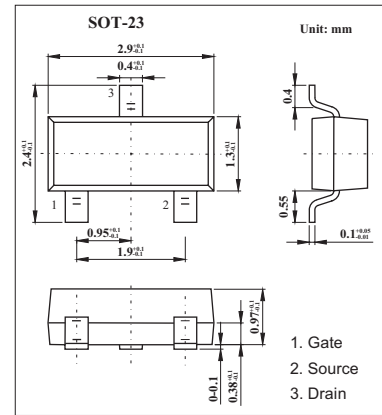
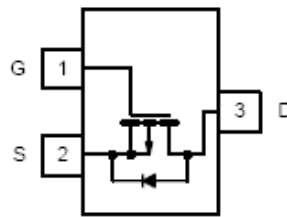


P-Channel 60-V (D-S) MOSFET

KI2309DS

■ Features

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

Parameter	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	-60	V
Gate-source voltage	V_{GS}	± 20	V
Continuous drain current ($T_J = 150^\circ\text{C}$)*1,2 $T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$	I_D	-1.25 -0.85	A
Pulsed drain current	I_{DM}	-8	A
Avalanche Current $L = 0.1\text{ mH}$	I_{AS}	-5	A
Maximum Power dissipation *1,2 $T_A = 25^\circ\text{C}$ $T_A = 70^\circ\text{C}$	P_D	1.25 0.8	W
Operating junction and storage temperature range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

*1 Surface Mounted on FR4 Board.

*2 $t \leq 5\text{ sec}$

■ Thermal Resistance Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction to Ambient* $t \leq 5\text{ sec}$ Steady State	R_{thJA}		100	$^\circ\text{C/W}$
		130	166	
Maximum Junction-to-Lead* Steady State	R_{thJL}	45	60	

* Surface Mounted on FR4 Board.

KI2309DS

■ 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 μ A	-60			V
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μ A	-1			
Gate-body leakage	I _{GSS}	V _{DS} = 0 V, V _{GS} = ± 20 V			± 100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} = -48V, V _{GS} = 0 V			-1	μ A
		V _{DS} = -48V, V _{GS} = 0 V, T _J = 125 °C			-50	
On-state drain current	I _{D(on)}	V _{DS} ≥ -4.5 V, V _{GS} = -10 V	-6			A
Drain-source on-state resistance	r _{DS(on)}	V _{GS} = -10 V, I _D = -1.25 A		0.275	0.340	Ω
		V _{GS} = 4.5 V, I _D = -1 A		0.406	0.550	
Forward transconductance	g _{fs}	V _{DS} = -4.5 V, I _D = -1 A		1.9		S
Total gate charge *	Q _g	V _{DS} = -30V, V _{GS} = -10 V, I _D = -1.25 A		5.4	12	nC
Gate-source charge *	Q _{gs}			1.15		
Gate-drain charge *	Q _{gd}			0.92		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -30V, R _L = 30 Ω, I _D = -1 A, V _{GEN} = -4.5V, R _G = 6 Ω		10.5	20	ns
Rise Time	t _r			11.5	20	
Turn-Off Delay Time	t _{d(off)}			15.5	30	
Fall Time	t _f			7.5	15	
Continuous Current	I _S				-1.25	A
Pulsed Current	I _{SM}				-8	A
Diode Forward Voltage*	V _{SD}	I _S = -1.25 A, V _{GS} = 0 V		-0.82	-1.2	V
Source-Drain Reverse Recovery Time	t _{rr}	I _F = -1.25 A, di/dt = 100 A/μ s		30	55	ns

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

■ Marking

Marking	A9
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