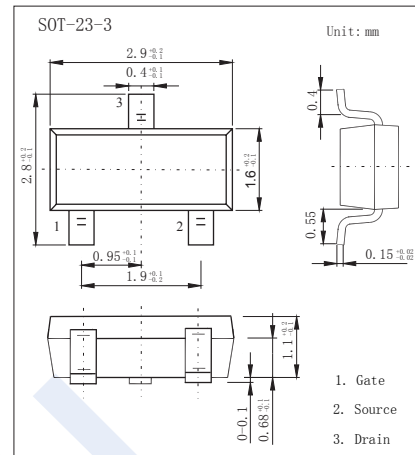
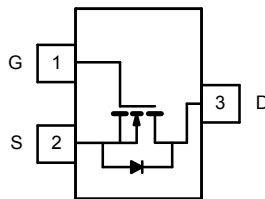


## N-Channel Enhancement MOSFET

### SI2304DS (KI2304DS)

#### ■ Features

- $V_{DS} (V) = 30V$
- $R_{DS(ON)} < 117m\Omega$  ( $V_{GS} = 10V$ )
- $R_{DS(ON)} < 190m\Omega$  ( $V_{GS} = 4.5V$ )



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current ( $T_J = 150^\circ C$ ) *1	$I_D$	$T_a = 25^\circ C$	A
		$T_a = 70^\circ C$	
Pulsed Drain Current *2	$I_{DM}$	10	
Power Dissipation	$P_D$	$T_a = 25^\circ C$	W
		$T_a = 70^\circ C$	
Thermal Resistance.Junction- to-Ambient *1	$R_{thJA}$	100	$^\circ C/W$
Thermal Resistance.Junction- to-Ambient *3		166	
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 Pulse width limited by maximum junction temperature.

\*3 Surface Mounted on FR4 Board.

## N-Channel Enhancement MOSFET

### SI2304DS (KI2304DS)

#### ■ 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	30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			0.5	μA
		V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, Ta=55°C			10	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μA	1.5		3	V
On-State Drain Current *1	I <sub>D(on)</sub>	V <sub>DS</sub> ≥ 4.5 V, V <sub>GS</sub> = 10 V	6			A
		V <sub>DS</sub> ≥ 4.5 V, V <sub>GS</sub> = 4.5 V	4			
Static Drain-Source On-Resistance *1	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =2.5A		92	117	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =2.0A		142	190	
Forward Transconductance *1	g <sub>FS</sub>	V <sub>DS</sub> =4.5V, I <sub>D</sub> =2.5A		4.6		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =15V, f=1MHz		240		pF
Output Capacitance	C <sub>oss</sub>			110		
Reverse Transfer Capacitance	C <sub>rss</sub>			17		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =5V, I <sub>D</sub> =2.5A		2.4	4	nC
Gate-Source Charge	Q <sub>gs</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =2.5A		4.5	10	
Gate Source Charge	Q <sub>gs</sub>			0.8		
Gate Drain Charge	Q <sub>gd</sub>			1.0		
Turn-On DelayTime	t <sub>d(on)</sub>	I <sub>D</sub> =1A, V <sub>DS</sub> =15V, R <sub>GEN</sub> =6Ω R <sub>L</sub> =15Ω, V <sub>GS</sub> =10V		8	20	ns
Turn-On Rise Time	t <sub>r</sub>			12	30	
Turn-Off DelayTime	t <sub>d(off)</sub>			17	35	
Turn-Off Fall Time	t <sub>f</sub>			8	20	
Maximum Body-Diode Continuous Current	I <sub>S</sub>				1.25	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1.25A, V <sub>GS</sub> =0V		0.77	1.2	V

