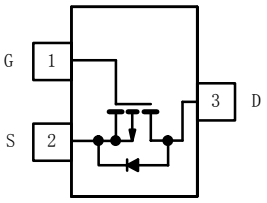
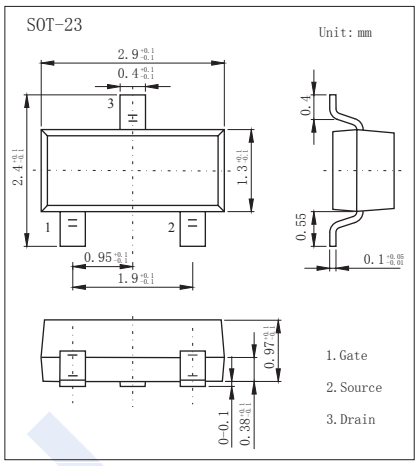
P-Channel Enhancement MOSFET

SI2325DS (KI2325DS)

■ Features

- V_{DS} (V) =-150V
- I_D =-0.69A (V_{GS} =-10V)
- $R_{DS(ON)}$ < 1.2Ω (V_{GS} =-10V)
- $R_{DS(ON)}$ < 1.3Ω (V_{GS} =-6V)





■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	5 sec	Steady State	Unit
Drain-Source Voltage	V_{DS}	-150		V
Gate-Source Voltage	V_{GS}	±20		
Continuous Drain Current Ta = 25℃	I_D	-0.69	-0.53	A
Ta = 70℃		-0.55	-0.43	
Pulsed Drain Current	I_{DM}	-1.6		
Single-Pluse Avalanche Current L=1.0mH	I_{AS}	4.5		
Single-Pulse Avalanche Energy L=1.0mH	E_{AS}	1.01		mJ
Power Dissipation Ta = 25℃	P_D	1.25	0.75	W
Ta = 70℃		0.8	0.48	
Thermal Resistance.Junction- to-Ambient t≤5 sec	R_{thJA}	100		℃/W
Steady State		166		
Thermal Resistance.Junction- to-Foot	R_{thJF}	50		
Junction Temperature	T_J	150		℃
Storage Temperature Range	T_{stg}	-55 to 150		

P-Channel Enhancement MOSFET

SI2325DS (KI2325DS)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-150			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-150V, V_{GS}=0V			-1	μA
		V_{DS}=-150V, V_{GS}=0V, T_J=55℃			-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=-250μA	-2.5		-4.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-0.5A		1.0	1.2	Ω
		V_{GS}=-6V, I_D=-0.5A		1.05	1.3	
On state drain current	$I_{D(ON)}$	V_{GS}=-10V, V_{DS}=-15V	-1.6			A
Forward Transconductance	g_{FS}	V_{DS}=-15V, I_D=-0.5A		2.2		S
Gate Resistance	R_g	f=1.0MHz		9		Ω
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-25V, f=1MHz *1		340	510	pF
Output Capacitance	C_{oss}			30		
Reverse Transfer Capacitance	C_{rss}			16		
Total Gate Charge	Q_g	V_{GS}=-10V, V_{DS}=-75V, I_D=-0.5A *1		7.7	12	nC
Gate Source Charge	Q_{gs}			1.5		
Gate Drain Charge	Q_{gd}			2.5		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=-10V, V_{DS}=-75V, R_L=75Ω, R_{GEN}=6Ω I_D=-1.0A *1		7	11	ns
Turn-On Rise Time	t_r			11	17	
Turn-Off DelayTime	$t_{d(off)}$			16	25	
Turn-Off Fall Time	t_f			11	17	
Body Diode Reverse Recovery Charge	Q_{rr}	IF = 0.5 A, di/dt = 100 A/ s		90	135	nC
Maximum Body-Diode Continuous Current	I_S	5 sec			-1.0	A
		Steady State			-0.6	
Diode Forward Voltage	V_{SD}	I_S=-1.0A,V_{GS}=0V		-0.7	-1.2	V

