

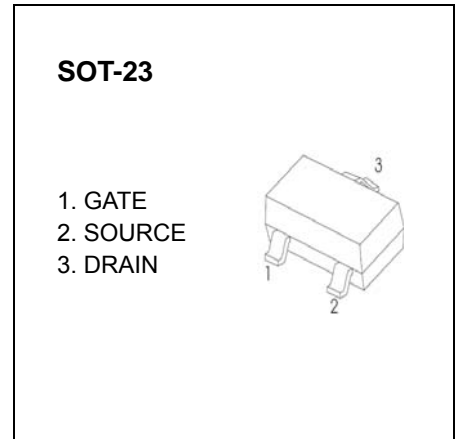
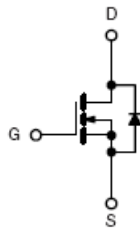


**SOT-23 Plastic-Encapsulate MOSFETS**

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

**APPLICATIONS**

- DC/DC Converters
- Load Switching for Portable Applications



**MARKING: S12**

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

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

**Electrical characteristics (T<sub>a</sub>=25°C unless otherwise noted)**

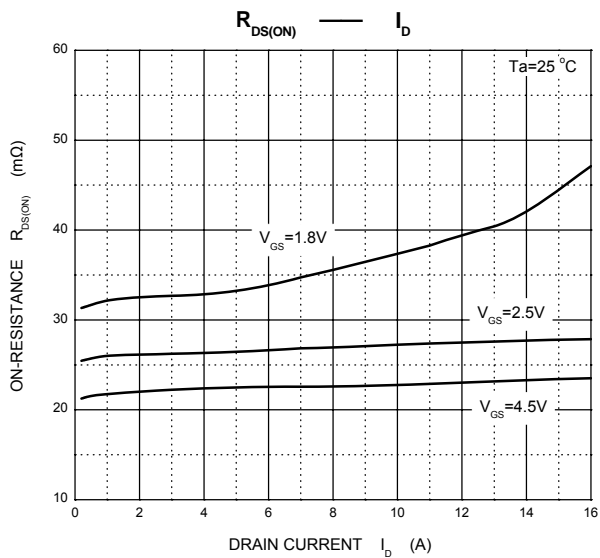
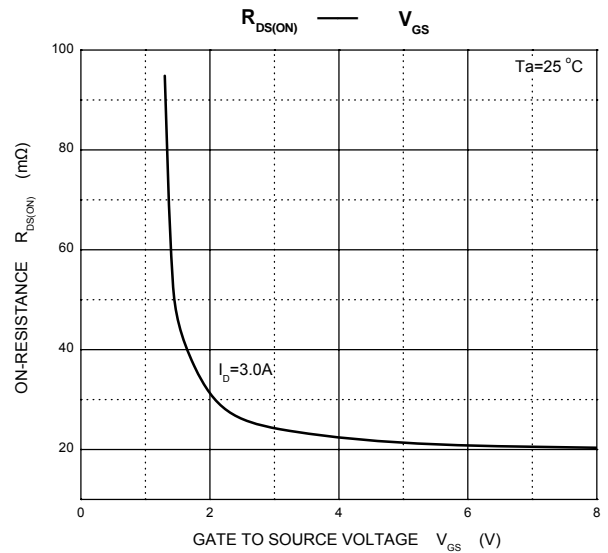
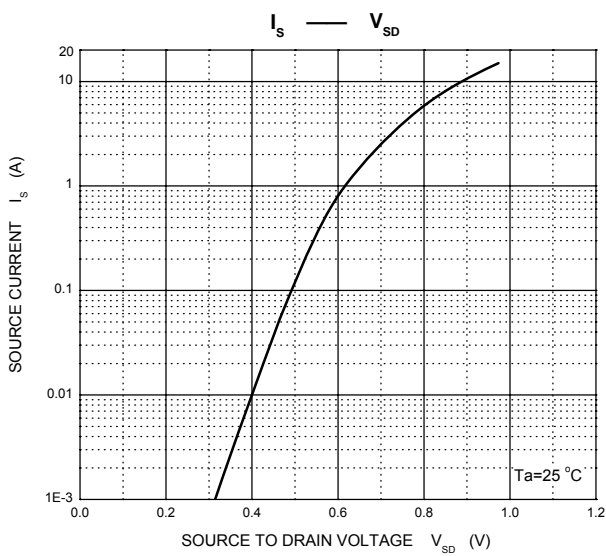
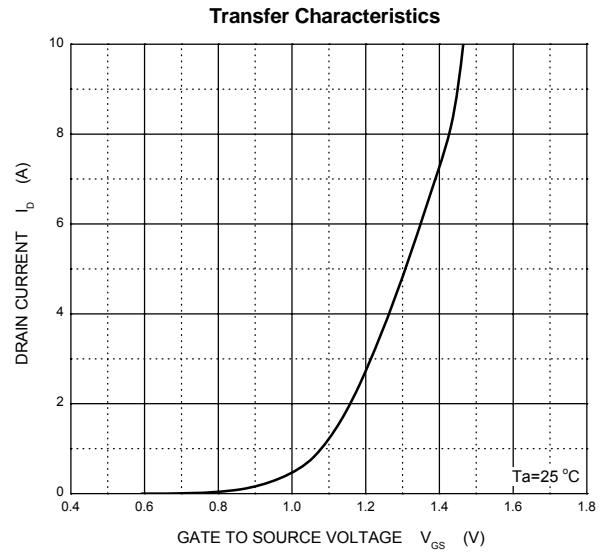
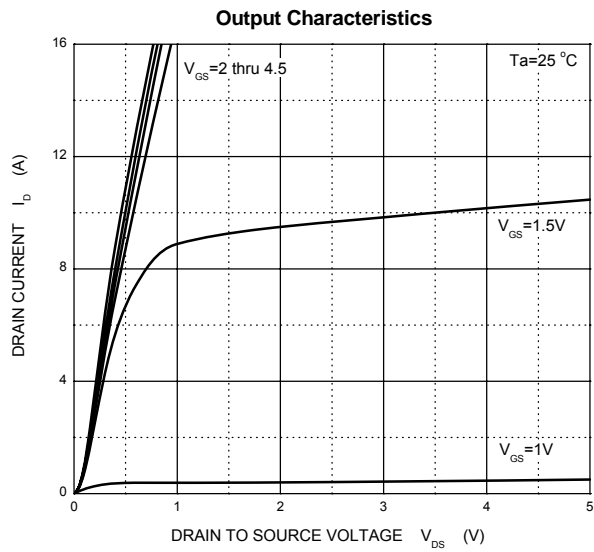
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	20			V
Gate-source leakage	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±100	nA
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1.0	μA
Gate-source threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	0.45		1.0	V
Drain-source on-state resistance <sup>a</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =5.0A			0.0318	Ω
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =4.7A			0.0356	
		V <sub>GS</sub> =1.8V, I <sub>D</sub> =4.3A			0.0414	
Forward tranconductance <sup>a</sup>	g <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =5.0A	6			S
<b>Dynamic<sup>b</sup></b>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f =1MHz		865		pF
Output capacitance	C <sub>oss</sub>			105		
Reverse transfer capacitance	C <sub>rss</sub>			55		
Gate resistance	R <sub>g</sub>	f =1MHz	0.5		4.8	Ω
Turn-on delay Time	t <sub>d(on)</sub>	V <sub>GEN</sub> =5V, V <sub>DD</sub> =10V, I <sub>D</sub> =4A, R <sub>G</sub> =1Ω, R <sub>L</sub> =2.2Ω			10	ns
Rise time	t <sub>r</sub>				20	
Turn-off Delay time	t <sub>d(off)</sub>				32	
Fall yime	t <sub>f</sub>				12	
<b>Drain-source body diode characteristics</b>						
Forward diode voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =4A		0.75	1.2	V

**Notes :**

- Pulse Test : pulse width ≤300μs, duty cycle ≤2%.
- These parameters have no way to verify.

# Typical Characteristics

# CJ2312



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