



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

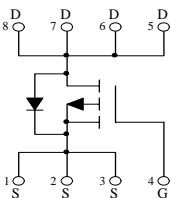
Maximum ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

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	$^\circ\text{C/W}$
Operating Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	

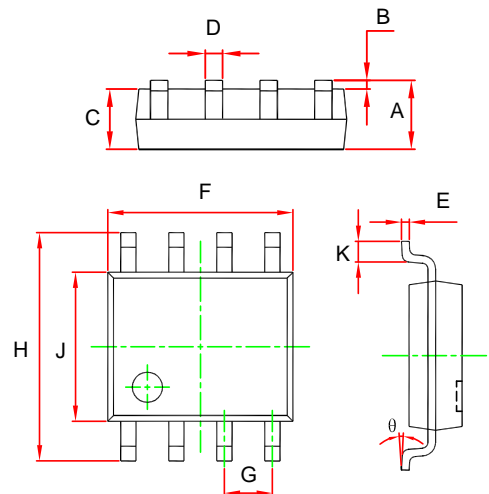
Notes :

(1). E_{AS} condition: $V_{DD} = -50\text{V}$, $L = 0.1\text{mH}$, $R_G = 25\Omega$, Starting $T_J = 25^\circ\text{C}$

Equivalent Circuit



SOP-8



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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

