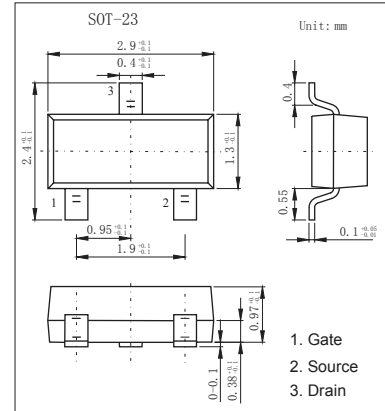
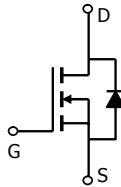


**N-Channel 30-V (D-S) MOSFET**

**SI2306**

■ Features

- $R_{DS(ON)} < 57\text{m}\Omega$  ( $V_{GS} = -10\text{V}$ )
- $R_{DS(ON)} < 94\text{m}\Omega$  ( $V_{GS} = -4.5\text{V}$ )



■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-source voltage	$V_{DS}$	30	V
Gate-source voltage	$V_{GS}$	$\pm 20$	V
Continuous drain current ( $T_J = 150^\circ\text{C}$ )*1,2 $T_A = 25^\circ\text{C}$ $T_A = 70^\circ\text{C}$	$I_D$	3.5 2.8	A
Pulsed drain current	$I_{DM}$	16	A
Continuous source current (diode conduction) *1,2	$I_S$	1.25	A
Maximum Power dissipation *1,2 $T_A = 25^\circ\text{C}$ $T_A = 70^\circ\text{C}$	$P_D$	1.25 0.8	W
Operating junction and storage temperature range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$
Maximum Junction to Ambienta	$R_{thJA}$	$t \leq 5$ sec	100
		Steady State	130

\*1 Surface Mounted on FR4 Board.

\*2  $t \leq 5$  sec



炬芯微  
XUANXINWEI

SMD Type

MOSFET

SI2306

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\text{ }\mu\text{A}$	30			V
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu\text{A}$	1		3	
Gate-body leakage	$I_{GSS}$	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$			$\pm 100$	nA
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}$			0.5	uA
		$V_{DS} = 30\text{ V}, V_{GS} = 0\text{ V}, T_J = 55\text{ }^\circ\text{C}$			10	
On-state drain current	$I_{D(on)}$	$V_{DS} \geq 4.5\text{ V}, V_{GS} = 10\text{ V}$	6			A
		$V_{DS} \geq 4.5\text{ V}, V_{GS} = 4.5\text{ V}$	4			
Drain-source on-state resistance	$r_{DS(on)}$	$V_{GS} = 10\text{ V}, I_D = 3.5\text{ A}$		0.046	0.057	$\Omega$
		$V_{GS} = 4.5\text{ V}, I_D = 2.8\text{ A}$		0.070	0.094	
Forward transconductance	$g_{fs}$	$V_{DS} = 4.5\text{ V}, I_D = 3.5\text{ A}$		6.9		S
Diode forward voltage	$V_{SD}$	$I_S = 1.25\text{ A}, V_{GS} = 0\text{ V}$		0.8	1.2	V
gate charge *	$Q_g$	$V_{DS} = 15\text{ V}, V_{GS} = 5\text{ V}, I_D = 3.5\text{ A}$		4.2	7	nC
Total gate charge *	$Q_{gt}$	$V_{DS} = 15\text{ V}, V_{GS} = 10\text{ V}, I_D = 3.5\text{ A}$		8.5	20	nC
Gate-source charge *	$Q_{gs}$			1.9		
Gate-drain charge *	$Q_{gd}$			1.35		
Gate Resistance	$R_g$			0.5		
Input capacitance *	$C_{iss}$	$V_{DS} = 15\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$		555		pF
Output capacitance *	$C_{oss}$			120		
Reverse transfer capacitance *	$C_{rss}$			60		
Turn-on time	$t_{d(on)}$		$V_{DD} = 15\text{ V}, R_L = 15\text{ }\Omega,$ $I_D = 1\text{ A}, V_{GEN} = -10\text{ V}, R_G = 6\text{ }\Omega$		9	
	$t_r$			7.5	18	
Turn-off time	$t_{d(off)}$			17	35	
	$t_f$			5.2	12	

