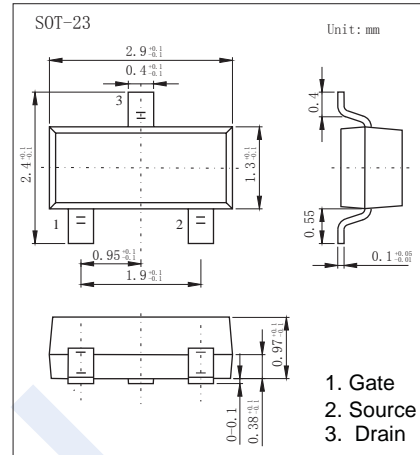
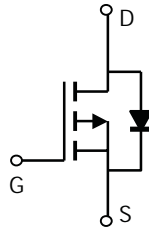


## P-Channel MOSFET

### KI2305DS

#### ■ Features

- $V_{DS} (V) = -20V$
- $R_{DS(ON)} < 0.052 \Omega (V_{GS} = -4.5V)$
- $R_{DS(ON)} < 0.071 \Omega (V_{GS} = -2.5V)$
- $R_{DS(ON)} < 0.108 \Omega (V_{GS} = -1.8V)$



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

Parameter	Symbol	Rating	Unit	
Drain-source voltage	$V_{DS}$	-20	V	
Gate-source voltage	$V_{GS}$	$\pm 10$	V	
Continuous drain current	$I_D$	$T_A = 25^\circ C$	-3.5	A
		$T_A = 70^\circ C$	-2.8	A
Pulsed drain current	$I_{DM}$	-12	A	
Power dissipation	$P_D$	$T_A = 25^\circ C$	1.25	W
		$T_A = 70^\circ C$	0.8	W
Thermal Resistance.Junction-to-Ambient	$R_{\theta JA}$	130	$^\circ C/W$	
Operating junction and storage temperature range	$T_j, T_{stg}$	-55 to +150	$^\circ C$	

## KI2305DS

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{DSS}$	$V_{GS} = 0\text{ V}, I_D = -250\mu\text{A}$	-20			V
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.45		-0.8	V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = -20\text{ V}, V_{GS} = 0\text{ V}$			-1	$\mu\text{A}$
		$V_{DS} = -20\text{ V}, V_{GS} = 0\text{ V}, T_J = 55\text{ }^\circ\text{C}$			-10	
Gate-body leakage	$I_{GSS}$	$V_{DS} = 0\text{ V}, V_{GS} = \pm 10\text{ V}$			$\pm 100$	nA
Drain-source on-state resistance	$r_{DS(on)}$	$V_{GS} = -4.5\text{ V}, I_D = -3.5\text{ A}$		0.044	0.052	$\Omega$
		$V_{GS} = -2.5\text{ V}, I_D = -3.0\text{ A}$		0.060	0.071	
		$V_{GS} = -2\text{ V}, I_D = -2.0\text{ A}$		0.087	0.108	
On-state drain current	$I_{D(on)}$	$V_{DS} \leq -5\text{ V}, V_{GS} = -4.5\text{ V}$	-6			A
		$V_{DS} \leq -5\text{ V}, V_{GS} = -2.5\text{ V}$	-3			
Forward transconductance	$g_{fs}$	$V_{DS} = -5\text{ V}, I_D = -3.5\text{ A}$		8.5		S
Input capacitance *	$C_{iss}$	$V_{DS} = -10\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$		1245		$\text{pF}$
Output capacitance *	$C_{oss}$			375		
Reverse transfer capacitance *	$C_{rss}$			210		
Total gate charge *	$Q_g$	$V_{DS} = -10\text{ V}, V_{GS} = -4.5\text{ V}, I_D = -3.5\text{ A}$		10	15	nC
Gate-source charge *	$Q_{gs}$			2		
Gate-drain charge *	$Q_{gd}$			2		
Turn-on Delay time	$t_{d(on)}$	$V_{DD} = -5\text{ V}, R_L = 4\ \Omega, I_D = -1\text{ A}, V_{GEN} = -4.5\text{ V}, R_G = 6\ \Omega$		13	20	ns
Turn-on Rise time	$t_r$			25	40	
Turn-off Dealy time	$t_{d(off)}$			55	80	
Turn-off Fall time	$t_f$			19	35	
Continuous source current (diode conduction) *	$I_S$			-1.6		A
Diode forward voltage	$V_{SD}$	$I_S = -1.6\text{ A}, V_{GS} = 0\text{ V}$			-1.2	V

