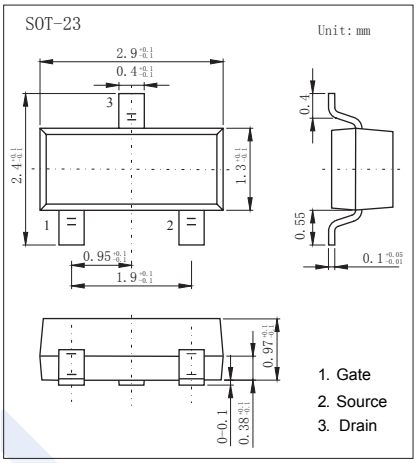
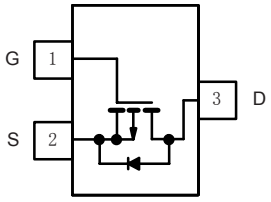
P-Channel MOSFET

SI2333DS (KI2333DS)



■ Features

- V_{DS} (V) =-12V
- I_D =-5.3 A (V_{GS} =-4.5V)
- $R_{DS(ON)}$ < 32mΩ (V_{GS} =-4.5V)
- $R_{DS(ON)}$ < 42mΩ (V_{GS} =-2.5V)
- $R_{DS(ON)}$ < 59mΩ (V_{GS} =-1.8V)



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	5s	Steady State	Unit
Drain-Source Voltage		V_{DS}	-12		V
Gate-Source Voltage		V_{GS}	±8		
Continuous Drain Current	TA = 25 °C	I_D	-5.3	-4.1	A
	TA = 70 °C		-4.2	-3.3	
Pulsed Drain Current		I_{DM}	-20		
Power Dissipation	TA = 25 °C	P_D	1.25	0.75	W
	TA = 70 °C		0.8	0.48	
Thermal Resistance.Junction- to-Ambient		R_{thJA}	100	166	℃/W
Thermal Resistance.Junction- to-Foot		R_{thJF}	-	50	
Junction Temperature		T_J	150		℃
Junction Storage Temperature Range		T_{stg}	-55 to 150		

P-Channel MOSFET

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-12			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-9.6V, V_{GS}=0V			-1	uA
		V_{DS}=-9.6V, V_{GS}=0V, T_J=55℃			-10	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±8V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-0.4		-1	V
Static Drain-Source On-Resistance (Note.1)	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-5.3A			32	mΩ
		V_{GS}=-2.5V, I_D=-4.6A			42	
		V_{GS}=-1.8V, I_D=-2A			59	
On state drain current (Note.1)	$I_{D(ON)}$	V_{GS}=-5V, V_{DS}=-4.5V	-20			A
Forward Transconductance (Note.1)	g_{FS}	V_{DS}=-5V, I_D=-5.3A		17		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-6V, f=1MHz		1100		pF
Output Capacitance	C_{oss}			390		
Reverse Transfer Capacitance	C_{rss}			300		
Total Gate Charge	Q_g	V_{GS}=-4.5V, V_{DS}=-6V, I_D=-5.3A		11.5	18	nC
Gate Source Charge	Q_{gs}			1.5		
Gate Drain Charge	Q_{gd}			3.2		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=-4.5V, V_{DS}=-6V, R_L=6Ω, R_G=6Ω, I_D=-1A		25	40	ns
Turn-On Rise Time	t_r			45	70	
Turn-Off DelayTime	$t_{d(off)}$			72	110	
Turn-Off Fall Time	t_f			60	90	
Maximum Body-Diode Continuous Current	I_S				-1	A
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V			-1.2	V

Note.1:Pulse test: PW ≤ 300 μs, duty cycle ≤ 2 %.

