

Micro Commercial Components



Micro Commercial Components
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MCQ4503

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: Q4503

N and P-Channel Enhancement Mode Field Effect Transistor

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

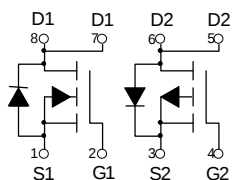
Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage	V _{DS}	30	-30	V
Gate-Source Voltage	V _{GS}	±20	±20	V
Continuous Drain Current ^a T _a =25°C T _a =70°C	I _D	6.9 5.5	-6.3 -5	A
Pulsed Drain Current ^b	I _{DM}	20	-20	A
Power Dissipation	P _D	1.4		W
Thermal Resistance from Junction to Ambient	R _{θJA}	89		°C/W
Operating Junction Temperature	T _J	150		°C
Storage Temperature	T _{STG}	-55 ~+150		

Notes :

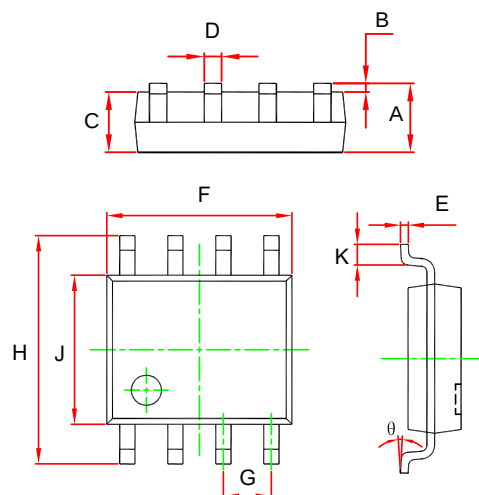
a. These tests are performed with infinite heat sink.

b.Pulse width by Max.junction temperature.

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°	

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

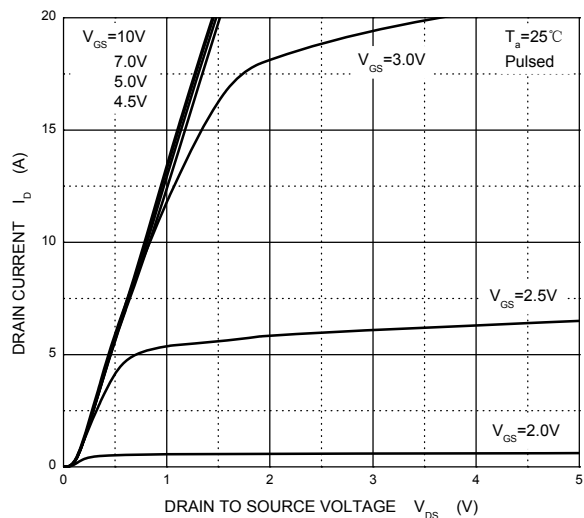
Parameter	Symbol	Test Condition		Min	Typ	Max	Units
Static							
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} =0, I _D =250μA	N-Ch	30			V
		V _{GS} =0, I _D =-250μA	P-Ch	-30			
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	N-Ch	1	1.5	3	V
		V _{DS} =V _{GS} , I _D =-250μA	P-Ch	-1	-1.7	-3	
Gate-body leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	N-Ch			±100	nA
			P-Ch				
