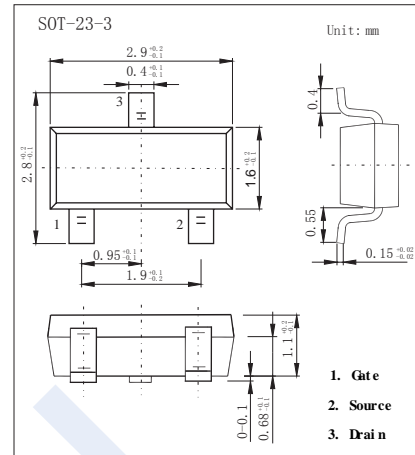
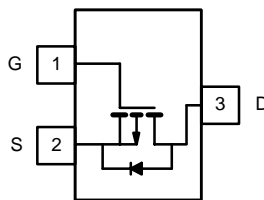


P-Channel Enhancement MOSFET

SI2309DS (KI2309DS)

■ Features

- V_{DS} (V) = -60V
- I_D = -1.25 A (V_{GS} = -10V)
- $R_{DS(ON)}$ < 340m Ω (V_{GS} = -10V)
- $R_{DS(ON)}$ < 550m Ω (V_{GS} = -4.5V)



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current $T_J = 150^\circ\text{C}$ *1,*2	I_D	$T_a = 25^\circ\text{C}$ -1.25	A
		$T_a = 70^\circ\text{C}$ -0.85	
Pulsed Drain Current	I_{DM}	-8	
Avalanche Current $L=0.1\text{mH}$	I_{AS}	-5	
Power Dissipation *1,*2	P_D	$T_a = 25^\circ\text{C}$ 1.25	W
		$T_a = 70^\circ\text{C}$ 0.8	
Thermal Resistance.Junction- to-Ambient $t \leq 5$ sec Steady State *1	R_{thJA}	100	$^\circ\text{C/W}$
		166	
Thermal Resistance.Junction- to-Case *1	R_{thJC}	60	
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

*1 Surface Mounted on FR4 Board.

*2 $t \leq 5$ sec.

P-Channel Enhancement MOSFET

SI2309DS (KI2309DS)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =-250 μ A, V _{GS} =0V	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _D =-48V, V _{GS} =0V			-1	μ A
		V _D =-48V, V _{GS} =0V, T _J =125°C			-50	
Gate-Body leakage current	I _{GSS}	V _D =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _D =V _{GS} I _D =-250 μ A	-1		-3	V
Static Drain-Source On-Resistance *1	R _{DS(on)}	V _{GS} =-10V, I _D =-1.25A		275	340	mΩ
		V _{GS} =-4.5V, I _D =-1A		406	550	
On state drain current *1	I _{D(ON)}	V _{GS} =-4.5V, V _D =-10V	-6			A
Forward Transconductance *1	g _{FS}	V _D =-4.5V, I _D =-1A		1.9		S
Total Gate Charge	Q _g	V _{GS} =-10V, V _D =-30V, I _D =-1.25A		5.4	12	nC
Gate Source Charge	Q _{gs}			1.15		
Gate Drain Charge	Q _{gd}			0.92		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-4.5V, V _D =-30V, R _L =30Ω, R _{GEN} =6Ω I _D =-1A		10.5	20	ns
Turn-On Rise Time	t _r			11.5	20	
Turn-Off DelayTime	t _{d(off)}			15.5	30	
Turn-Off Fall Time	t _f			7.5	15	
Body Diode Reverse Recovery Time	t _{rr}	I _F =-1.25A, di/dt=100A/μ s		30	55	
Maximum Body-Diode Continuous Current	I _S				-1.25	A
Diode Forward Voltage	V _{SD}	I _S =-1.25A, V _{GS} =0V		-0.82	-1.2	V

