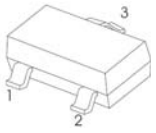
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

SOT-23 Plastic-Encapsulate MOSFETS

CJ2304 N-Channel 30-V(D-S) MOSFET

SOT-23



1. GATE
2. SOURCE
3. DRAIN

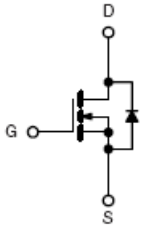
FEATURE

TrenchFET Power MOSFET

APPLICATIONS

- Load Switch for Portable Devices
- DC/DC Converter

MARKING: S4



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	3.3	A
Pulsed Drain Current	I_{DM}	15	
Continuous Source-Drain Diode Current	I_S	0.9	
Maximum Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient (t≤5s)	$R_{\theta JA}$	357	℃/W
Storage Temperature	T_J	150	℃
Junction Temperature	T_{STG}	-55 ~+150	

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Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Gate-source threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.2		2.2	
Gate-body leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} =30V, V_{GS} =0V			1	μA
Drain-source on-state resistance[a]	$R_{DS(on)}$	V_{GS} =10V, I_D =3.2A		0.049	0.060	Ω
		V_{GS} =4.5V, I_D =2.8A		0.061	0.075	
Forward transconductance[a]	g_{fs}	V_{DS} =4.5V, I_D =2.5A	2.5			S
Dynamic[b]						
Total gate charge	Q_g	V_{DS} =15V,V_{GS} =10V,I_D =3.4A		4.5	6.7	nC
		V_{DS} =15V,V_{GS} =4.5V,I_D =3.4A		2.1	3.2	
Gate-source charge	Q_{gs}			0.85		
Gate-drain charge	Q_{gd}			0.65		
Gate resistance	R_g	f =1.0MHz	0.8	4.4	8.8	Ω
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz		235		pF
Output capacitance	C_{oss}			45		
Reverse transfer capacitance	C_{rss}			17		
Turn-on delay Time	$t_{d(on)}$	V_{DD}=15V, R_L=5.6Ω, I_D ≈2.7A, V_{GEN}=4.5V,Rg=1Ω		12	20	ns
Rise time	t_r			50	75	
Turn-off delay time	$t_{d(off)}$			12	20	
Fall time	t_f			22	35	
Turn-on delay time	$t_{d(on)}$	V_{DD}=15V, R_L=5.6Ω, I_D ≈2.7A, V_{GEN}=10V,Rg=1Ω		5	10	
Rise time	t_r			12	20	
Turn-off delay time	$t_{d(off)}$			10	15	
Fall time	t_f			5	10	
Drain-source body diode characteristics						
Continuous source-drain diode current	I_S	T_C=25℃			1.4	A
Pulse diode forward current	I_{SM}				15	A
Body diode voltage	V_{SD}	I_S=-2.7A,V_{GS}=0V		0.8	1.2	V

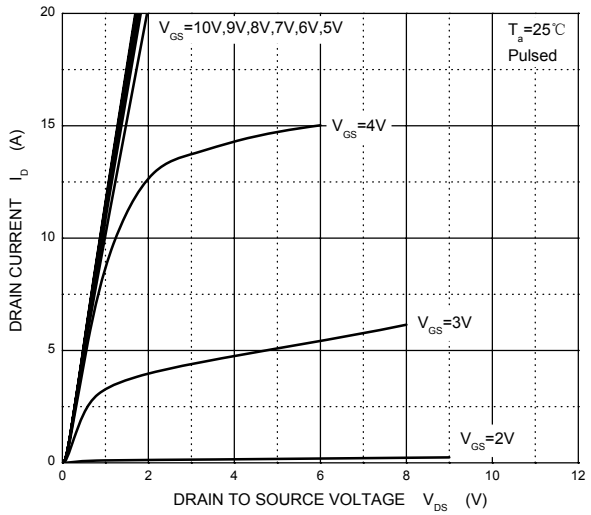
Notes :

a. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.

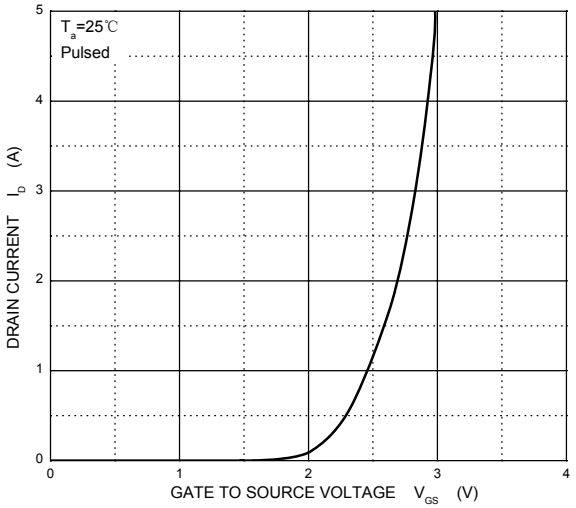
b. Guaranteed by design, not subject to production testing.

Typical Characteristics CJ2304

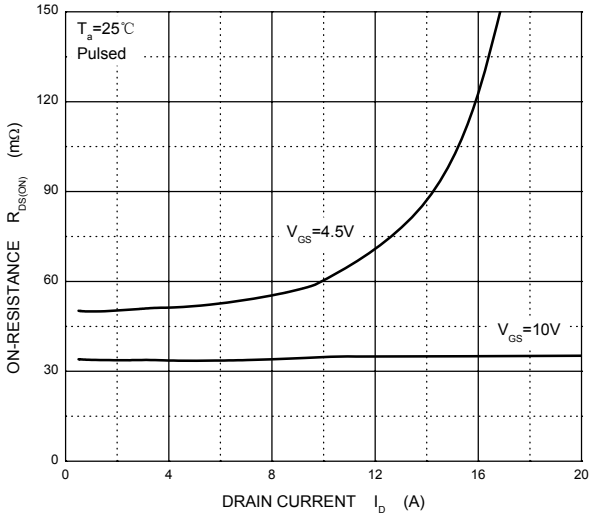
Output Characteristics



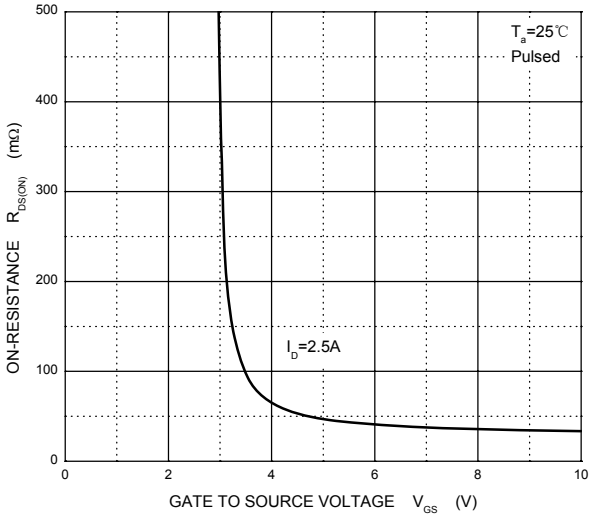
Transfer Characteristics



$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}