Zero gate voltage drain current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	N-Ch			1	μA
		V _{DS} =-30V, V _{GS} =0V	P-Ch			-1	
Drain-source on-resistance ^c	R _{DS(on)}	V _{GS} =10V, I _D =6A	N-Ch		10	28	mΩ
		V _{GS} =-10V, I _D =-6A	P-Ch		16	36	
		V _{GS} =4.5V, I _D =4A	N-Ch		14	42	
		V _{GS} =-4.5V, I _D =-4A	P-Ch		25	55	
Forward transconductance	g _{fs}	V _{DS} =10V, I _D =6A	N-Ch	4			S
		V _{DS} =-10V, I _D =-6A	P-Ch				
Diode forward voltage ^c	V _{SD}	I _S =1.7A,V _{GS} =0V	N-Ch			1.2	V
		I _S =-1.7A,V _{GS} =0V	P-Ch			-1.2	
Dynamic							
Total gate charge ^c	Q _g	N-Channel	N-Ch			13.5	nC
			P-Ch			20	
Gate-source charge ^d	Q _{gs}	V _{DS} =24V,V _{GS} =4.5V,I _D =6A P-Channel	N-Ch		1.4		
			P-Ch		2		
Gate-drain charge ^d	Q _{gd}	V _{DS} =-24V,V _{GS} =-4.5V,I _D =-6A	N-Ch		4.7		
			P-Ch		7		
Turn-on delay time ^c	t _{d(on)}	N-Channel	N-Ch		5		ns
			P-Ch		8		
Rise time ^d	t _r	V _{DS} =20V,R _D =20Ω, I _D =1A, V _{GS} =10V,R _G =3.3Ω	N-Ch		8		
			P-Ch		7		
Turn-off delay time ^d	t _{d(off)}	P-Channel V _{DS} =-15V,R _D =15Ω, I _D =-1A, V _{GS} =-10V,R _G =3.3Ω	N-Ch		18.5		
			P-Ch		34		
Fall time ^d	t _f		N-Ch		9		
			P-Ch		26		
Input Capacitance ^d	C _{iss}	N-Channel	N-Ch			770	pF
			P-Ch			1380	
Output Capacitance ^d	C _{oss}	V _{DS} =25V,V _{GS} =0V,f =1MHz P-Channel	N-Ch		80		
			P-Ch		150		
Reverse Transfer Capacitance ^d	C _{rss}	V _{DS} =-25V,V _{GS} =0V,f =1MHz	N-Ch		75		
			P-Ch		140		

