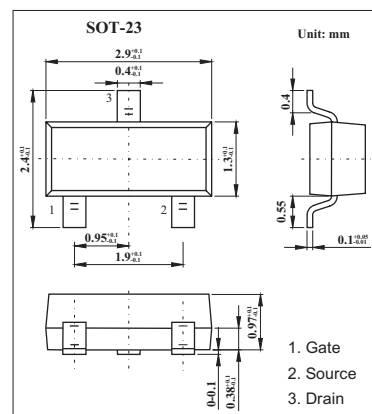
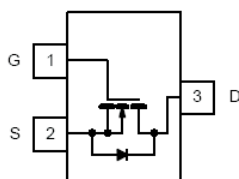


N-Channel 1.25-W, 2.5-V MOSFET

KI2302DS

■ Features

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current ($T_J = 150^\circ\text{C}$) *2	I_D	2.8	A
$T_A = 70^\circ\text{C}$		2.2	
Pulsed Drain Current *1	I_{DM}	10	
Continuous Source Current (Diode Conduction)*2	I_S	1.6	A
Power Dissipation *2	P_D	1.25	W
$T_A = 70^\circ\text{C}$		0.80	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Maximum Junction-to-Ambient ^b	R_{thJA}	100	$^\circ\text{C/W}$
Maximum Junction-to-Ambient ^c		166	

*1 Pulse width limited by maximum junction temperature.

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

*3 Surface Mounted on FR4 Board.

KI2302DS

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$, $I_D = 10\text{ }\mu\text{A}$	20			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 50\text{ }\mu\text{A}$	0.65			
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
		$V_{DS} = 20\text{ V}$, $V_{GS} = 0\text{ V}$, $T_J = 55^\circ\text{C}$			10	
On-State Drain Current *	$I_{D(on)}$	$V_{DS} \geq 5\text{ V}$, $V_{GS} = 4.5\text{ V}$	6			A
		$V_{DS} \geq 5\text{ V}$, $V_{GS} = 2.5\text{ V}$	4			
Drain-Source On-Resistance *	$r_{DS(on)}$	$V_{GS} = 4.5\text{ V}$, $I_D = 3.6\text{ A}$		0.07	0.085	Ω
		$V_{GS} = 2.5\text{ V}$, $I_D = 3.1\text{ A}$		0.085	0.115	
Forward Transconductance *	g_{fs}	$V_{DS} = 5\text{ V}$, $I_D = 3.6\text{ A}$		10		S
Diode Forward Voltage	V_{SD}	$I_S = 1.6\text{ A}$, $V_{GS} = 0\text{ V}$		0.76	1.2	V
Total Gate Charge	Q_g	$V_{DS}=10\text{V}, V_{GS}=4.5\text{V}, I_D=3.6\text{A}$		5.4	10	nC
Gate-Source Charge	Q_{gs}			0.65		
Gate-Drain Charge	Q_{gd}			1.60		
Input Capacitance	C_{iss}	$V_{DS}=10\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		340		pF
Output Capacitance	C_{oss}			115		
Reverse Transfer Capacitance	C_{rss}			33		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=10\text{V}, R_L=5.5\text{ }\Omega, I_D=3.6\text{A}, V_{GEN}=4.5\text{V}, R_G=6\text{ }\Omega$		12	25	ns
Rise Time	t_r			36	60	
Turn-Off Delay Time	$t_{d(off)}$			34	60	
Fall-Time	t_f			10	25	

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

■ Marking

Marking	A2
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