

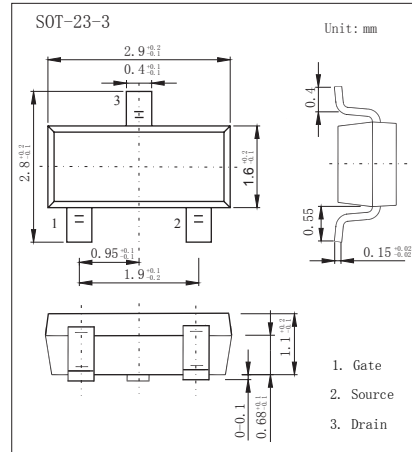
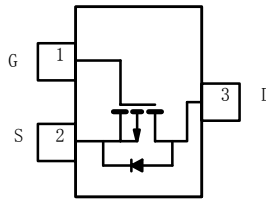


SOT-23-3 Plastic-Encapsulate MOSFETS

SI2319 P-Channel Enhancement MOSFET

■ Features

- $V_{DS} (V) = -40V$
- $I_D = -3.0A (V_{GS} = -10V)$
- $R_{DS(ON)} < 82m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 130m\Omega (V_{GS} = -4.5V)$



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

Parameter	Symbol	5 sec	Steady State	Unit
Drain-Source Voltage	V_{DS}	-40		V
Gate-Source Voltage	V_{GS}	± 20		
Continuous Drain Current ($T_J = 150^\circ C$) *1	I_D	$T_a = 25^\circ C$	-3.0	A
		$T_a = 70^\circ C$	-2.4	
Pulsed Drain Current	I_{DM}	-12		W
Power Dissipation *1	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 *2		166		
Thermal Resistance.Junction- to-Foot		50		
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 Surface Mounted on FR4 Board.