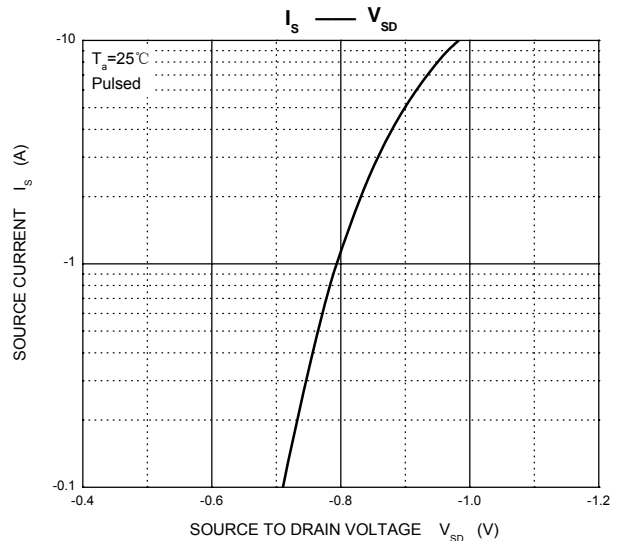
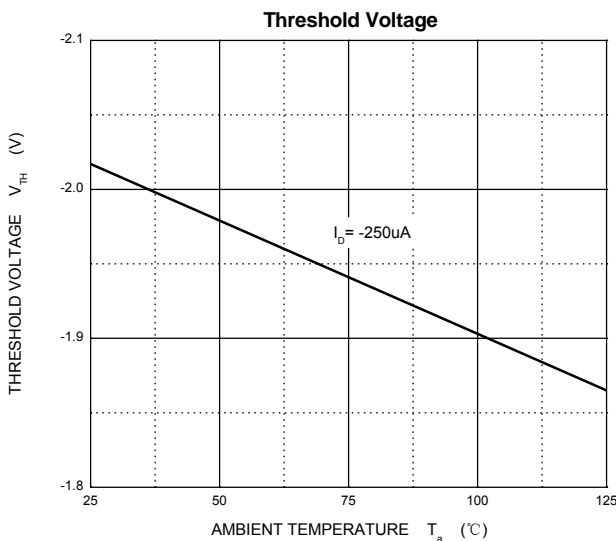
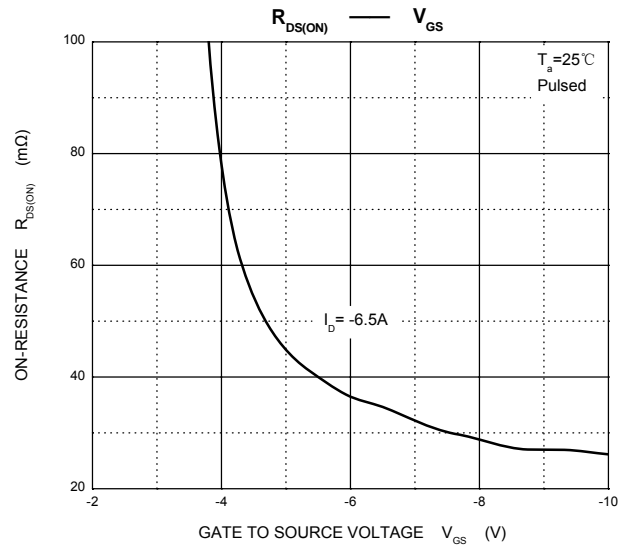
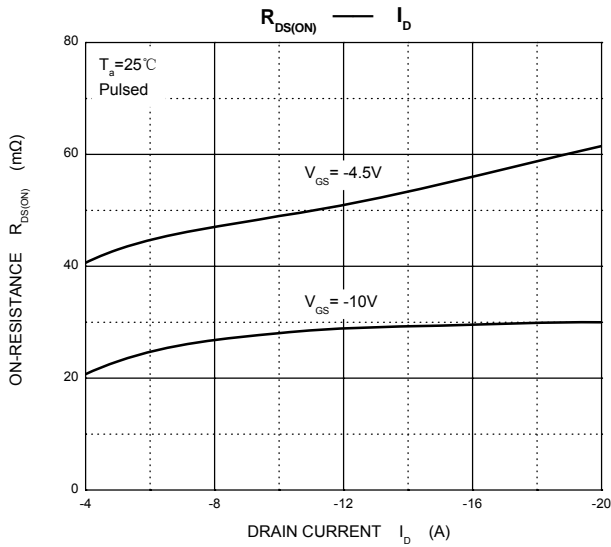
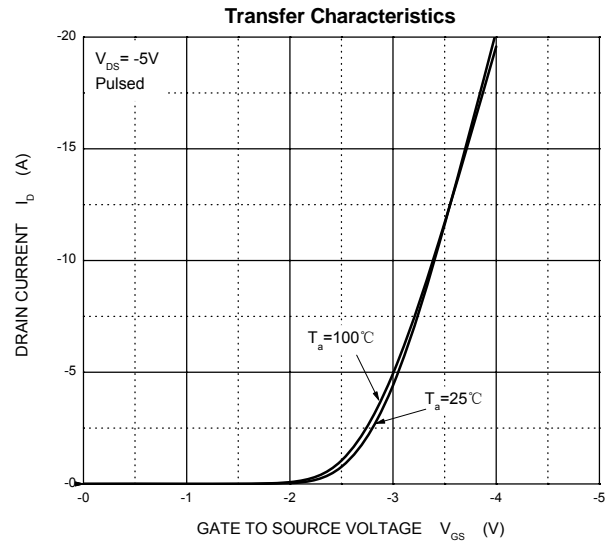
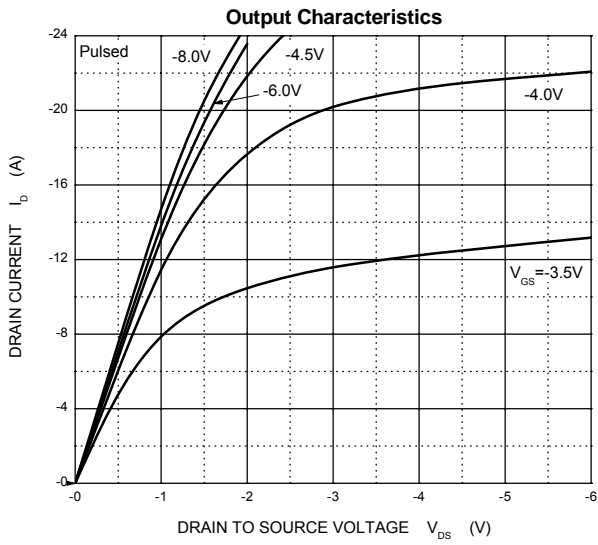
ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

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	-1.4	-2.0	-2.4	V
Static drain-source on-state 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





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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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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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