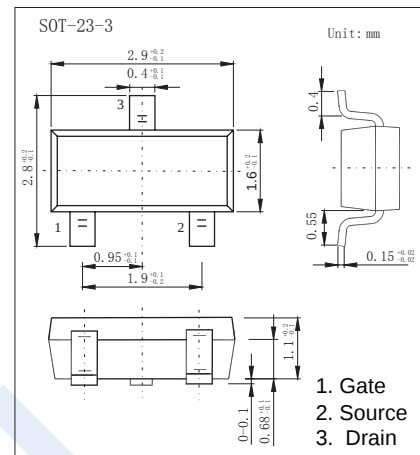
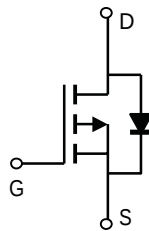


P-Channel MOSFET

SI2305

■ 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}	± 10	V
Continuous drain current $T_A = 25^\circ C$ $T_A = 70^\circ C$	I_D	-3.5 -2.8	A
Pulsed drain current	I_{DM}	-12	A
Power dissipation $T_A = 25^\circ C$ $T_A = 70^\circ C$	P_D	1.25 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	$^\circ C$

SI2305

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	V_{DS}	$V_{GS} = 0\text{ V}, I_D = -250\mu\text{A}$	-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	μA
		$V_{DS} = -20\text{ V}, V_{GS} = 0\text{ V}, T_J = 55^\circ\text{C}$			-10	
Gate-body leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 10\text{ V}$			± 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	Ω
		$V_{GS} = -2.5\text{ V}, I_D = -3.0\text{ A}$		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		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 Delay 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

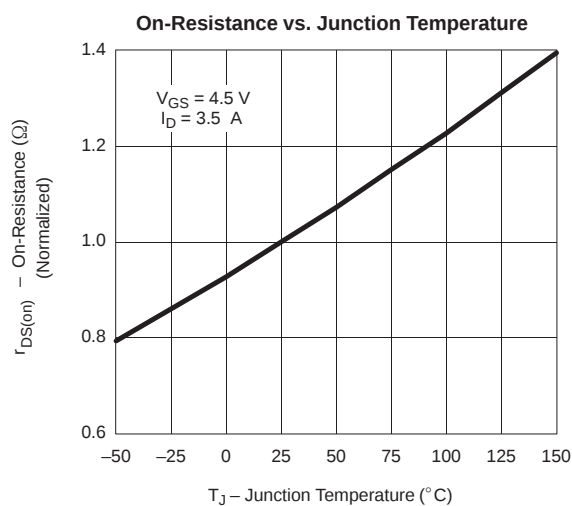
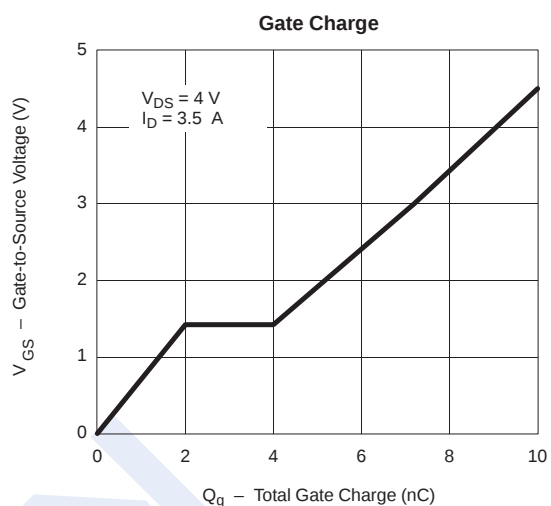
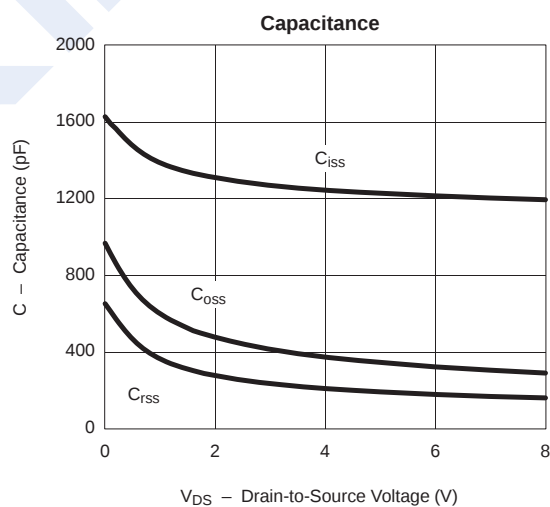
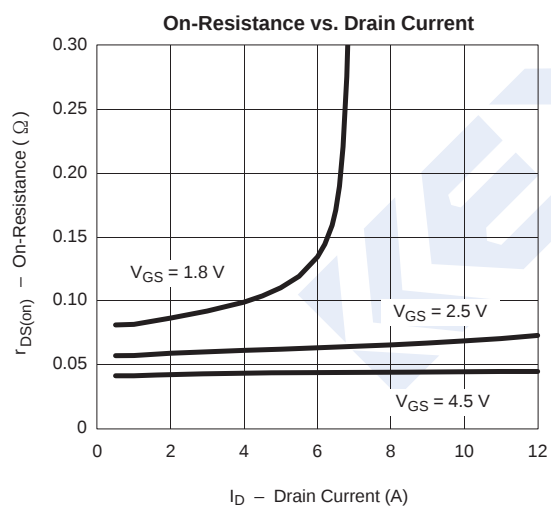
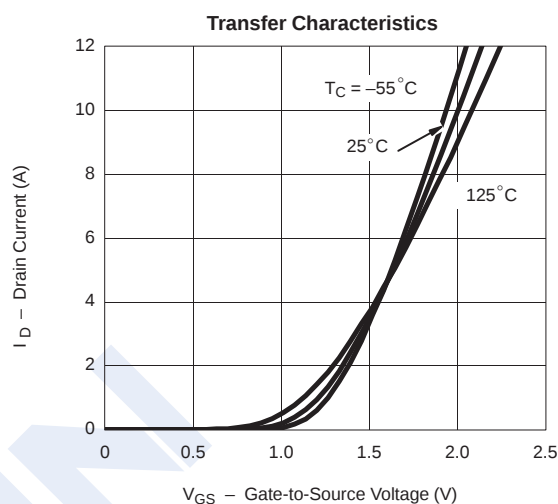
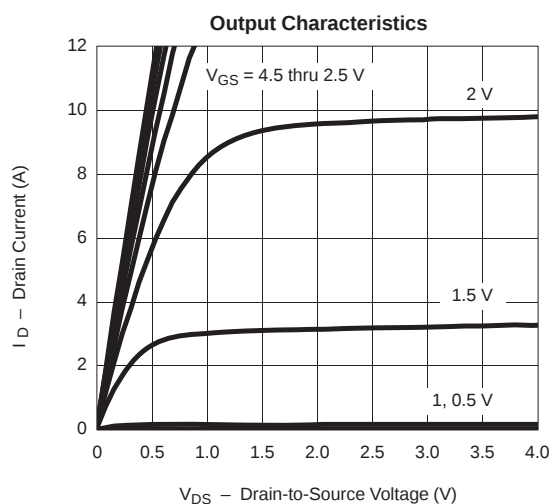
* Pulse test: $PW \leq 300\mu\text{s}$ duty cycle $\leq 2\%$.

■ Marking

Marking	A5SHB
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SI2305

■ Typical Characteristics



SI2305

■ Typical Characteristics