■ Electrical Characteristics Ta = 25°C

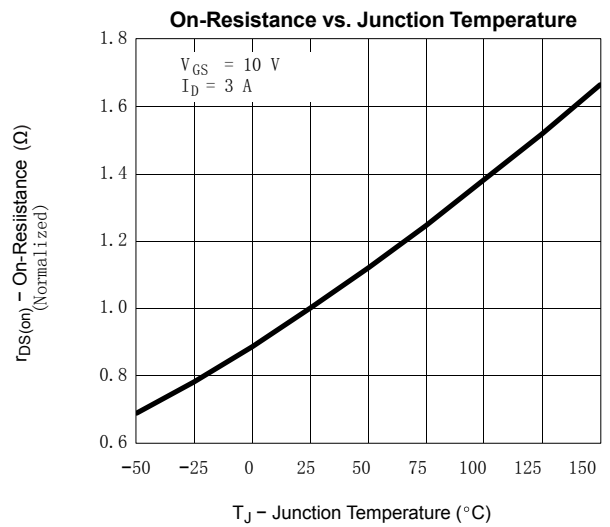
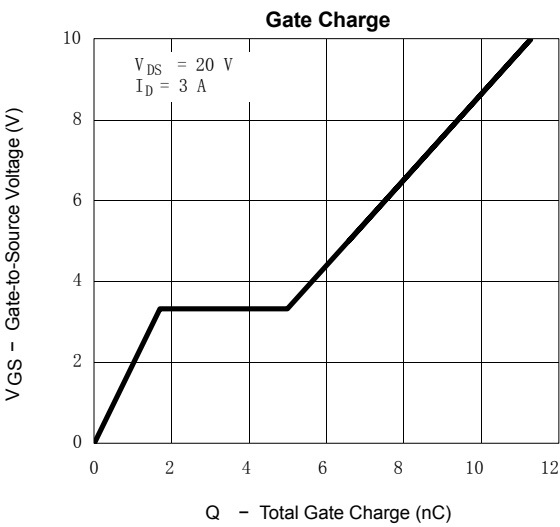
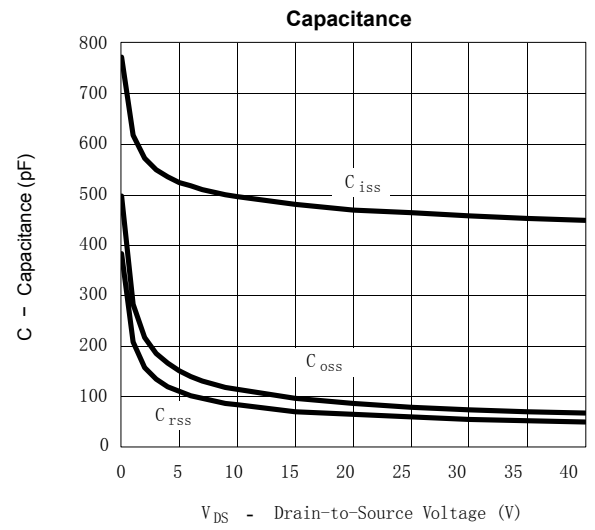
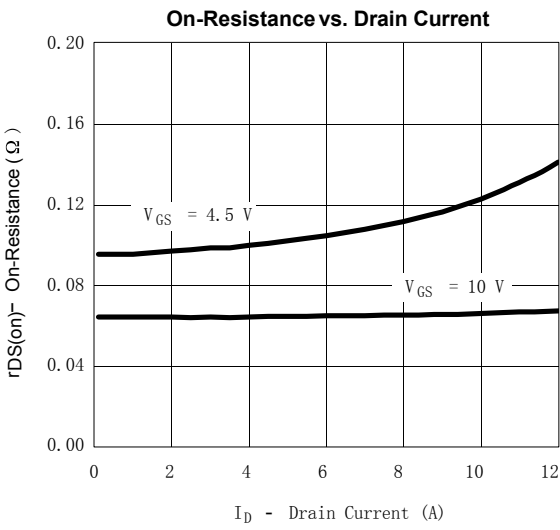
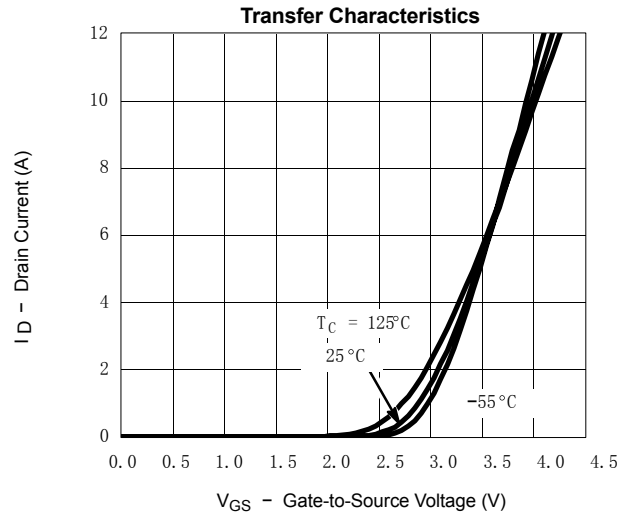
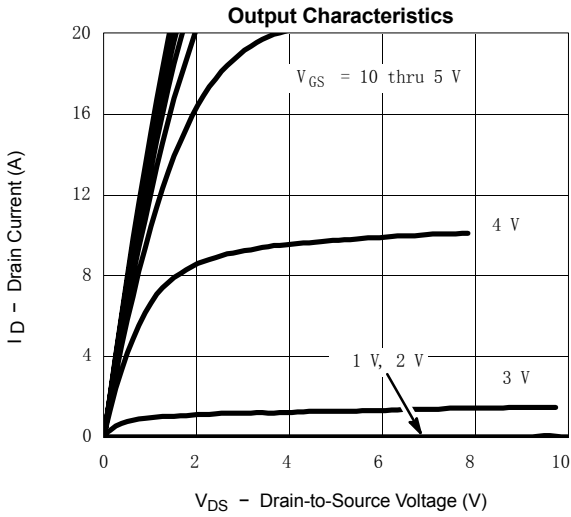
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{bss}	I _D =-250 μA, V _{GS} =0V	-40			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-40V, V _{GS} =0V			-1	μA
		V _{DS} =-40V, V _{GS} =0V, T _J =55°C			-10	
Gate-Body leakage current	I _{gss}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 μA	-1		-3	V
Static Drain-Source On-Resistance *1	R _{DS(on)}	V _{GS} =-10V, I _D =-3.0A		65	82	mΩ
		V _{GS} =-4.5V, I _D =-2.4A		100	130	
On state drain current *1	I _{D(on)}	V _{GS} =-10V, V _{DS} =-5V	-6			A
Forward Transconductance *1	g _{FS}	V _{DS} =-5V, I _D =-3.0A		7		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-20V, f=1MHz		470		pF
Output Capacitance	C _{oss}			85		
Reverse Transfer Capacitance	C _{rss}			65		
Total Gate Charge	Q _g	V _{GS} =-10V, V _{DS} =-20V, I _D =-3A		11.3	17	nC
Gate Source Charge	Q _{gs}			1.7		
Gate Drain Charge	Q _{gd}			3.3		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-4.5V, V _{DS} =-20V, R _L =20 Ω, R _{GEN} =6 Ω I _D =-1.0A		7	15	ns
Turn-On Rise Time	t _r			15	25	
Turn-Off DelayTime	t _{d(off)}			25	40	
Turn-Off Fall Time	t _f			25	40	
Maximum Body-Diode Continuous Current	I _S				-1.25	A
Diode Forward Voltage	V _{SD}	I _S =-1.25 A, V _{GS} =0V		-0.8	-1.2	V