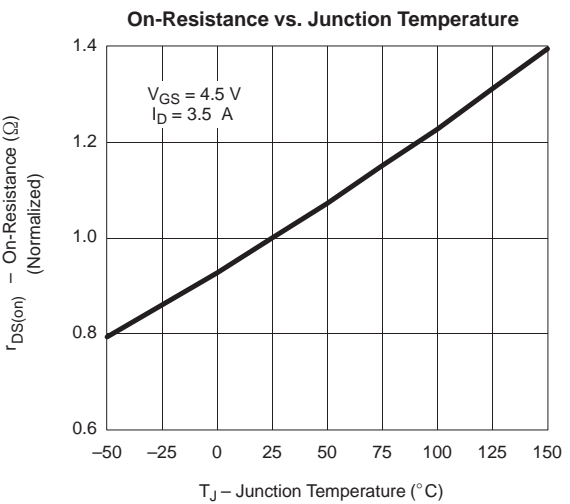
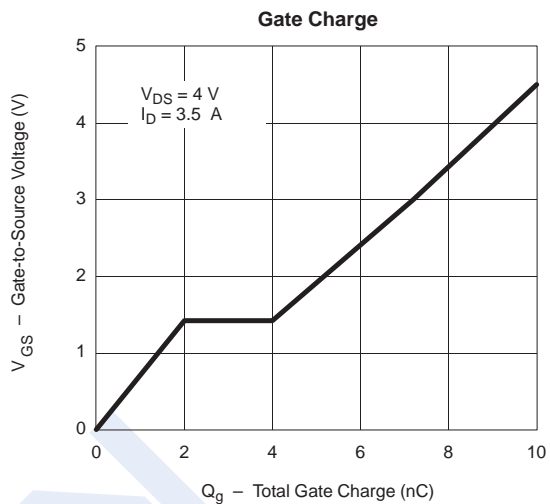
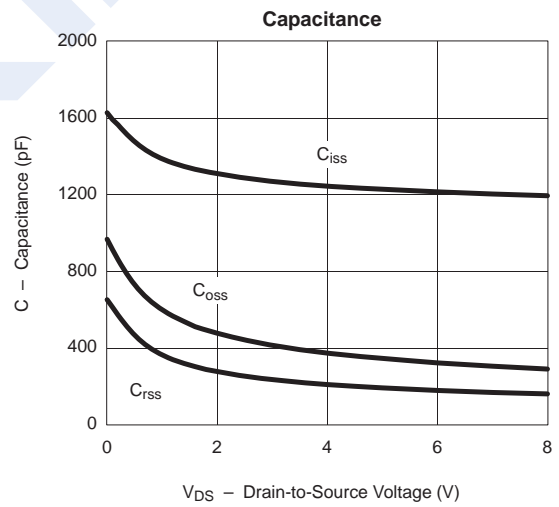
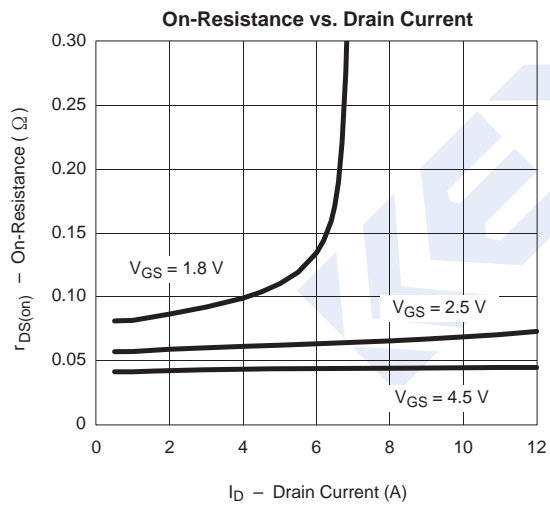
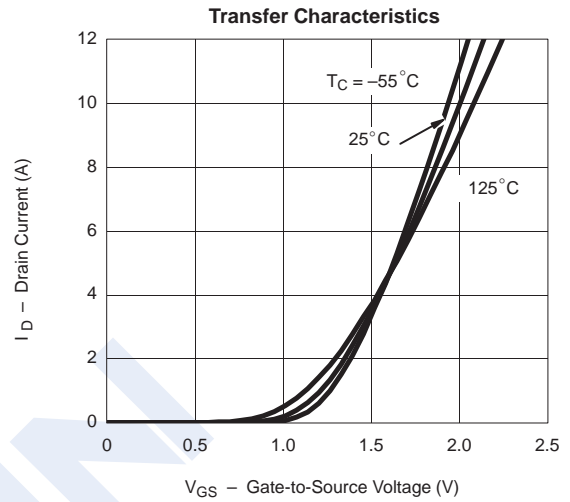
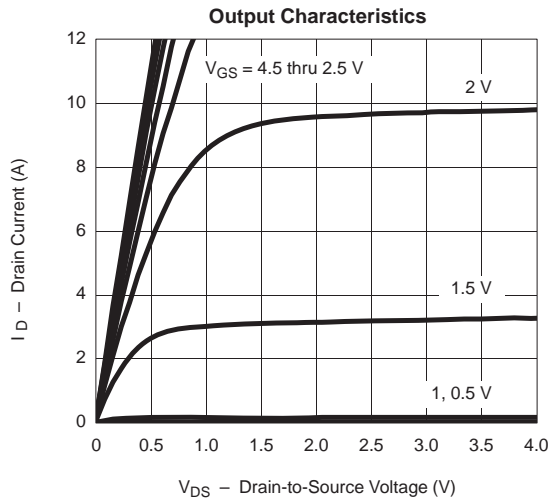
\* Pulse test:  $PW \leq 300\ \mu\text{s}$  duty cycle  $\leq 2\%$ .

## ■ Marking

Marking	A5*
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SI2305DS (KI2305DS)

Typical Characteristics



# SI2305DS (KI2305DS)

## Typical Characteristics

