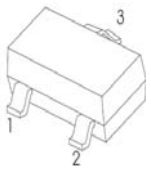
SOT-23 Plastic-Encapsulate MOSFETS

CJ2312 N-Channel 20-V(D-S) MOSFET

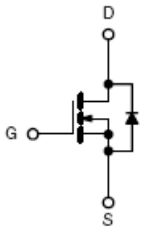
SOT-23



1. GATE
2. SOURCE
3. DRAIN

APPLICATIONS

- DC/DC Converters
- Load Switching for Portable Applications



MARKING: S12

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±8.0	
Continuous Drain Current	t=5s	I_D	5	A
Pulsed Drain Current		I_{DM}	20	
Continuous Source-Drain Diode Current		I_S	1.04	
Maximum Power Dissipation	t=5s	P_D	0.35	W
Thermal Resistance from Junction to Ambient		$R_{\theta JA}$	357	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{stg}	-50 ~+150	

Electrical characteristics (T_a=25℃ unless otherwise noted)

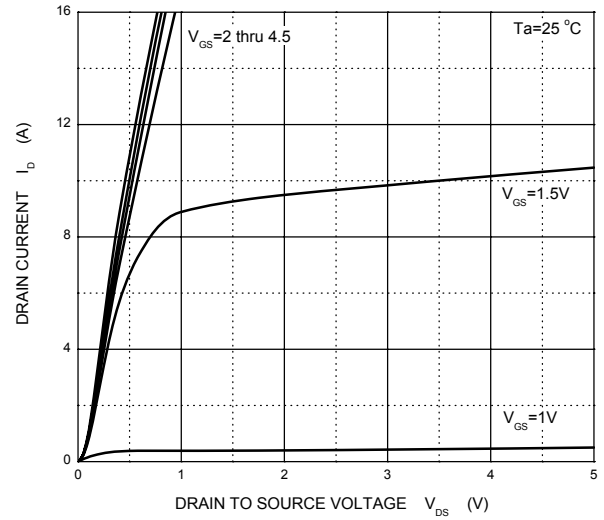
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Gate-source leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±8V			±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V, V_{GS} =0V			1.0	μA
Gate-source threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.45		1.0	V
Drain-source on-state resistance[a]	$R_{DS(on)}$	V_{GS} =4.5V, I_D =5.0A			0.0318	Ω
		V_{GS} =2.5V, I_D =4.7A			0.0356	
		V_{GS} =1.8V, I_D =4.3A			0.0414	
Forward tranconductance[a]	g_{fS}	V_{DS} =10V, I_D =5.0A	6			S
Dynamic[b]						
Input capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f =1MHz		865		pF
Output capacitance	C_{oss}			105		
Reverse transfer capacitance	C_{rss}			55		
Gate resistance	R_g	f =1MHz	0.5		4.8	Ω
Turn-on delay Time	$t_{d(on)}$	V_{GEN}=5V,V_{DD}=10V, I_D =4A,R_G=1Ω, R_L=2.2Ω			10	ns
Rise time	t_r				20	
Turn-off Delay time	$t_{d(off)}$				32	
Fall yime	t_f				12	
Drain-source body diode characteristics						
Forward diode voltage	V_{SD}	V_{GS} =0V,I_S=4A		0.75	1.2	V

Notes :

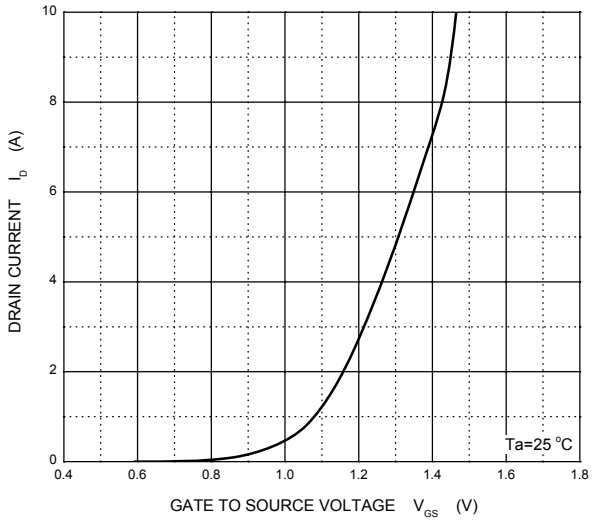
a. Pulse Test : pulse width ≤300μs, duty cycle ≤2%.

b. These parameters have no way to verify.

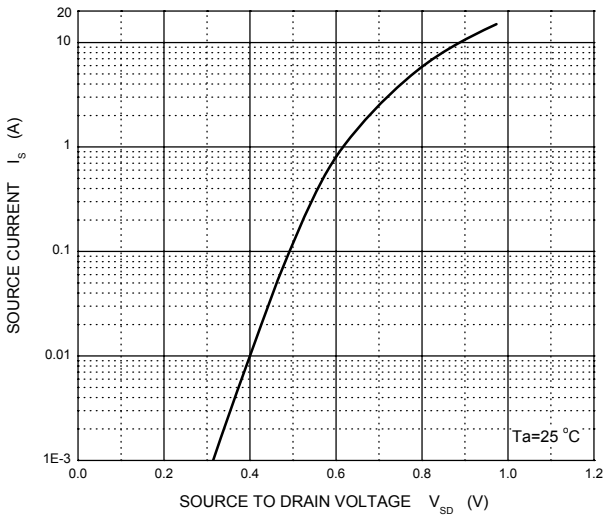
Output Characteristics



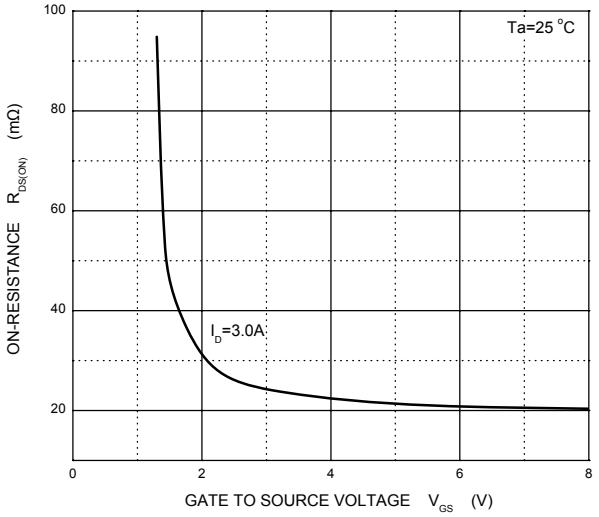
Transfer Characteristics



I_S —— V_{SD}



$R_{DS(ON)}$ —— V_{GS}



$R_{DS(ON)}$ —— I_D