Notes :

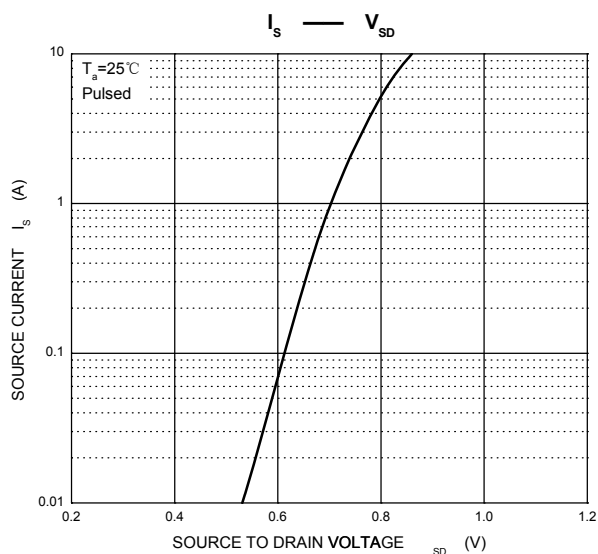
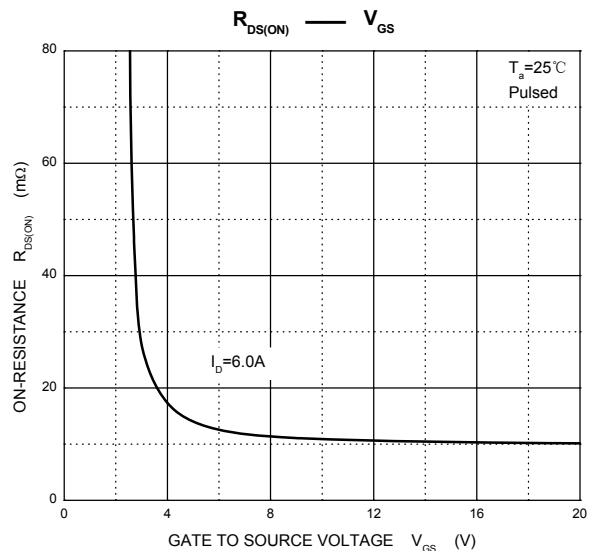
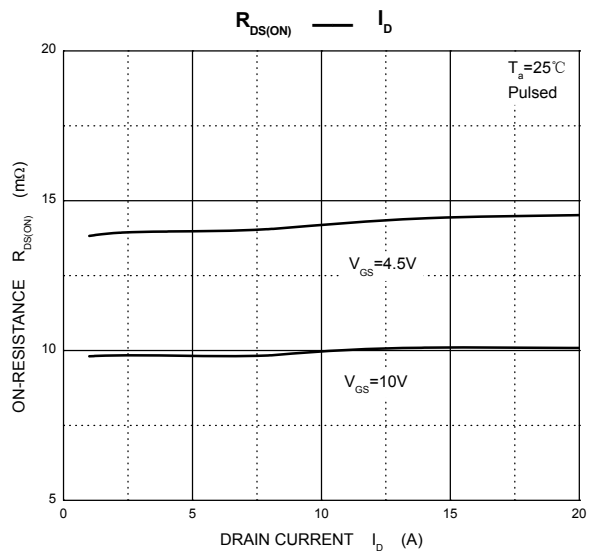
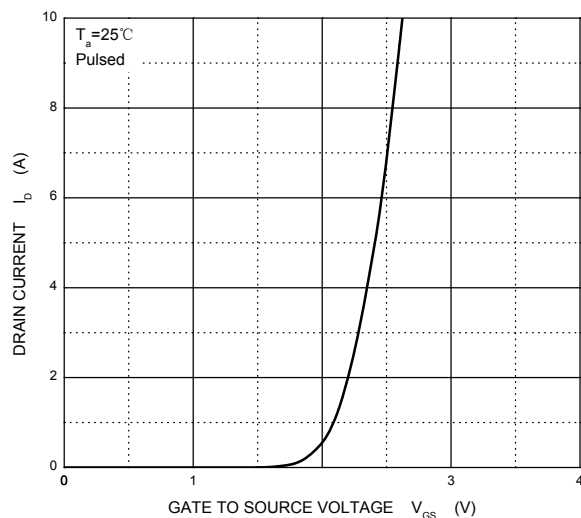
- c. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
- d. Guaranteed by design, not subject to production testing.