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

■ Marking

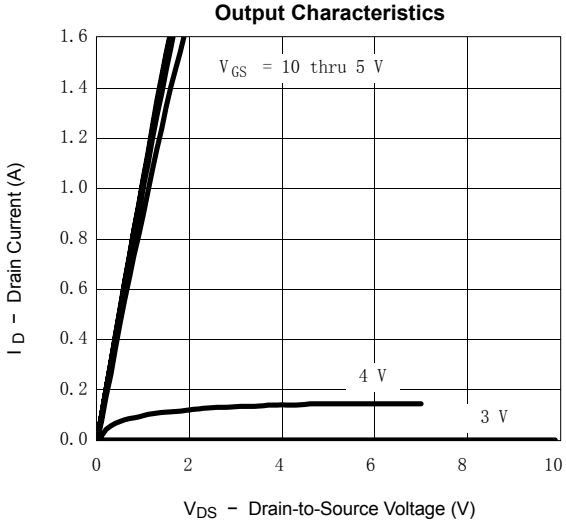
Marking	D5*

P-Channel Enhancement MOSFET

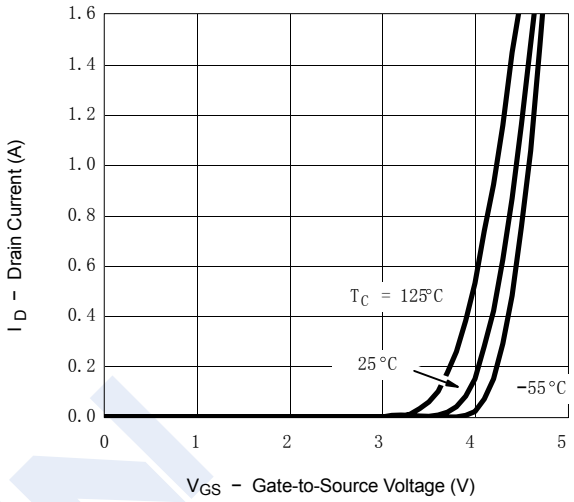
SI2325DS (KI2325DS)