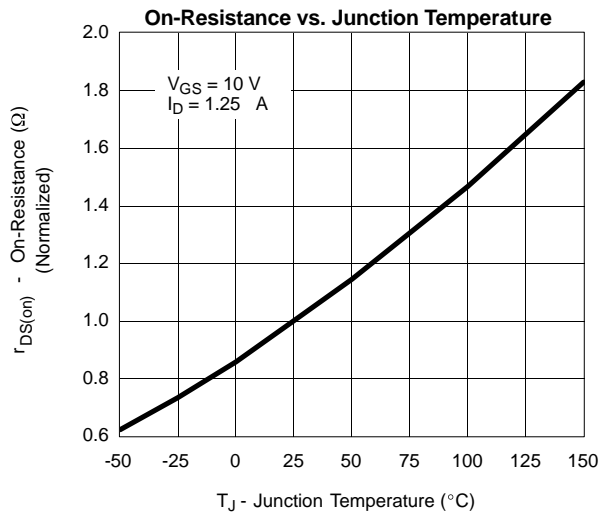
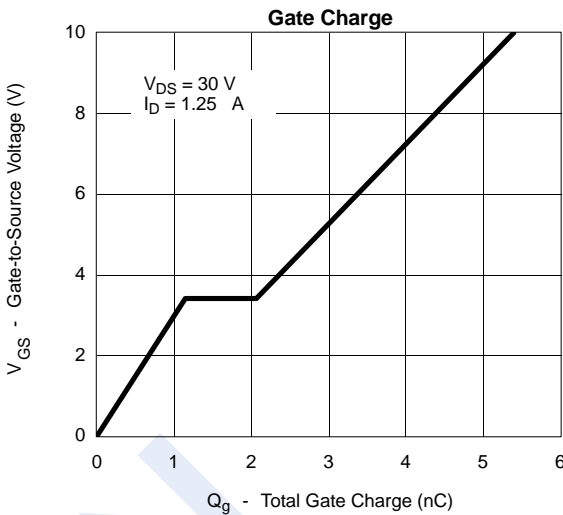
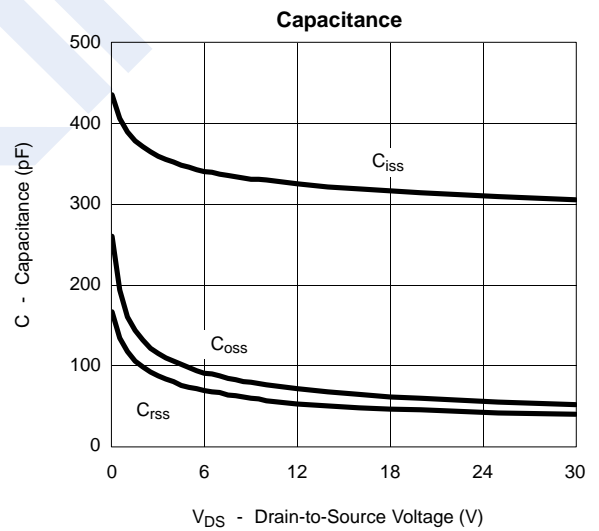
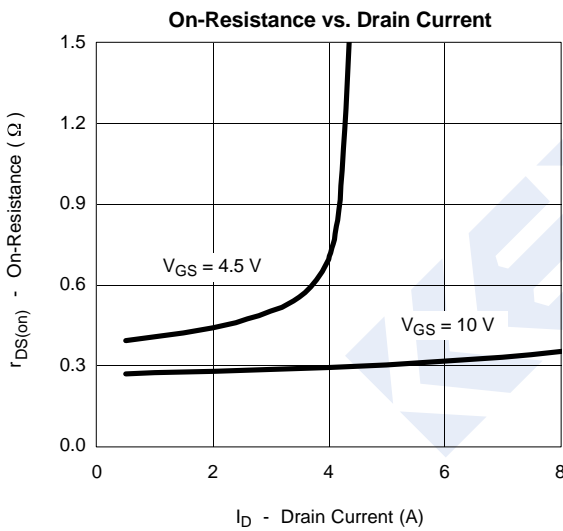
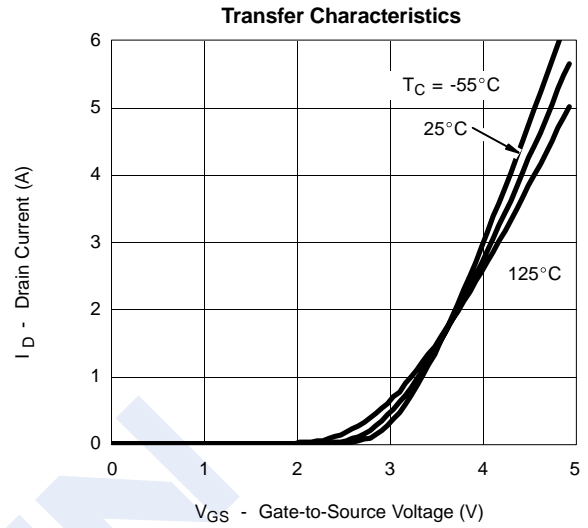
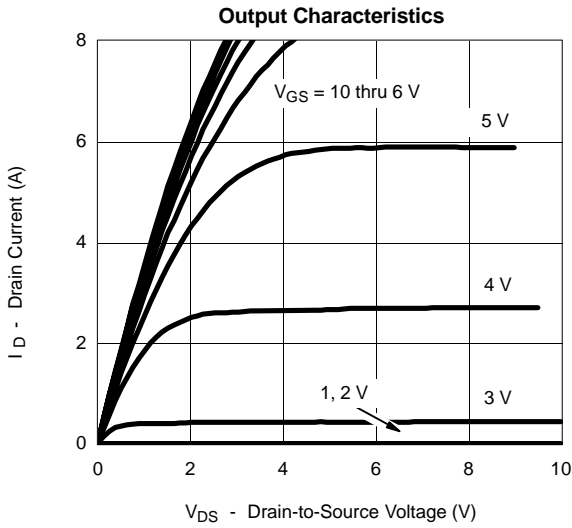
*1 Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%.