Typical Characteristics

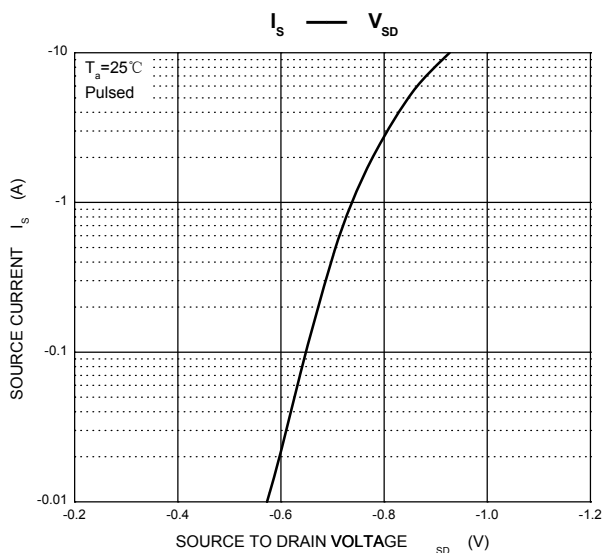
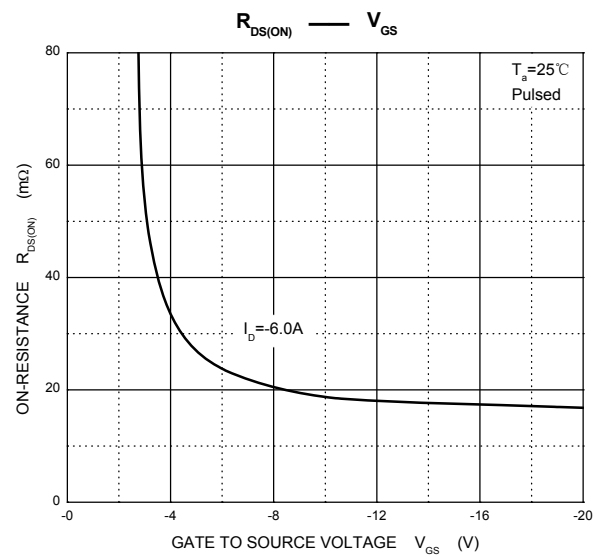
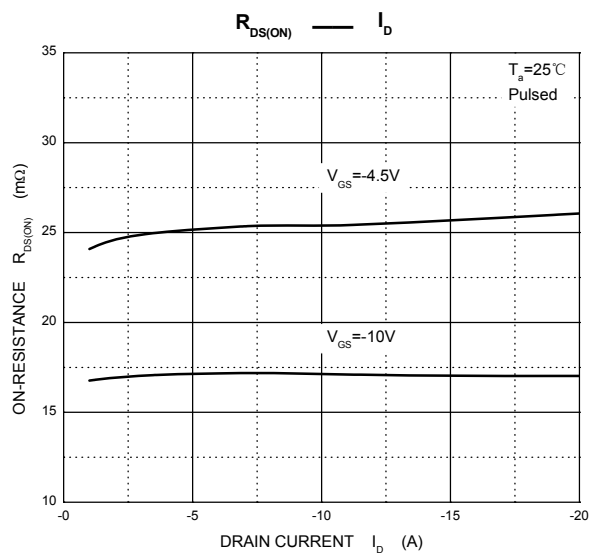
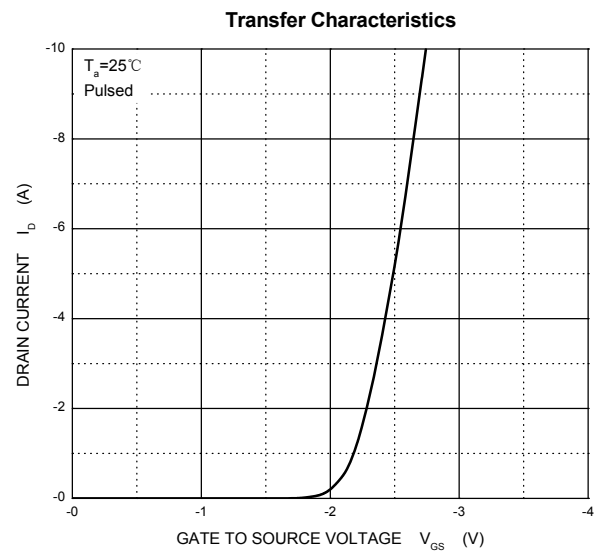
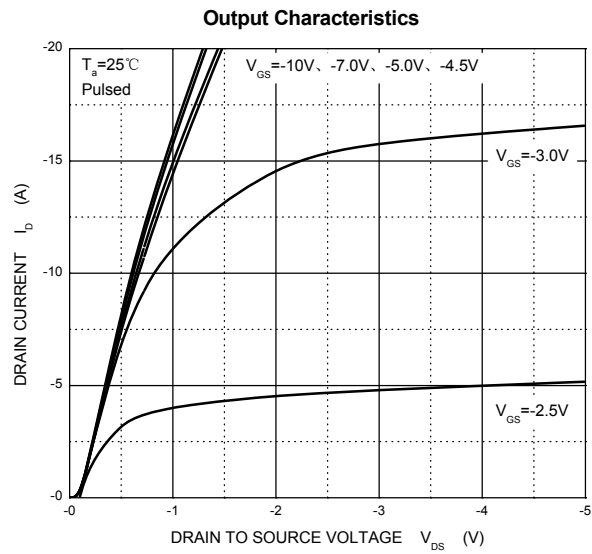
Output Characteristics



Transfer Characteristics



Typical Characteristics





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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Электрон
Связь**

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