■ Typical Characterisitics

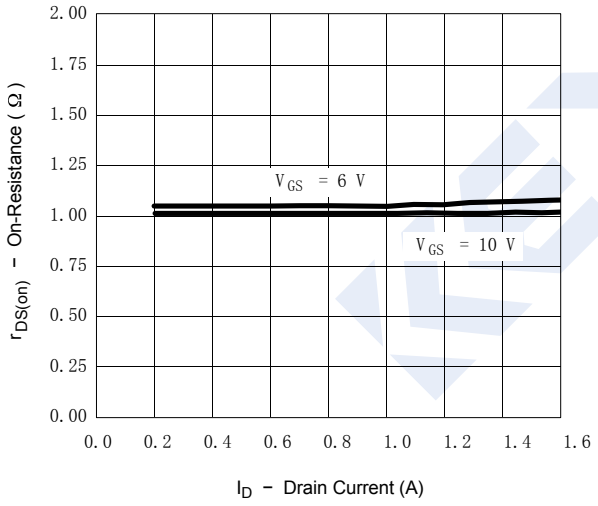
Output Characteristics



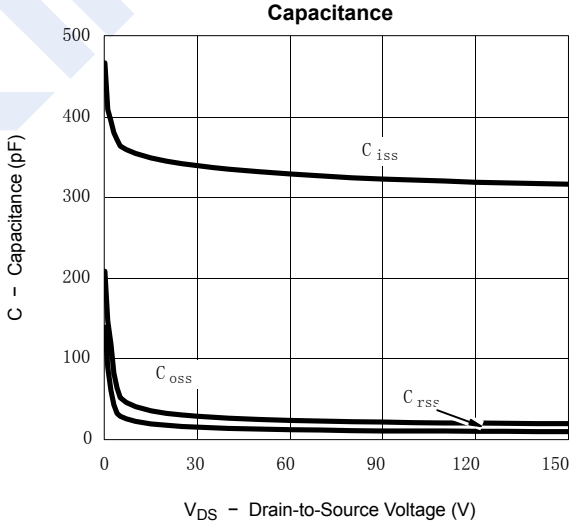
Transfer Characteristics



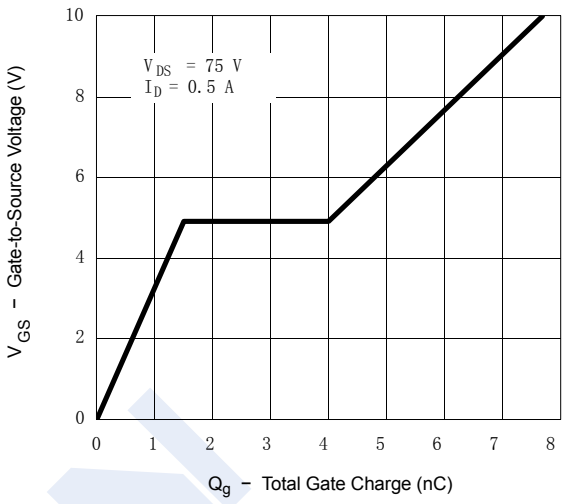
On-Resistance vs. Drain Current



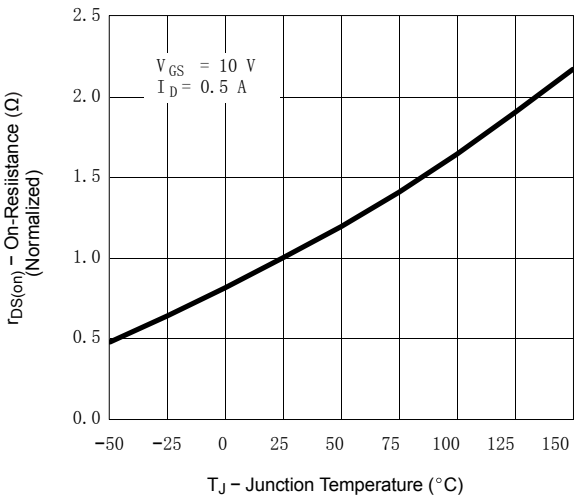
Capacitance



Gate Charge



On-Resistance vs. Junction Temperature

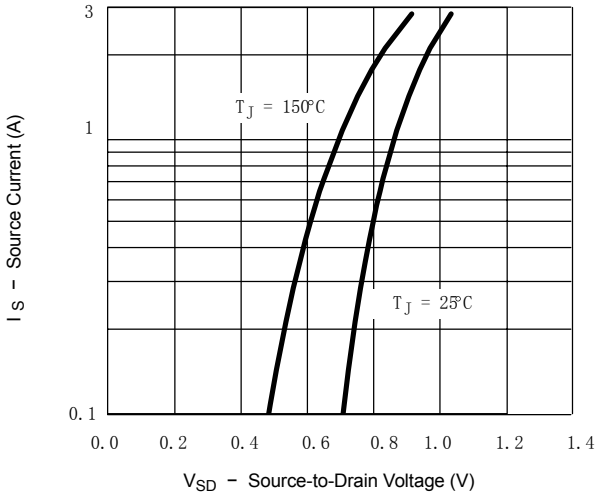


P-Channel Enhancement MOSFET

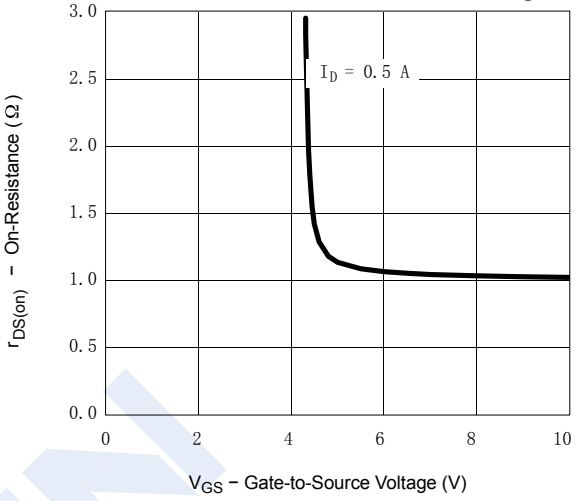
SI2325DS (KI2325DS)

