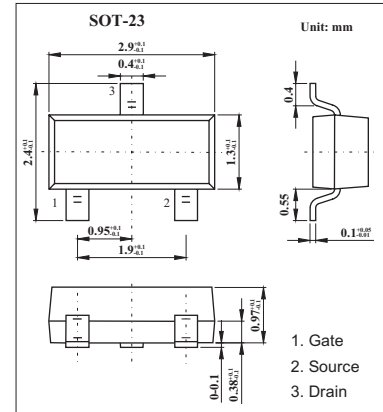
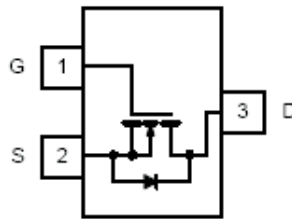


N-Channel 30-V (D-S) MOSFET

KI2304DS

■ Features

-

■ 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}	± 20	
Continuous Drain Current ($T_J = 150^\circ\text{C}$) *2 $T_a = 25^\circ\text{C}$ $T_a = 70^\circ\text{C}$	I_D	2.5	A
		2.0	
Pulsed Drain Current *1	I_{DM}	10	
Continuous Source Current (Diode Conduction)*2	I_S	1.25	
Power Dissipation *2 $T_a = 25^\circ\text{C}$ $T_a = 70^\circ\text{C}$	P_D	1.25	W
		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	$^\circ\text{C}/\text{W}$
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.

KI2304DS

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V(BR)DSS	V _{GS} = 0 V, I _D = 250 μA	30			V
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1.5			
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0 V			0.5	μA
		V _{DS} = 30 V, V _{GS} = 0 V, T _J = 55°C			10	
		V _{DS} = 30 V, V _{GS} = 1.0 V, T _J = 25°C			1	
On-State Drain Current *	I _{D(on)}	V _{DS} ≥ 4.5 V, V _{GS} = 10 V	6			A
		V _{DS} ≥ 4.5 V, V _{GS} = 4.5 V	4			
Drain-Source On-Resistance *	r _{DS(on)}	V _{GS} = 10 V, I _D = 2.5 A		0.092	0.117	Ω
		V _{GS} = 4.5 V, I _D = 2.0 A		0.142	0.190	
Forward Transconductance *	g _{fs}	V _{DS} = 4.5 V, I _D = 2.5 A		4.6		S
Diode Forward Voltage	V _{SD}	I _S = 1.25 A, V _{GS} = 0 V		0.77	1.2	V
Gate Charge	Q _g	V _{DS} = 15 V, V _{GS} = 5 V, I _D = 2.5 A		2.4	4	nC
Total Gate Charge	Q _{gt}	V _{DS} =15V, V _{GS} =10V, I _D =2.5A		4.5	10	nC
Gate-Source Charge	Q _{gs}			0.8		
Gate-Drain Charge	Q _{gd}			1.0		
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz		240		pF
Output Capacitance	C _{oss}			110		
Reverse Transfer Capacitance	C _{rss}			17		
Turn-On Delay Time	t _{d(on)}	V _{DD} =15V, R _L =15Ω, I _D =1A, V _{GEN} =10V, R _G =6Ω		8	20	ns
Rise Time	t _r			12	30	
Turn-Off Delay Time	t _{d(off)}			17	35	
Fall-Time	t _f			8	20	

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

■ Marking

Marking	A4
---------	----