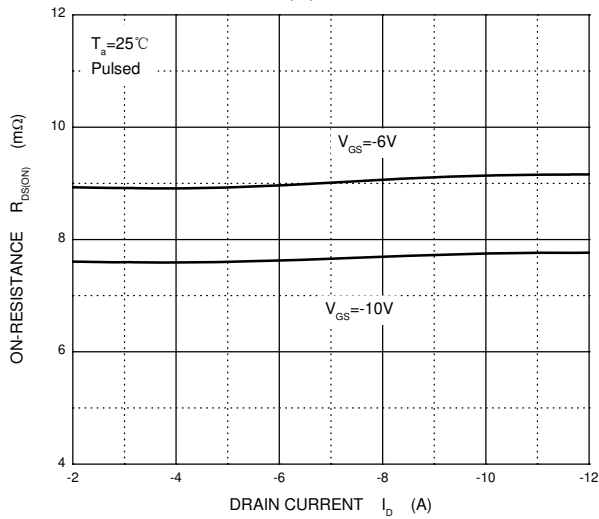
Output Characteristics



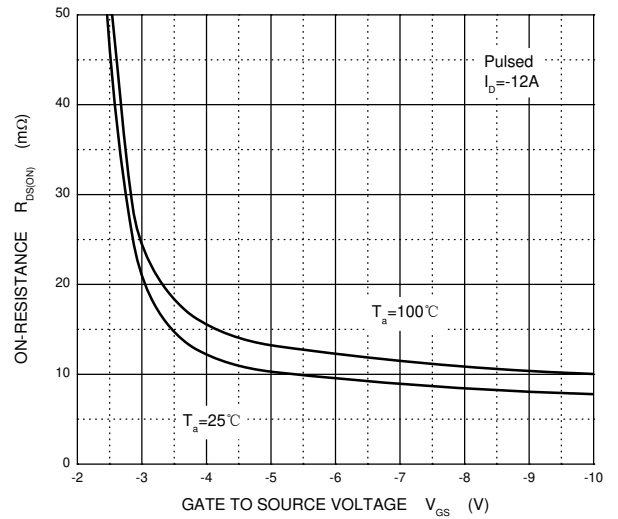
Transfer Characteristics



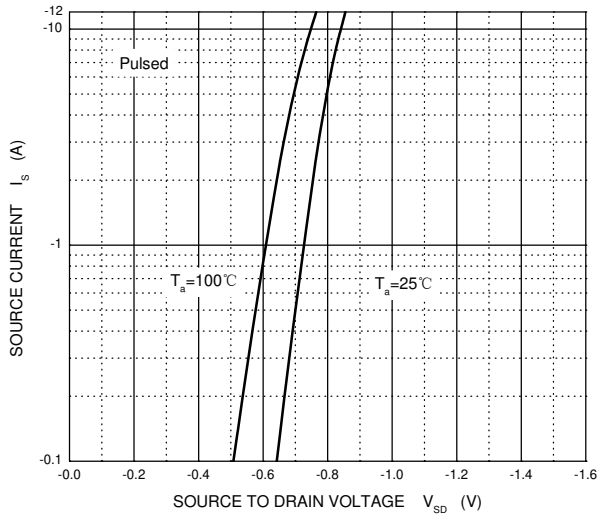
$R_{DS(ON)}$ — I_D



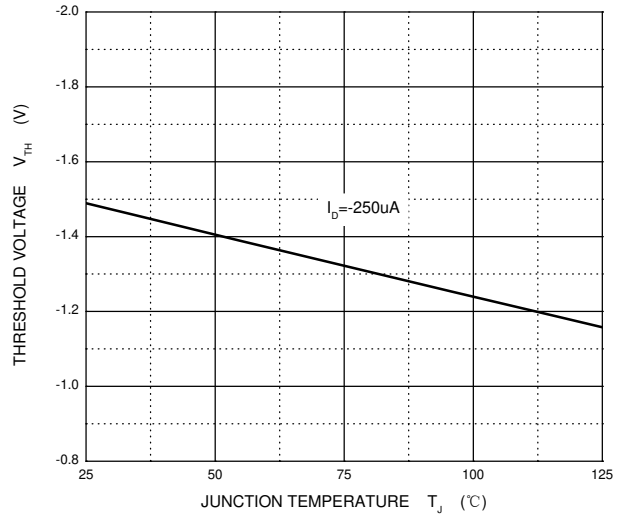
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage





Micro Commercial Components

Ordering Information :

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

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

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