

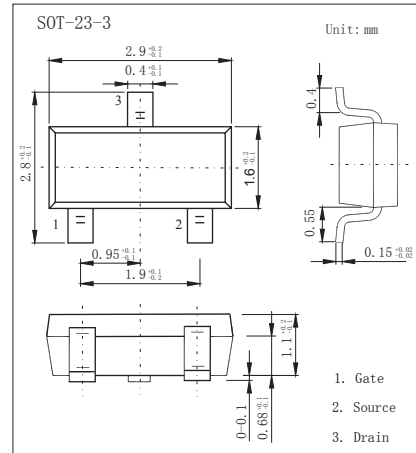
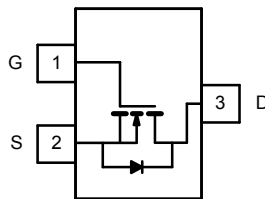


SOT-23-3 Plastic-Encapsulate MOSFETS

SI2304 N-Channel Enhancement MOSFET

■ Features

- $V_{DS} (V) = 30V$
- $R_{DS(ON)} < 117m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 190m\Omega (V_{GS} = 4.5V)$



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current ($T_J = 150^\circ C$) *1	I_D	$T_a = 25^\circ C$	2.5
		$T_a = 70^\circ C$	2.0
Pulsed Drain Current *2	I_{DM}	10	A
Power Dissipation	P_D	$T_a = 25^\circ C$	1.25
		$T_a = 70^\circ C$	0.8
Thermal Resistance.Junction- to-Ambient *1	R_{thJA}	100	$^\circ C/W$
Thermal Resistance.Junction- to-Ambient *3		166	
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

*1 Surface Mounted on FR4 Board, $t \leq 5$ sec.
 *2 Pulse width limited by maximum junction temperature.
 *3 Surface Mounted on FR4 Board.

