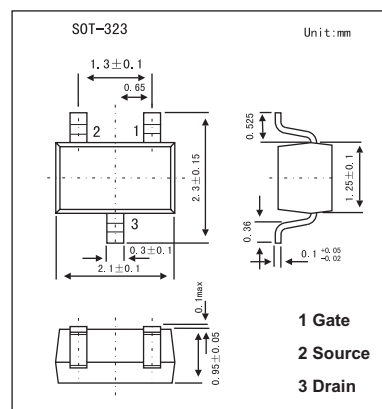
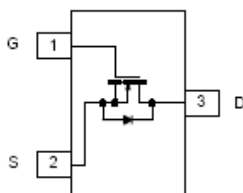


N-Channel 30-V (D-S) MOSFET

KI1302DL

■ Features

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

Parameter	Symbol	5 secs	Steady State	Unit
Drain-source voltage	V_{DS}	30		V
Gate-source voltage	V_{GS}	± 20		V
Continuous drain current ($T_J = 150^\circ\text{C}$) $T_A = 25^\circ\text{C}$ $T_A = 70^\circ\text{C}$	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 * $T_A = 25^\circ\text{C}$ $T_A = 70^\circ\text{C}$	P_D	0.31 0.20	0.28 0.18	W
Operating junction and storage temperature range	T_J, T_{stg}	-55 to +150		$^\circ\text{C}$

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

■ 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}	355 380	400 450	$^\circ\text{C/W}$
Maximum Junction-to-Foot (Drain) Steady State	R_{thJF}	285	340	

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

KI1302DL

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

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

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

■ Marking

Marking	KA
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