P-Channel 2.5-V (G-S) MOSFET

KI1303EDL

■ Features

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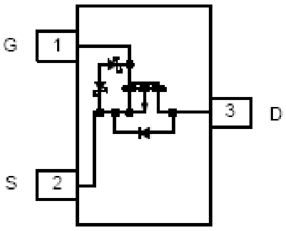

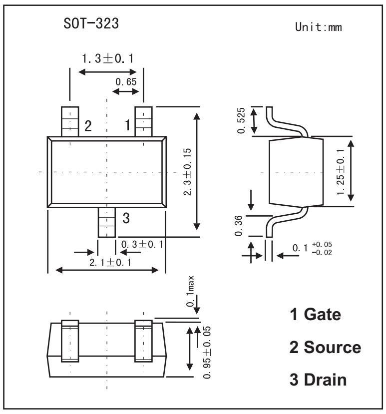

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	5 secs	Steady State	Unit
Drain-source voltage	V_{DS}	-20		V
Gate-source voltage	V_{GS}	±12		V
Continuous drain current (T_J = 150℃) T_A=25℃ T_A=70℃	I_D	±0.72 ±0.58	± 0.67 ± 0.54	A
Pulsed drain current	I_{DM}	±2.5		A
Continuous source current (diode conduction) *	I_S	-0.28	-0.24	A
Power dissipation * T_A=25℃ T_A=70℃	P_D	0.34 0.22	0.29 0.19	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}	315	375	℃/W
	Steady State		360	430	
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	-0.6			V
Gate-body leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±4.5 V			±1	μA
Zero gate voltage drain current	I_{DSS}	V_{DS} = -20 V, V_{GS} = 0 V			-1	μA
		V_{DS} =-20 V, V_{GS} = 0 V, T_J = 70 ℃			-5	
On-state drain current	$I_{D(on)}$	V_{DS} =-5 V, V_{GS} = -4.5 V	1.5			A
Drain-source on-state resistance	$r_{DS(on)}$	V_{GS} = -4.5 V, I_D = -1 A		0.360	0.430	Ω
		V_{GS} = -3.6V, I_D =-0.7 A		0.400	0.480	
		V_{GS} = -2.5V, I_D = -0.3 A		0.560	0.700	
Forward transconductance	g_{fs}	V_{DS} = -10 V, I_D = -1 A		1.7		S
Diode forward voltage	V_{SD}	I_S = -1 A, V_{GS} = 0 V			-1.2	V
Total gate charge *	Q_g	V_{DS} =-10V ,V_{GS} = -4.5 V , I_D= -1A		1.9	2.5	nC
Gate-source charge *	Q_{gs}			0.45		
Gate-drain charge *	Q_{gd}			0.44		
Turn-on time	$t_{d(on)}$	V_{DD} = -10V , R_L = 10 Ω , I_D =-1A , V_{GEN} =-4.5V , R_G = 6 Ω		180	300	ns
	t_r			410	655	
Turn-off time	$t_{d(off)}$			560	900	
	t_f			530	850	
Source-Drain Reverse Recovery Time	t_{rr}	I_F = -1 A, d_i/d_t = 100 A/ μs		435	700	

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

■ Marking

Marking	LD