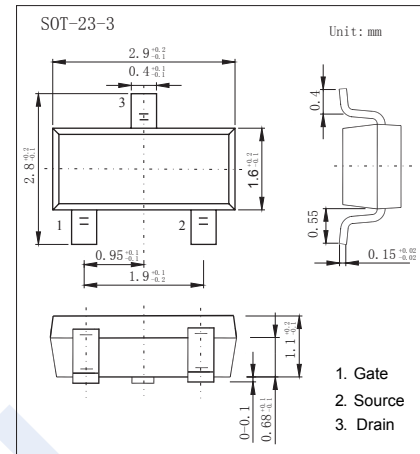
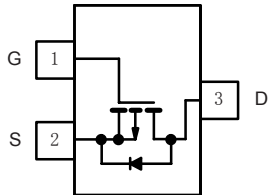


## P-Channel MOSFET

### SI2333DS (KI2333DS)

#### ■ Features

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



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

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

## P-Channel MOSFET

### SI2333DS (KI2333DS)

#### Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =-250 μA, V <sub>GS</sub> =0V	-12			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-9.6V, V <sub>GS</sub> =0V			-1	μA
		V <sub>DS</sub> =-9.6V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			-10	
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250 μA	-0.4		-1	V
Static Drain-Source On-Resistance (Note.1)	R <sub>DS(on)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-5.3A			32	mΩ
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-4.6A			42	
		V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-2A			59	
On state drain current (Note.1)	I <sub>D(ON)</sub>	V <sub>GS</sub> =-5V, V <sub>DS</sub> =-4.5V	-20			A
Forward Transconductance (Note.1)	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-5.3A		17		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-6V, f=1MHz		1100		pF
Output Capacitance	C <sub>oss</sub>			390		
Reverse Transfer Capacitance	C <sub>rss</sub>			300		
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-6V, I <sub>D</sub> =-5.3A		11.5	18	nC
Gate Source Charge	Q <sub>gs</sub>			1.5		
Gate Drain Charge	Q <sub>gd</sub>			3.2		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-6V, R <sub>L</sub> =6 Ω, R <sub>G</sub> =6 Ω, I <sub>D</sub> =-1A		25	40	ns
Turn-On Rise Time	t <sub>r</sub>			45	70	
Turn-Off DelayTime	t <sub>d(off)</sub>			72	110	
Turn-Off Fall Time	t <sub>f</sub>			60	90	
Maximum Body-Diode Continuous Current	I <sub>S</sub>				-1	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V			-1.2	V