■ Electrical Characteristics Ta = 25°C

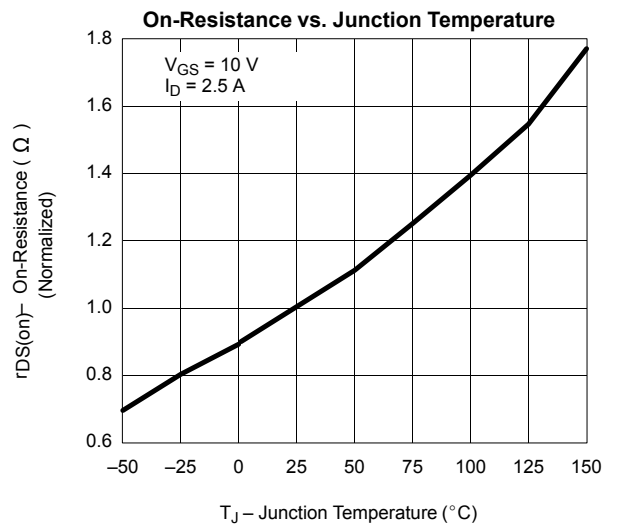
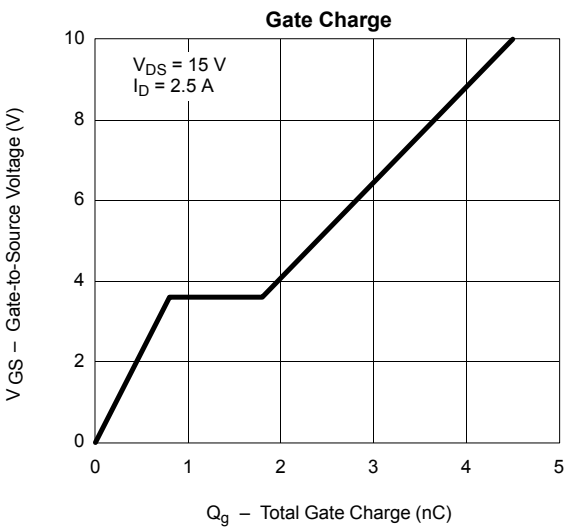
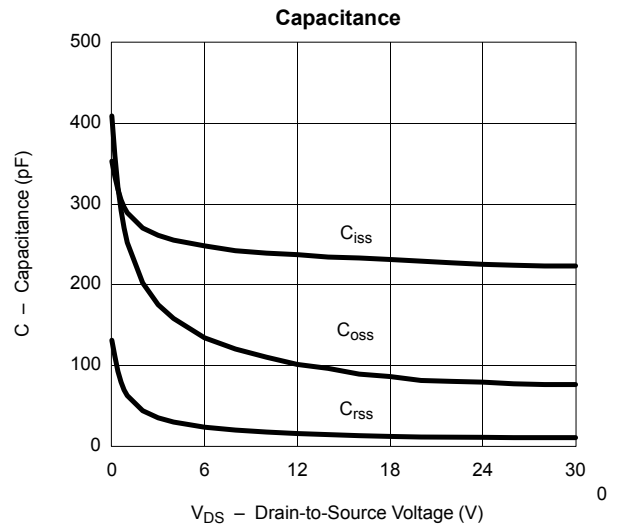
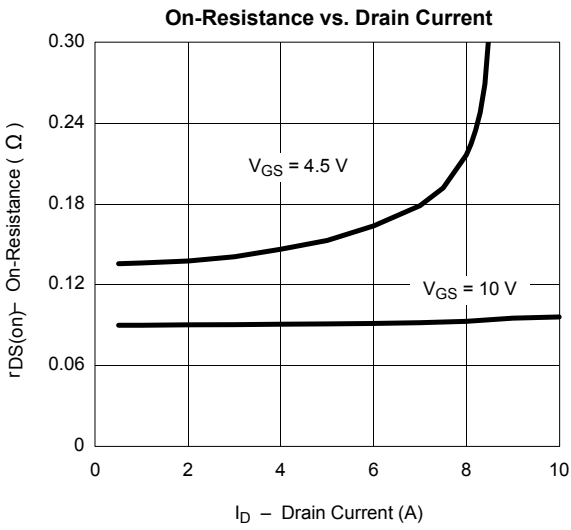
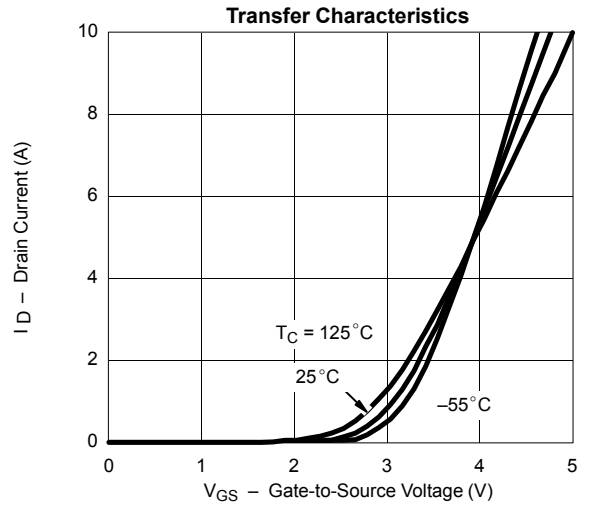
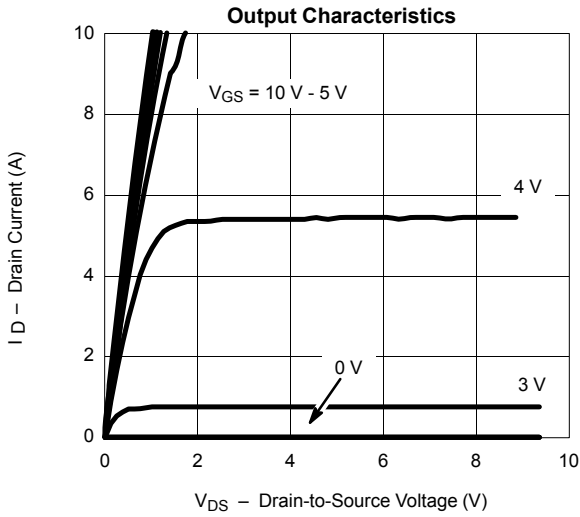
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			0.5	μA
		V _{DS} =30V, V _{GS} =0V, Ta=55°C			10	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	1.5		3	V
On-State Drain Current *1	I _{D(on)}	V _{DS} ≥ 4.5 V, V _{GS} = 10 V	6			A
		V _{DS} ≥ 4.5 V, V _{GS} = 4.5 V	4			
Static Drain-Source On-Resistance *1	R _{DS(on)}	V _{GS} =10V, I _D =2.5A		92	117	mΩ
		V _{GS} =4.5V, I _D =2.0A		142	190	
Forward Transconductance *1	g _{FS}	V _{DS} =4.5V, I _D =2.5A		4.6		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		240		pF
Output Capacitance	C _{oss}			110		
Reverse Transfer Capacitance	C _{rss}			17		
Total Gate Charge	Q _g	V _{DS} =15V, V _{GS} =5V, I _D =2.5A		2.4	4	nC
Gate-Source Charge	Q _{gt}	V _{GS} =10V, V _{DS} =15V, I _D =2.5A		4.5	10	
Gate Source Charge	Q _{gs}			0.8		
Gate Drain Charge	Q _{gd}			1.0		
Turn-On DelayTime	t _{d(on)}	I _D =1A, V _{DS} =15V, R _{GEN} =6Ω R _L =15Ω, V _{GS} =10V		8	20	ns
Turn-On Rise Time	t _r			12	30	
Turn-Off DelayTime	t _{d(off)}			17	35	
Turn-Off Fall Time	t _f			8	20	
Maximum Body-Diode Continuous Current	I _S				1.25	A
Diode Forward Voltage	V _{SD}	I _S =1.25A, V _{GS} =0V		0.77	1.2	V

*1 Pulse test: PW ≤ 300us duty cycle ≤ 2%.

■ Marking

Marking	A4*
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■ Typical Characteristics



■ Typical Characteristics

