

P-Channel MOSFET

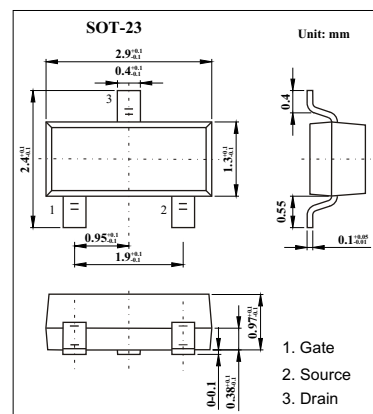
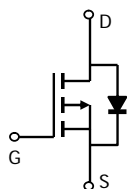
KI2301DS

Features

V_{DS} (V) = -20V

$R_{DS(ON)} < 100m$ ($V_{GS} = -4.5V$)

$R_{DS(ON)} < 150m$ ($V_{GS} = -2.5V$)

Absolute Maximum Ratings $T_a = 25$

Parameter	Symbol	5 sec	Steady State	Unit
Drain-Source Voltage	V_{DS}	-20		V
Gate-Source Voltage	V_{GS}	± 8		V
Continuous Drain Current ($T_J=150$) *2 $T_A=25$ $T_A=70$	I_D	-2.4 -1.9	-2.2 -1.8	A
Pulsed Drain Current *1	I_{DM}	-10		A
Continuous Source Current (diode conduction) *2	I_S	-0.72	-0.6	A
Power Dissipation *2 $T_A=25$ $T_A=70$	P_D	0.9 0.57	0.7 0.45	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150		
Maximum Junction-to-Ambient *2	R_{thJA}	145		/W
Maximum Junction-to-Ambient *3		175		

* 1. Pulse width limited by maximum junction temperature.

* 2. Surface Mounted on FR4 Board, $t \leq 5$ sec.

* 3. Surface Mounted on FR4 Board.

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Electrical Characteristics Ta = 25

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = -250\ \mu\text{A}$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$	-0.45		-0.95	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 8\text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20\text{ V}, V_{GS} = 0\text{ V}$			-1	μA
		$V_{DS} = -20\text{ V}, V_{GS} = 0\text{ V}, T_J = 55$			-10	
On-State Drain Current	$I_{D(on)}$	$V_{DS} = -5\text{ V}, V_{GS} = -4.5\text{ V}$	-6			A
		$V_{DS} = -5\text{ V}, V_{GS} = -2.5\text{ V}$	-3			
Drain-Source On-State Resistance *	$r_{DS(on)}$	$V_{GS} = -4.5\text{ V}, I_D = -2.8\text{ A}$		0.08	0.10	
		$V_{GS} = -2.5\text{ V}, I_D = -2.0\text{ A}$		0.11	0.15	
Forward Transconductance *	g_{fs}	$V_{DS} = -5\text{ V}, I_D = -2.8\text{ A}$		6.5		S
Diode Forward Voltage *	V_{SD}	$I_S = -0.75\text{ A}, V_{GS} = 0\text{ V}$		-0.8	-1.2	V
Total Gate Charge	Q_g	$V_{DS} = -6\text{ V}, V_{GS} = -4.5\text{ V}, I_D = -2.8\text{ A}$		4.5	10	nC
Gate-Source Charge	Q_{gs}			0.7		
Gate-Drain Charge	Q_{gd}			1.1		
Input Capacitance	C_{iss}	$V_{DS} = -6\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$		375		pF
Output Capacitance	C_{oss}			95		
Reverse Transfer Capacitance	C_{rss}			65		
Turn-On Time	$t_{d(on)}$	$V_{DD} = -6\text{ V}, R_L = 6, I_D = -1\text{ A}, V_{GEN} = -4.5\text{ V}, R_G = 6$		20	30	ns
	t_r			40	60	
Turn-Off Time	$t_{d(off)}$			30	45	
	t_f			20	30	

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

■ Marking

Marking	A1SHB
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