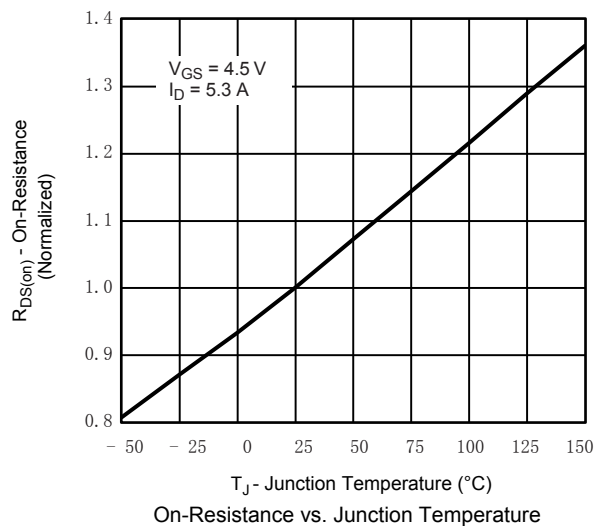
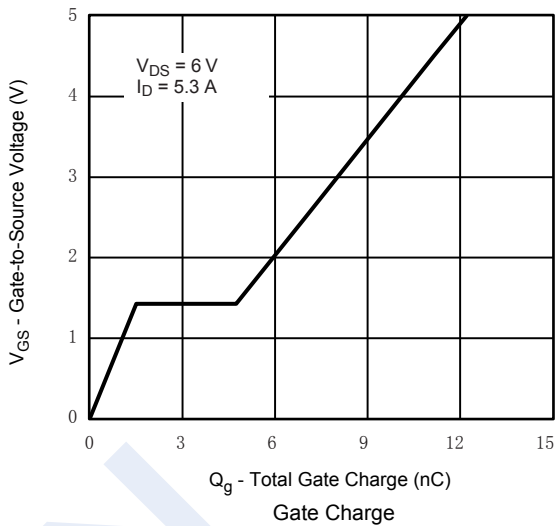
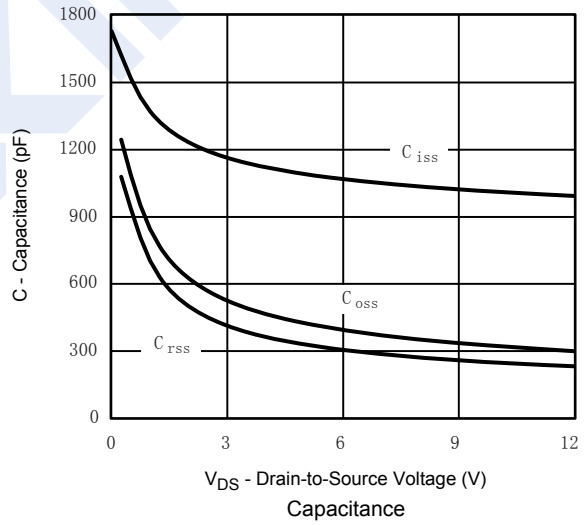
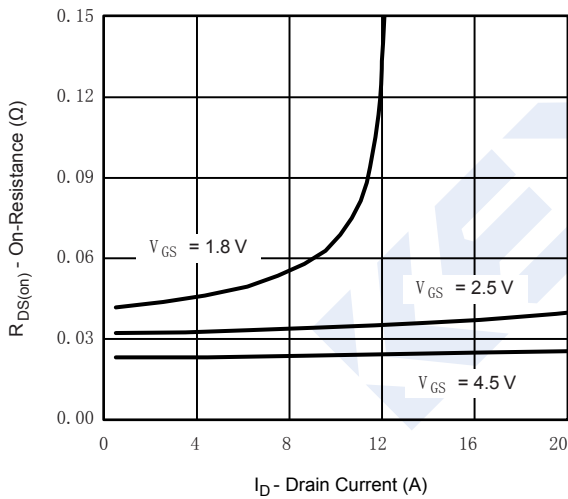
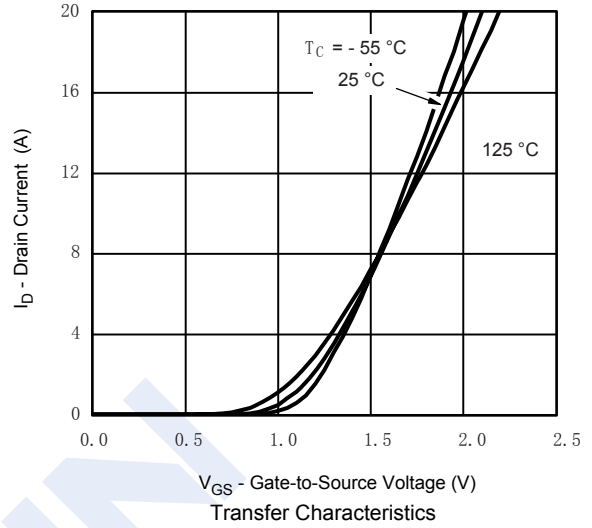
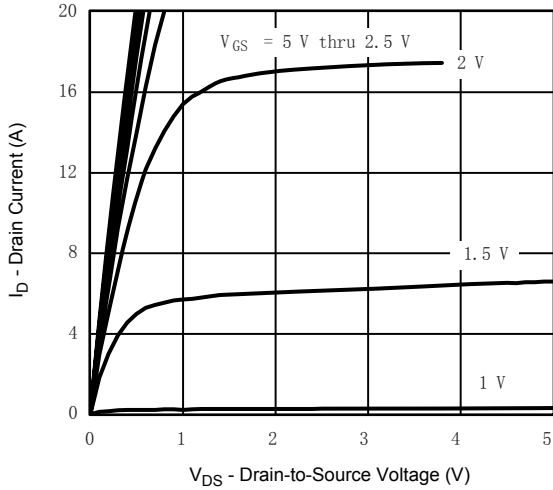
Note.1:Pulse test: PW ≤ 300 μs, duty cycle ≤ 2 %.