■ Marking

Marking	A9*
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P-Channel Enhancement MOSFET SI2309DS (KI2309DS)

■ Typical Characteristics

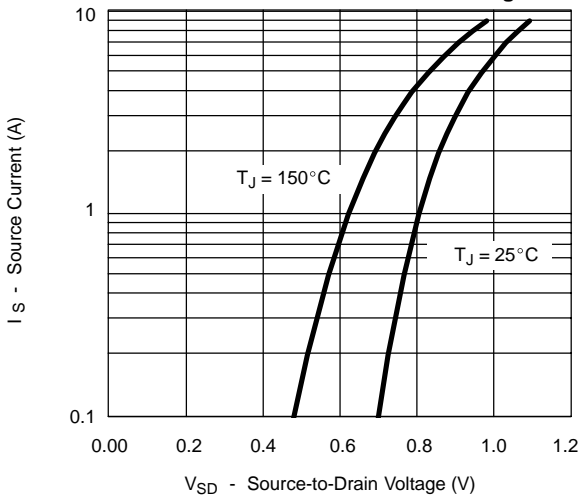


P-Channel Enhancement MOSFET

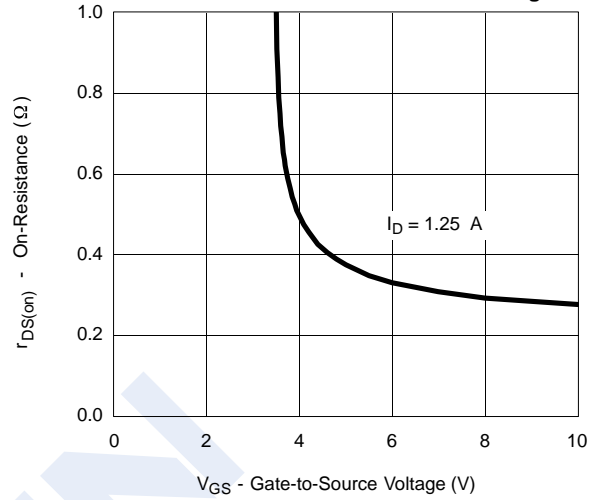
SI2309DS (KI2309DS)