■ Typical Characterisitics

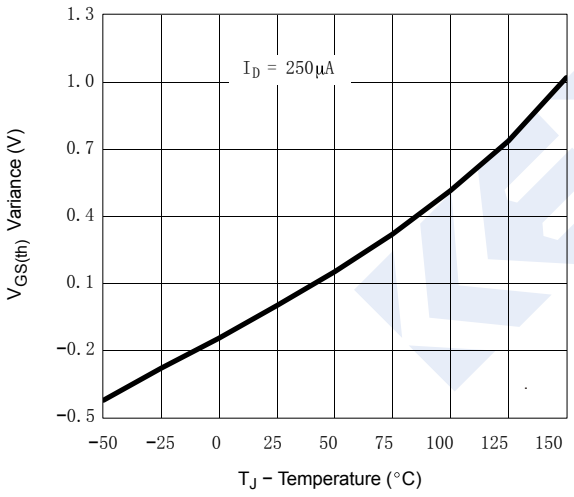
Source-Drain Diode Forward Voltage



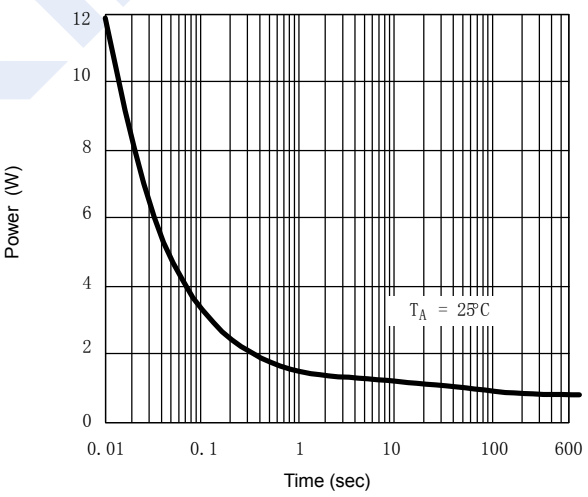
On-Resistance vs. Gate-to-Source Voltage



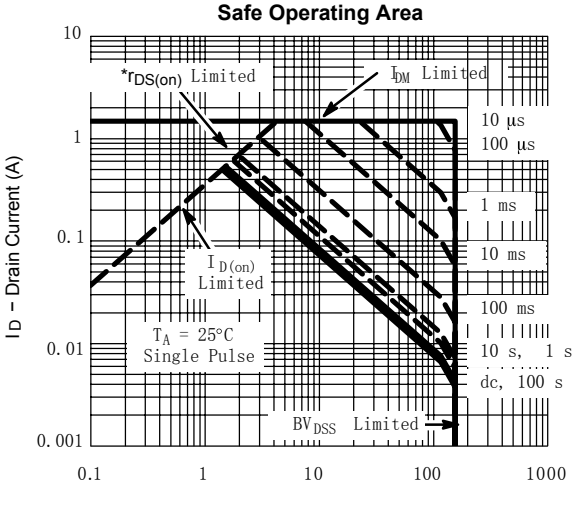
Threshold Voltage



Single Pulse Power



Safe Operating Area



*V_{GS} > minimum V_{GS} at which $r_{DS(on)}$ is specified

P-Channel Enhancement MOSFET

SI2325DS (KI2325DS)

■ Typical Characterisitics