#### Marking

Marking	E3*
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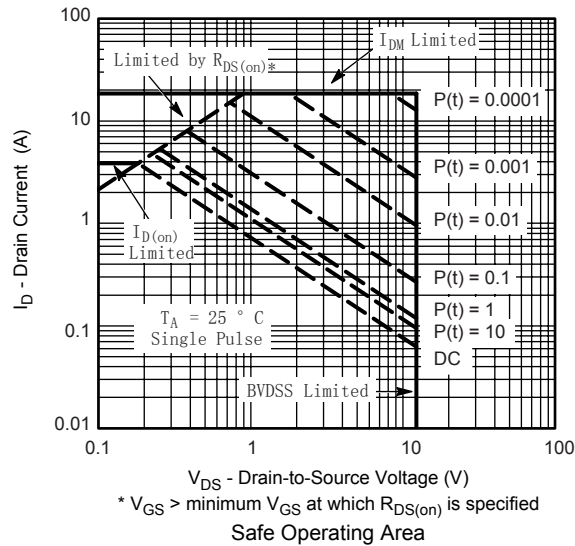
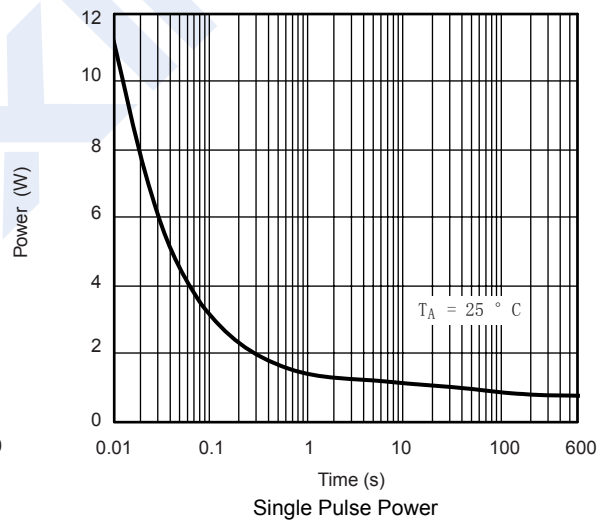
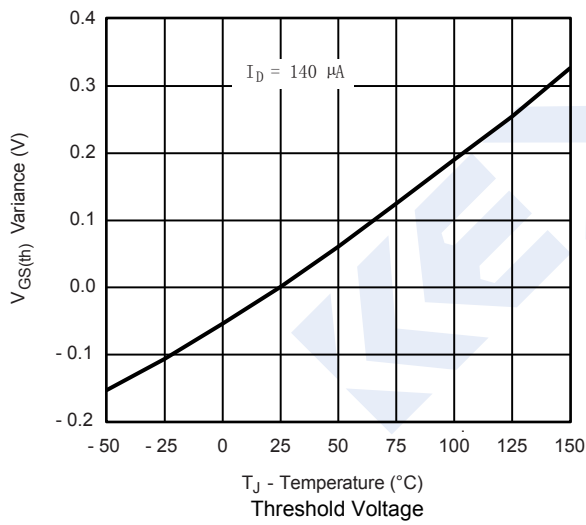
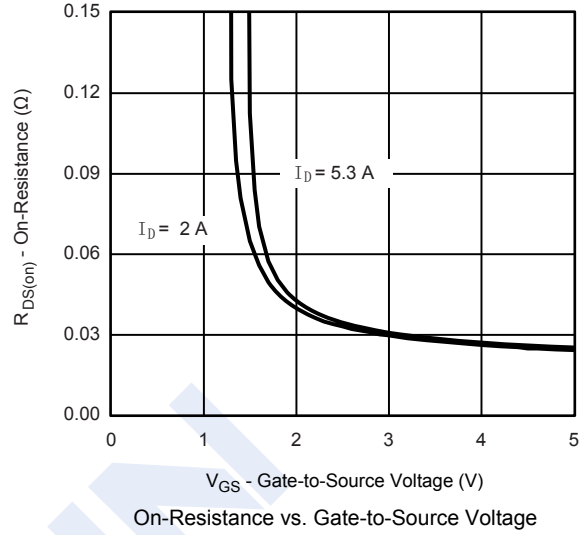
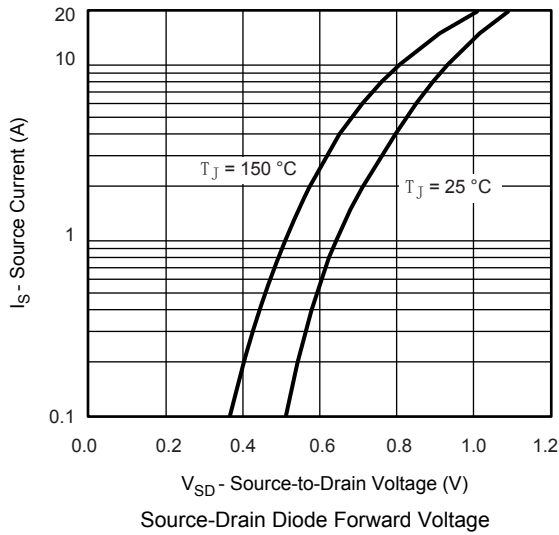
## P-Channel MOSFET SI2333DS (KI2333DS)

### Typical Characteristics



## P-Channel MOSFET SI2333DS (KI2333DS)

■ Typical Characteristics



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

### P-Channel MOSFET SI2333DS (KI2333DS)

■ Typical Characteristics