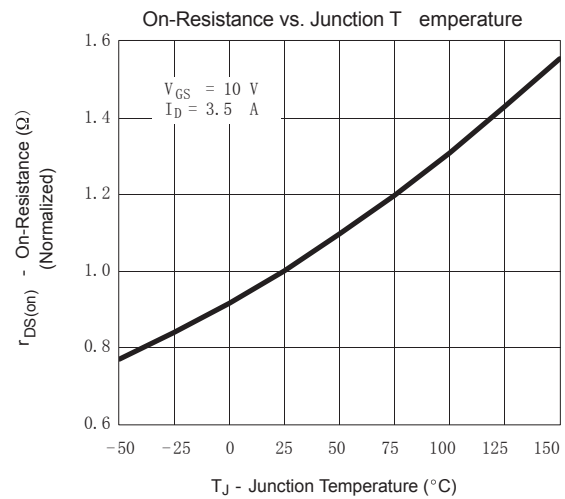
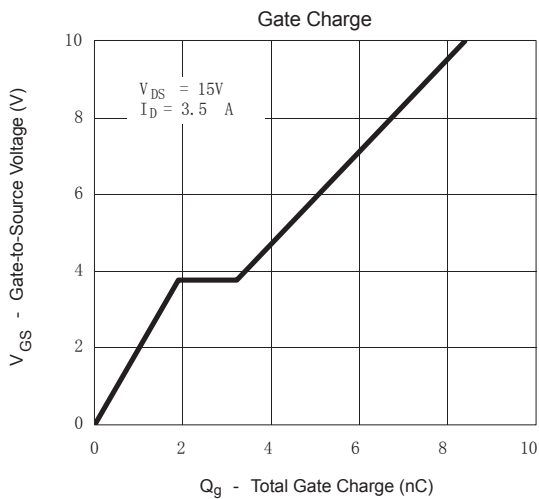
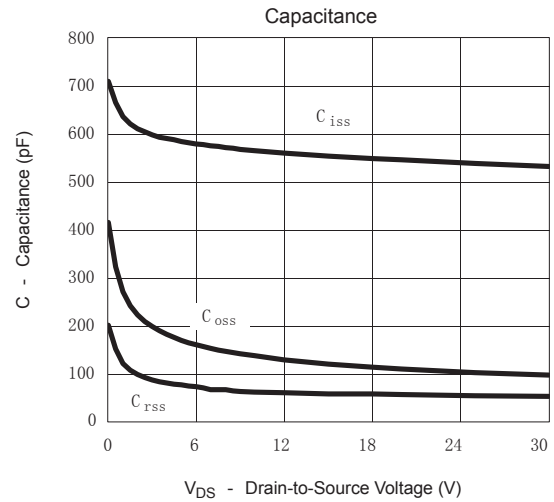
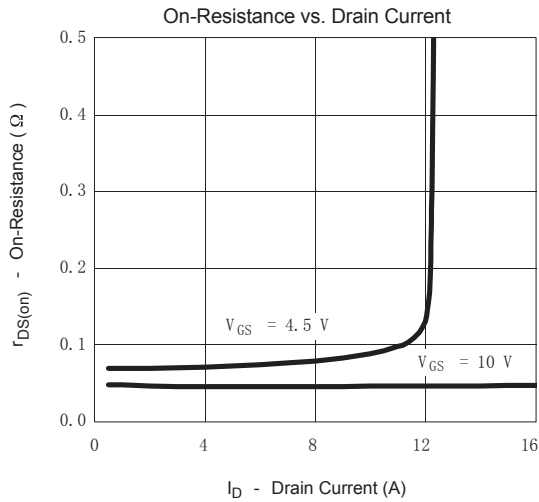
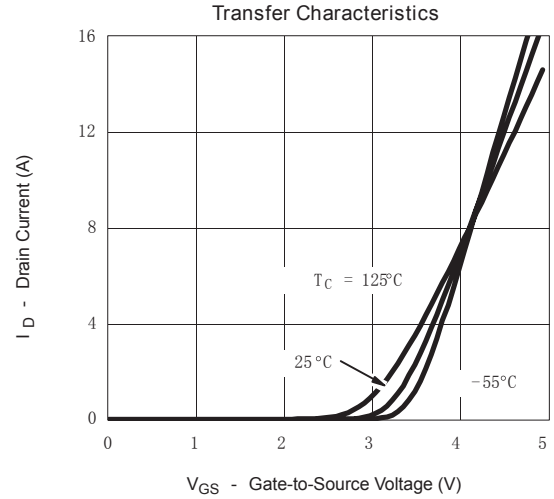
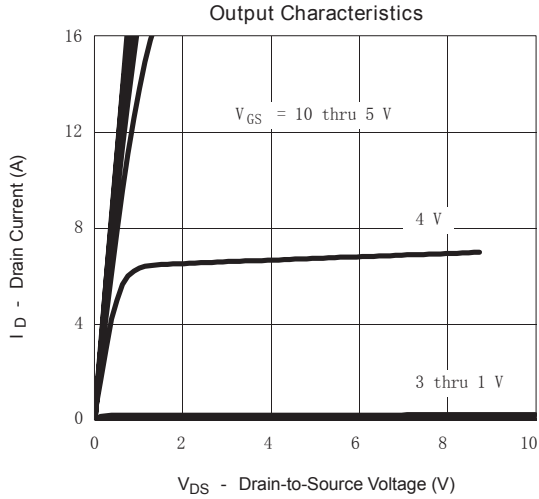
\* Pulse test:  $PW \leq 300\text{ }\mu\text{s}$  duty cycle  $\leq 2\%$ .

■ Marking

Marking	A6*
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**SI2306**

■ Typical Characteristics



**SI2306**