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

■ Marking

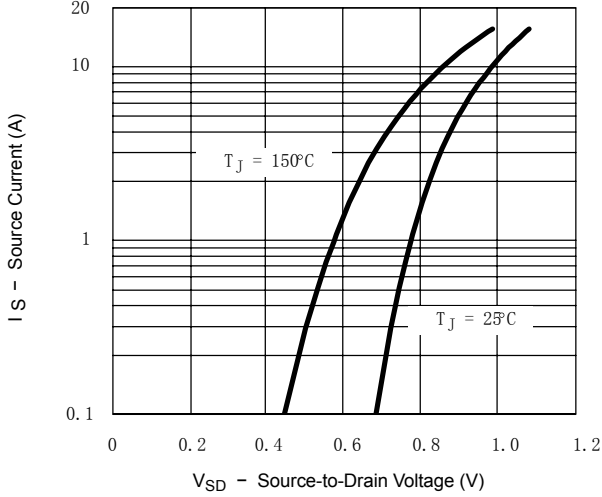
Marking	C9*
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Typical Characteristics

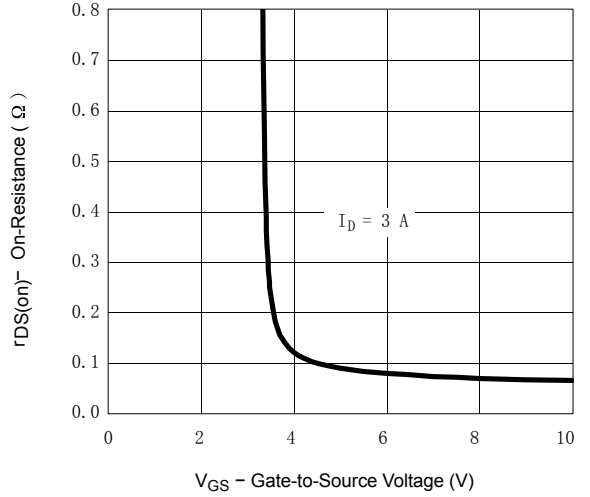


■ Typical Characteristics

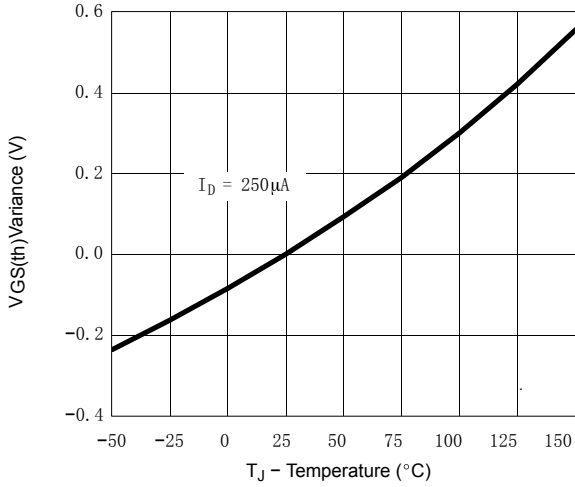
Source-Drain Diode Forward Voltage



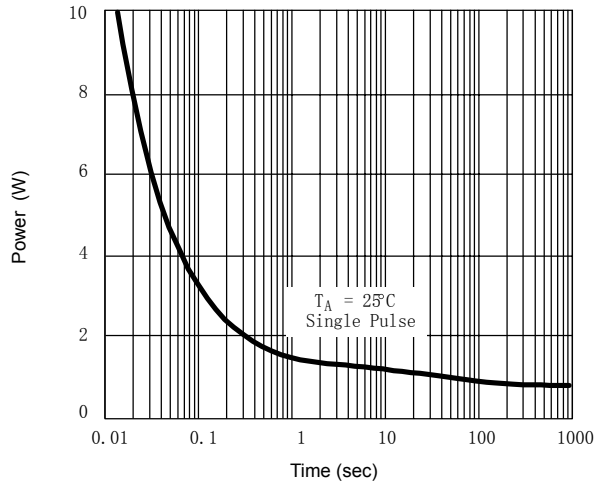
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power



Safe Operating Area, Junction-to-Case