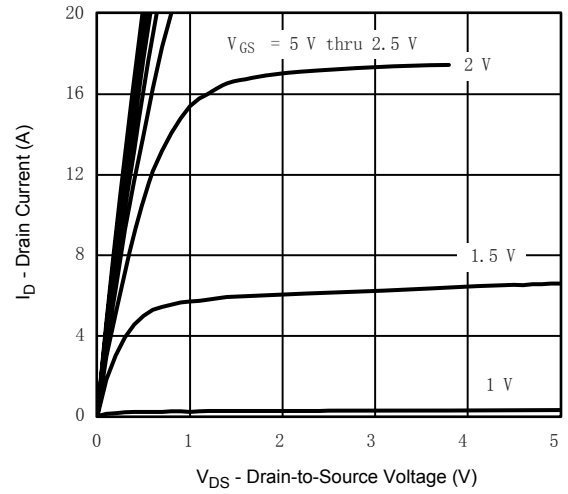
■ Marking

Marking	E3*

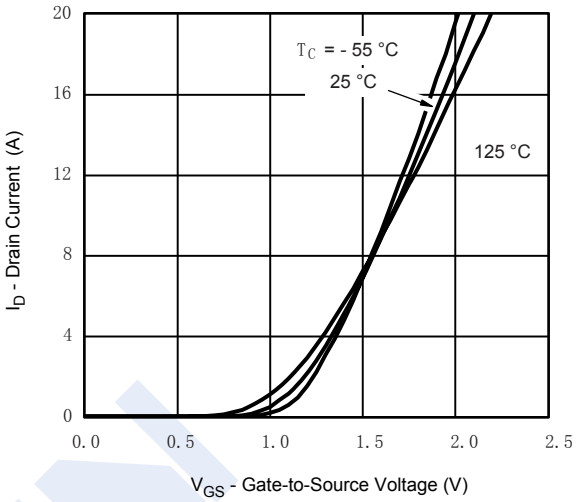
P-Channel MOSFET

SI2333DS (KI2333DS)