■ Typical Characteristics

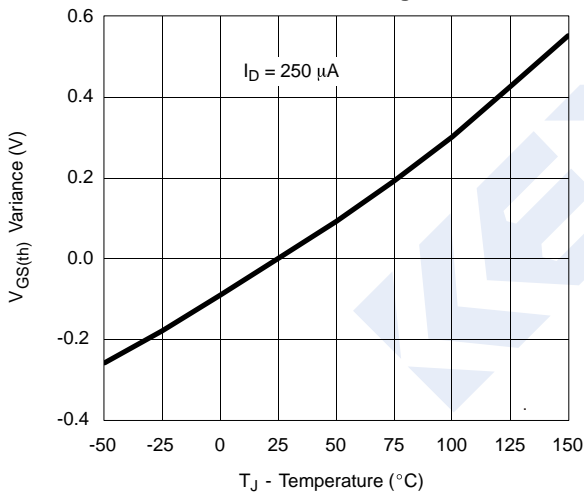
Source-Drain Diode Forward Voltage



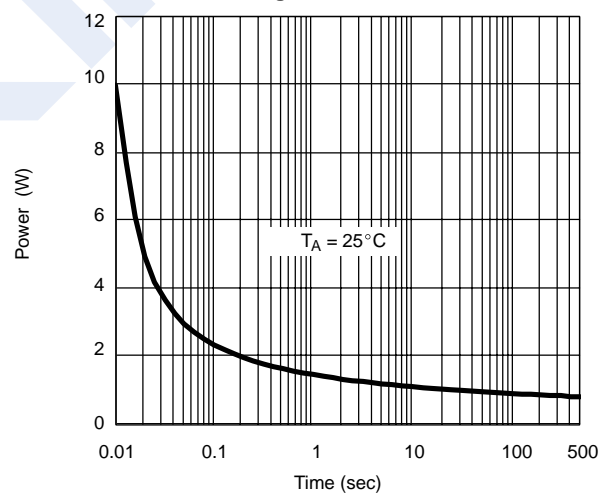
On-Resistance vs. Gate-to-Source Voltage



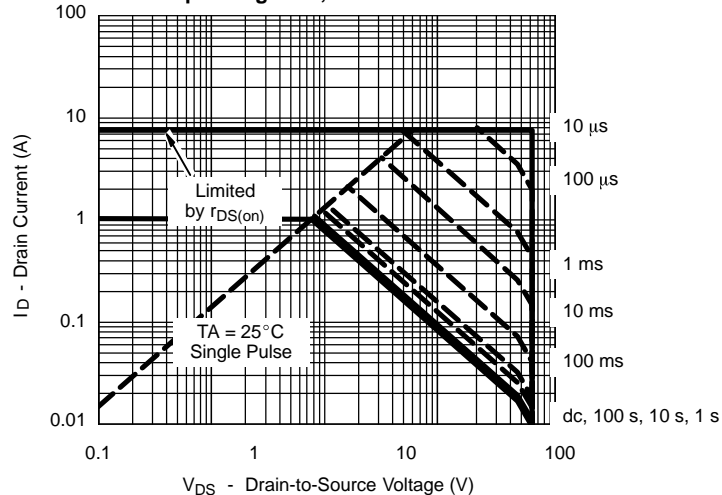
Threshold Voltage



Single Pulse Power



Safe Operating Area, Junction-to-Ambient



P-Channel Enhancement MOSFET

SI2309DS (KI2309DS)

■ Typical Characteristics