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

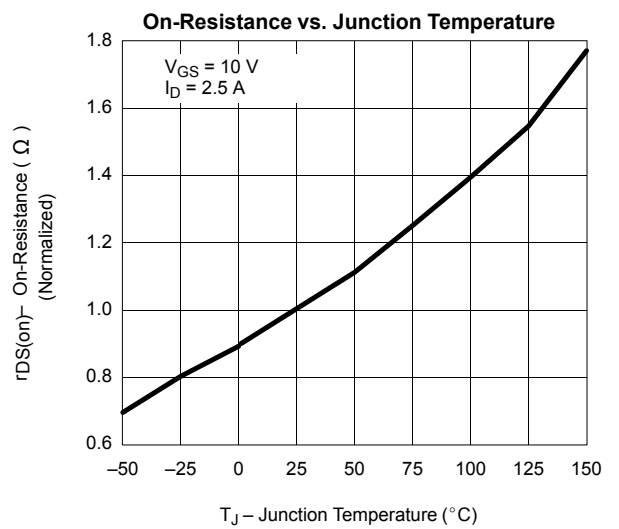
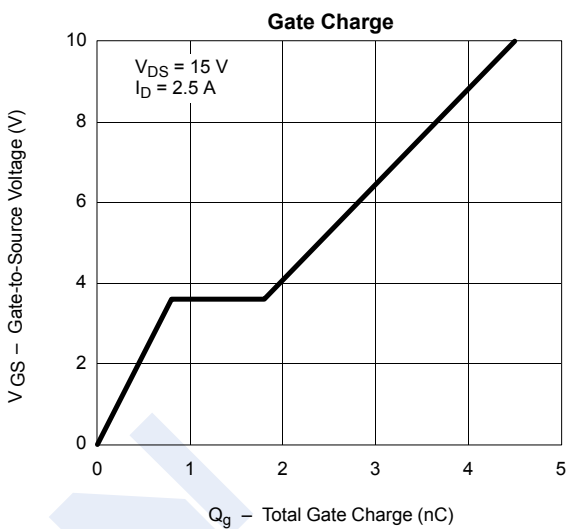
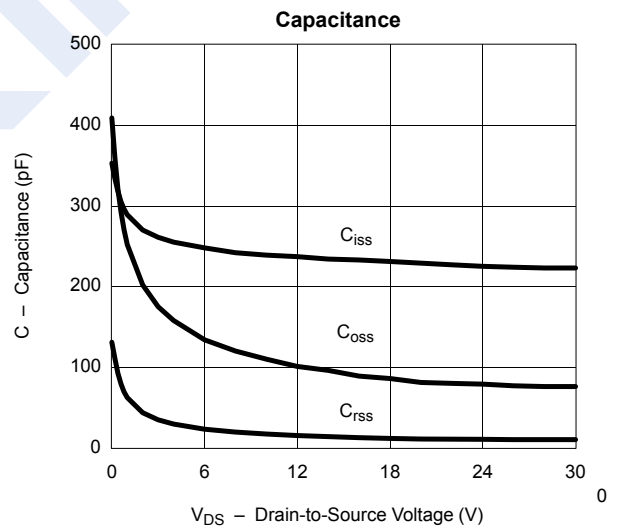
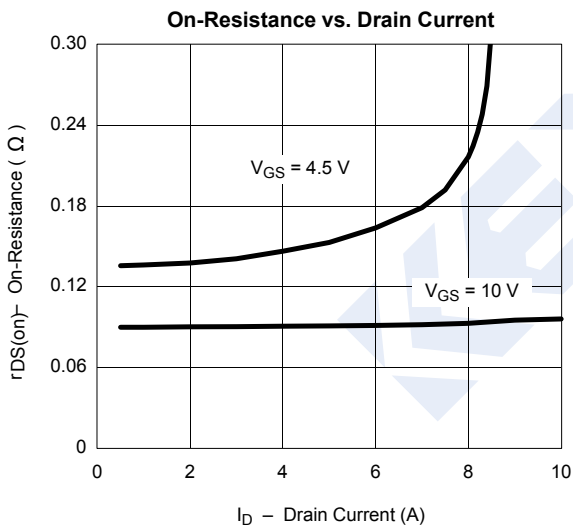
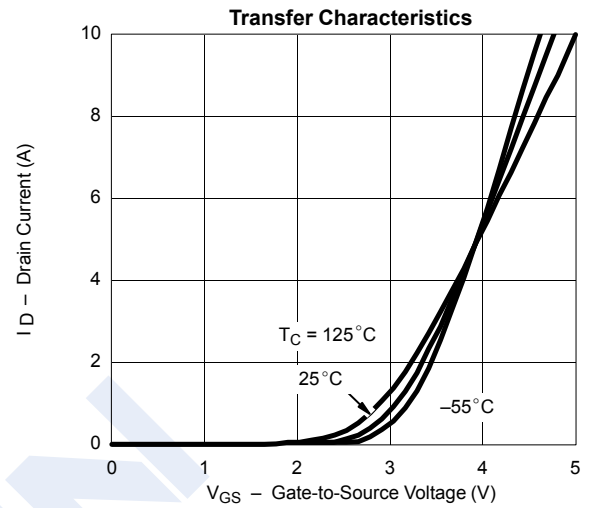
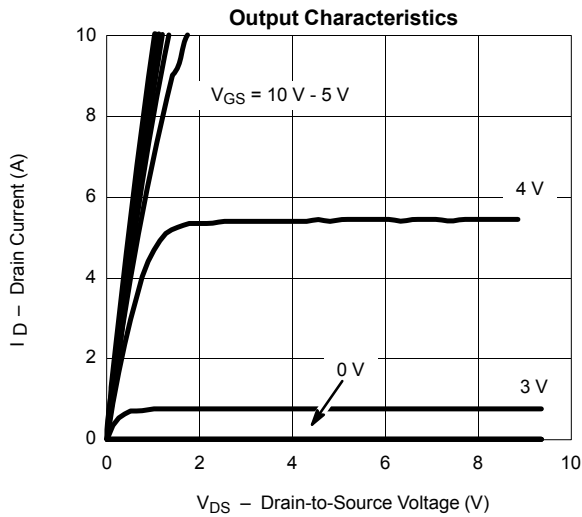
#### ■ Marking

Marking	A4*
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## N-Channel Enhancement MOSFET

### SI2304DS (KI2304DS)

■ Typical Characteristics



## N-Channel Enhancement MOSFET

### SI2304DS (KI2304DS)

■ Typical Characteristics