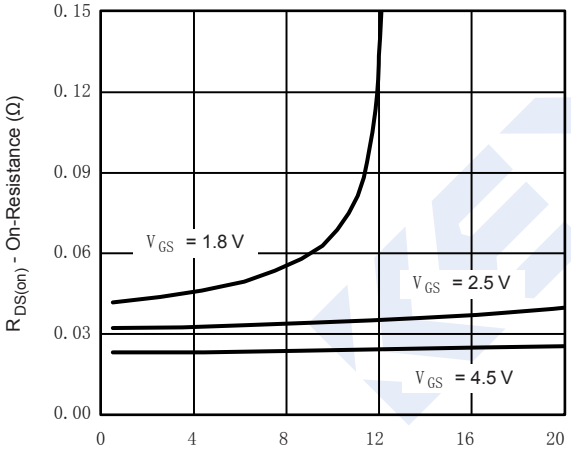
■ Typical Characterisitics



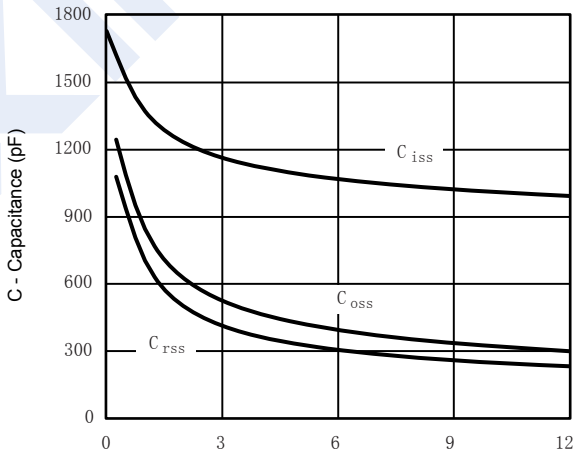
Output Characteristics



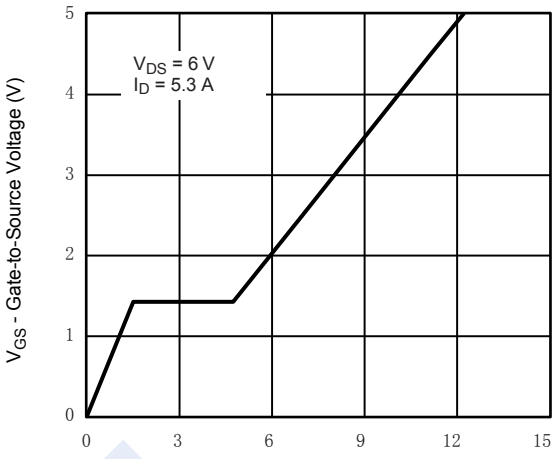
Transfer Characteristics



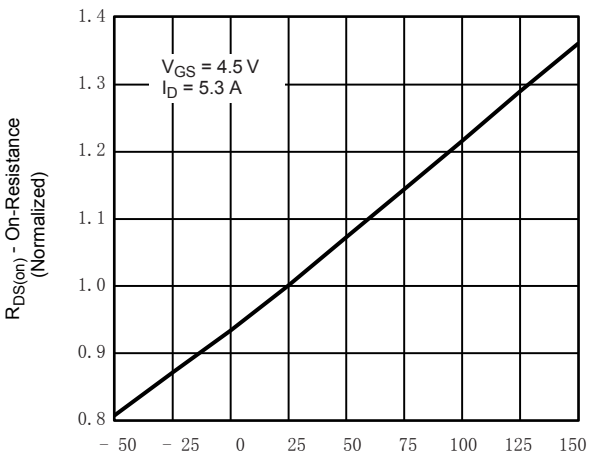
On-Resistance vs. Drain Current



Capacitance



Gate Charge

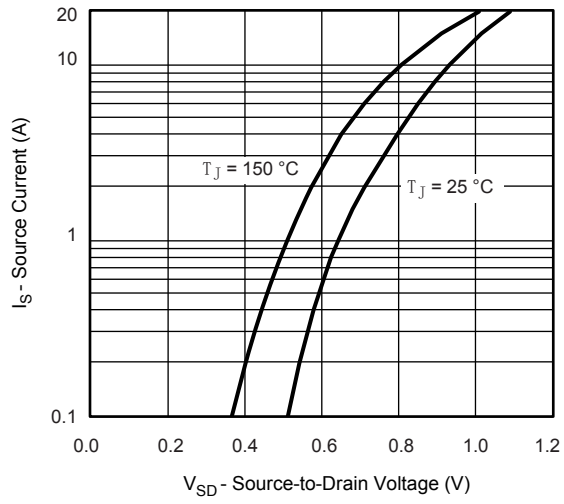


On-Resistance vs. Junction Temperature

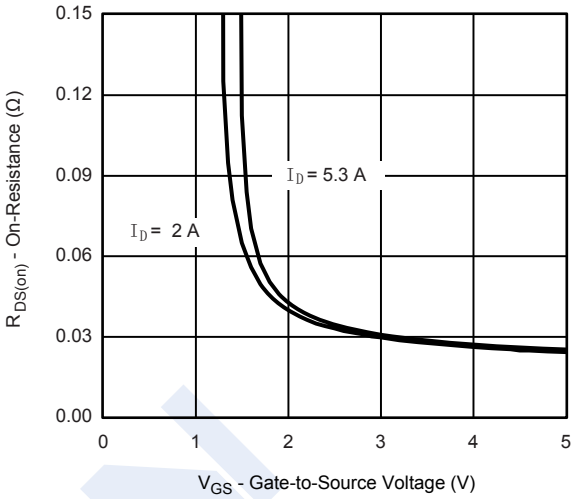
P-Channel MOSFET

SI2333DS (KI2333DS)

