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

KI1302DL

■ Features

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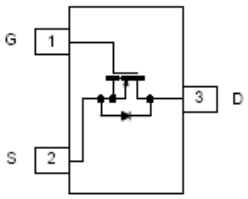

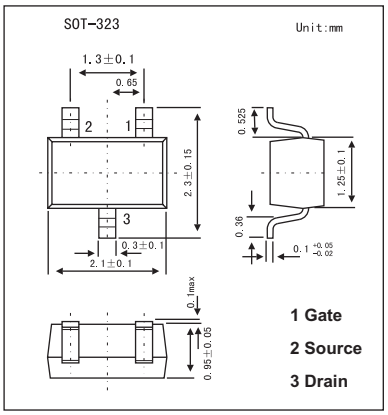

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	5 secs	Steady State	Unit
Drain-source voltage	V_{DS}	30		V
Gate-source voltage	V_{GS}	±20		V
Continuous drain current (T_J = 150℃) T_A=25℃ T_A=70℃	I_D	0.64 0.51	0.60 0.48	A
Pulsed drain current	I_{DM}	1.5		A
Continuous source current (diode conduction) *	I_S	0.26	0.23	A
Power dissipation * T_A=25℃ T_A=70℃	P_D	0.31 0.20	0.28 0.18	W
Operating junction and storage temperature range	T_j,T_{stg}	-55 to +150		℃

* Surface Mounted on 1" X 1" FR4 Board.

■ Thermal Resistance Ratings Ta = 25℃

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient*	t≤5 sec	R_{thJA}	355	400	℃/W
	Steady State		380	450	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	285	340	

* Surface Mounted on 1" X 1" FR4 Board.

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 μA	1			V
Gate-body leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} = 24 V, V_{GS} = 0 V			1	μA
		V_{DS} =24 V, V_{GS} = 0 V, T_J = 70 ℃			5	
On-state drain current	$I_{D(on)}$	V_{DS} =5 V, V_{GS} = 10 V	1.5			A
Drain-source on-state resistance	$r_{DS(on)}$	V_{GS} = 10 V, I_D = 0.6 A		0.410	0.480	Ω
		V_{GS} = 4.5V, I_D = 0.2 A		0.600	0.700	
Forward transconductance	g_{fs}	V_{DS} = 15 V, I_D = 0.6 A		0.75		S
Diode forward voltage	V_{SD}	I_S = 0.23 A, V_{GS} = 0 V		0.8	1.2	V
Total gate charge *	Q_g	V_{DS} =15V ,V_{GS} = 10 V , I_D= 0.6A		0.86	1.4	nC
Gate-source charge *	Q_{gs}			0.24		
Gate-drain charge *	Q_{gd}			0.08		
Turn-on time	$t_{d(on)}$	V_{DD} = 15V , R_L = 30Ω , I_D =0.5A , V_{GEN} =10V , R_G = 6Ω		5	10	ns
	t_r			8	15	
Turn-off time	$t_{d(off)}$			8	15	
	t_f			7	15	
Source-Drain Reverse Recovery Time	trr	I_F = 0.23 A, d_i/d_t = 100 A/μs		15	30	

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

■ Marking

Marking	KA