P-Channel MOSFET
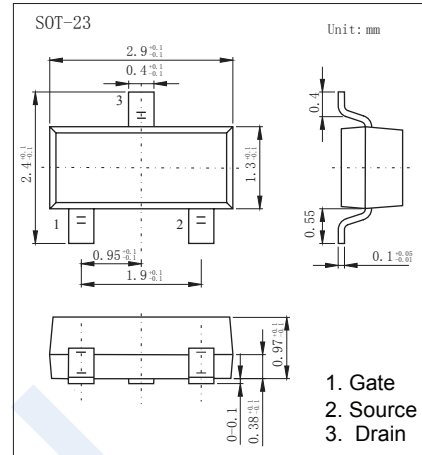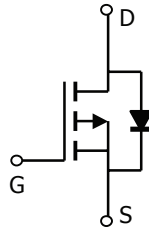# KI2305DS

■ 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)

SOT-23   Unit: mm

1. Gate
2. Source
3. Drain

■ Absolute Maximum Ratings Ta = 25℃

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

KI2305DS

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	V$_{DSS}$	V$_{GS}$ = 0 V, I$_D$ = -250μA	-20			V
Gate threshold voltage	V$_{GS(th)}$	V$_{DS}$ = V$_{GS}$, I$_D$ = -250 μA	-0.45		-0.8	V
Zero gate voltage drain current	I$_{DSS}$	V$_{DS}$ = -20 V , V$_{GS}$ = 0 V			-1	μA
		V$_{DS}$ = -20V , V$_{GS}$ = 0 V, T$_J$ = 55 ℃			-10	
Gate-body leakage	I$_{GSS}$	V$_{DS}$ = 0 V, V$_{GS}$ = ±10 V			±100	nA
Drain-source on-state resistance	r$_{DS(on)}$	V$_{GS}$ = -4.5 V, I$_D$ = -3.5 A		0.044	0.052	Ω
		V$_{GS}$ = -2.5 V, I$_D$ = -3.0 A		0.060	0.071	
		V$_{GS}$ = -2 V , I$_D$ = -2.0 A		0.087	0.108	
On-state drain current	I$_{D(on)}$	V$_{DS}$ ≤ -5 V, V$_{GS}$ = -4.5 V	-6			A
		V$_{DS}$ ≤ -5 V, V$_{GS}$ = -2.5 V	-3			
Forward transconductance	gfs	V$_{DS}$ = -5 V, I$_D$ = -3.5 A		8.5		S
Input capacitance *	C$_{iss}$	V$_{DS}$ = -10V , V$_{GS}$ = 0 , f = 1 MHz		1245		pF
Output capacitance *	C$_{oss}$			375		
Reverse transfer capacitance *	C$_{rss}$			210		
Total gate charge *	Q$_g$	V$_{DS}$ = -10V ,V$_{GS}$ = -4.5 V , I$_D$= -3.5 A		10	15	nC
Gate-source charge *	Q$_{gs}$			2		
Gate-drain charge *	Q$_{gd}$			2		
Turn-on Delay time	t$_{d(on)}$	V$_{DD}$ = -5V , R$_L$ = 4Ω , I$_D$ = -1A , V$_{GEN}$ =- 4.5V , R$_G$ = 6Ω		13	20	ns
Turn-on Reise 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) *	Is			-1.6		A
Diode forward voltage	V$_{SD}$	Is = -1.6 A, V$_{GS}$ = 0 V			-1.2	V

* Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.

■ Marking

Marking	A5*