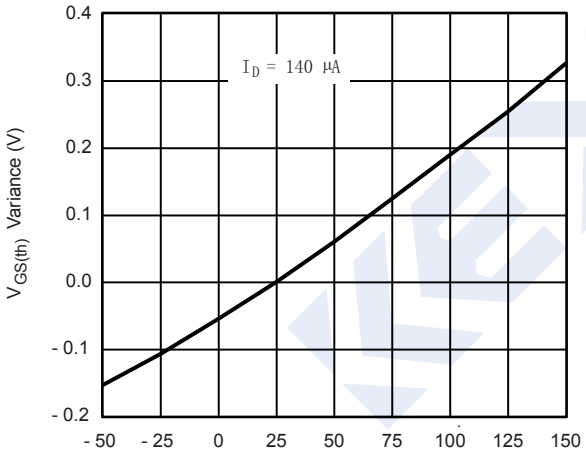
■ Typical Characterisitics



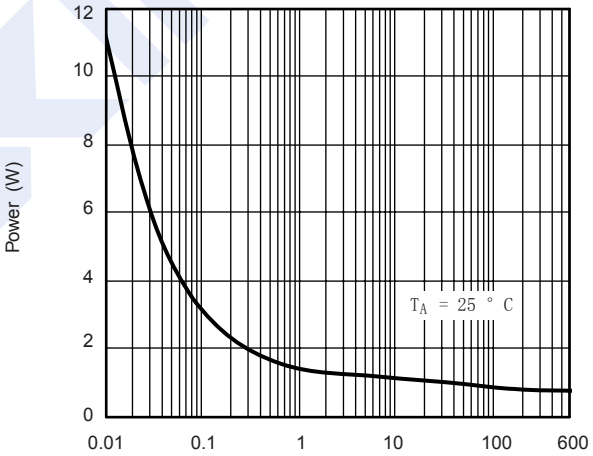
Source-Drain Diode Forward Voltage



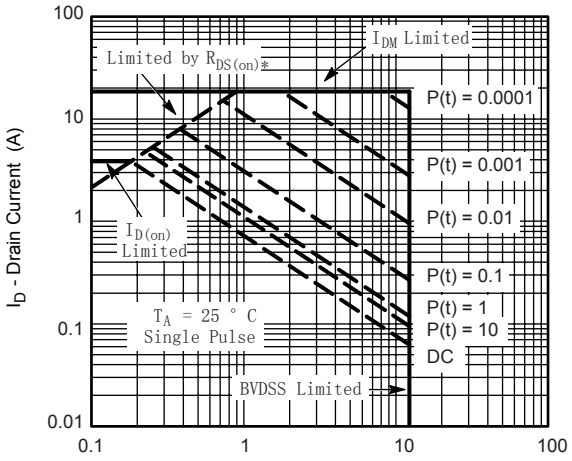
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power



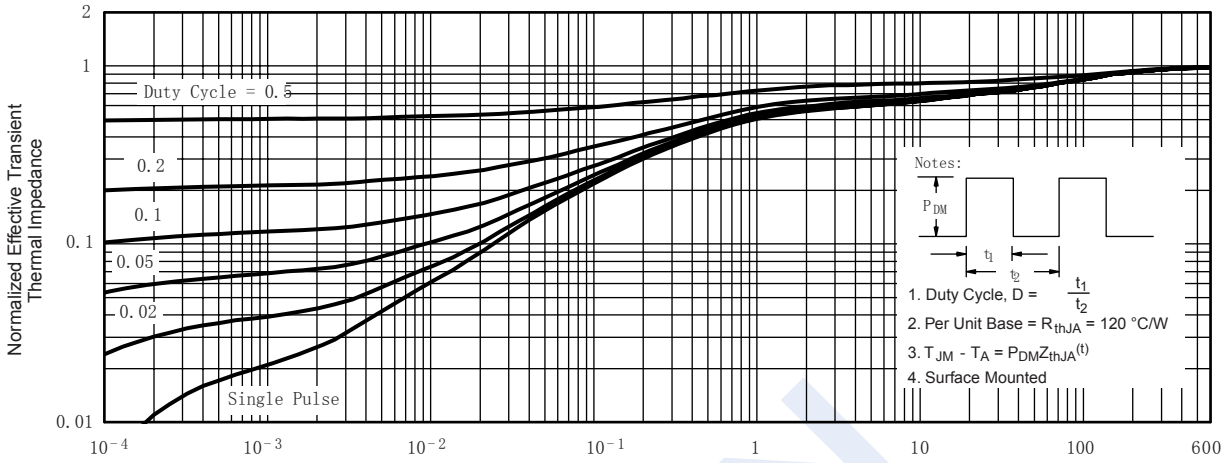
* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area

P-Channel MOSFET

SI2333DS (KI2333DS)

■ Typical Characterisitics



Normalized Thermal Transient Impedance, Junction-to-Ambient