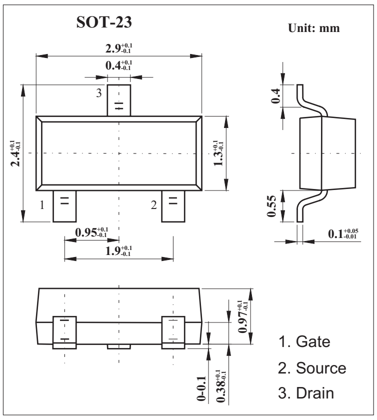
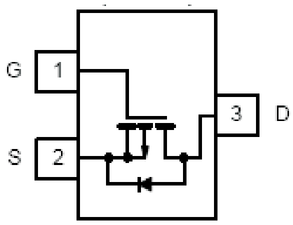
P-Channel 1.25-W, 1.8-V (G-S) Mosfet

KI2305DS



■ Features

- P-Channel 1.25-W, 1.8-V (G-S) MOSFET.



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	-8	V
Gate-source voltage	V_{GS}	±8	V
Continuous drain current (T_J = 150℃) T_A=25℃ T_A=70℃	I_D	±3.5 ±2.8	A
Pulsed drain current	I_{DM}	±12	A
Continuous source current (diode conduction) *	I_S	-1.6	A
Power dissipation * T_A=25℃ T_A=70℃	P_D	1.25 0.8	W
Operating junction and storage temperature range	T_j,T_{stg}	-55 to +150	℃
Junction-to-ambient * t≤ 5 sec	R_{thJA}	100	℃/W
Steady State		130	

* Surface mounted on FR4 board, t ≤ 5 sec.

KI2305DS

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = -10 μA	-8			V
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250 μA	-0.45			
Gate-body leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±8 V			±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} = -6.4 V, V_{GS} = 0 V			-1	μA
		V_{DS} = -6.4 V, V_{GS} = 0 V, T_J = 55 ℃			-10	
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			
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} = -1.8 V, I_D = -2.0 A		0.087	0.108	
Forward transconductance	g_{fs}	V_{DS} = -5 V, I_D = -3.5 A		8.5		S
Diode forward voltage	V_{SD}	I_S = -1.6 A, V_{GS} = 0 V			-1.2	V
Total gate charge *	Q_g	V_{DS} = -4V ,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		
Input capacitance *	C_{iss}	V_{DS} = -4V ,V_{GS} = 0 , f = 1 MHz		1245		pF
Output capacitance *	C_{oss}			375		
Reverse transfer capacitance *	C_{rss}			210		
Turn-on time	$t_{d(on)}$	V_{DD} = -4V , R_L = 4Ω , I_D = -1A , V_{GEN} =- 4.5V , R_G = 6Ω		13	20	ns
	t_r			25	40	
Turn-off time	$t_{d(off)}$			55	80	
	t_f			19	35	

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

■ Marking

Marking	A5