Dual P-Channel 1.8-V (G-S) MOSFET

KI1905DL

■ Features

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SOT-363   Unit: mm
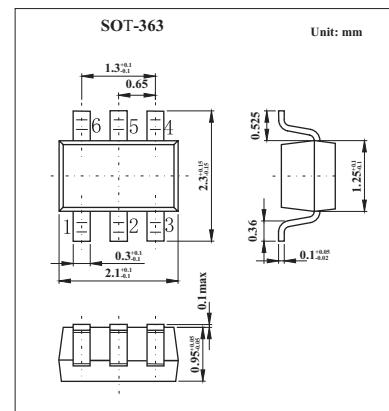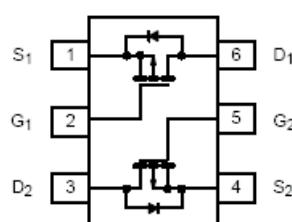
■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	5 secs	Steady State	Unit
Drain-source voltage	V_{DS}	-8		V
Gate-source voltage	V_{GS}	± 8		V
Continuous drain current (T_J = 150℃)* T_A=25℃ T_A=85℃	I_D	± 0.60 ± 0.43	± 0.57 ± 0.41	A
Pulsed drain current	I_{DM}	± 1.0		A
Continuous source current (diode conduction) *	I_S	-0.25	-0.23	A
Power dissipation * T_A=25℃ T_A=85℃	P_D	0.30 0.16	0.27 0.14	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}	360	415	℃/W
	Steady State		400	460	
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	300	350	

* 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	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250 \mu A$	-0.45			V
Gate-body leakage	I_{GSS}	$V_{DS} = 0$ V, $V_{GS} = \pm 8$ V			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -6.4$ V, $V_{GS} = 0$ V			-1	μA
		$V_{DS} = -6.4$ V, $V_{GS} = 0$ V, $T_J = 85$ ℃			-5	
On-state drain current	$I_{D(on)}$	$V_{DS} = -5$ V, $V_{GS} = -4.5$ V	-1.0			A
Drain-source on-state resistance	$r_{DS(on)}$	$V_{GS} = -4.5$ V, $I_D = -0.57$ A		0.51	0.600	Ω
		$V_{GS} = -2.5$ V, $I_D = -0.48$ A		0.72	0.85	
		$V_{GS} = -1.8$ V, $I_D = -0.20$ A		1.0	1.2	
Forward transconductance	g_{fs}	$V_{DS} = -10$ V, $I_D = -0.57$ A		1.2		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	$V_{DS} = -4V$, $V_{GS} = -4.5$ V, $I_D = -0.57A$		1.5	2.3	nC
Gate-source charge *	Q_{gs}			0.17		
Gate-drain charge *	Q_{gd}			0.16		
Turn-on time	$t_{d(on)}$	$V_{DD} = -4V$, $R_L = 8 \Omega$, $I_D = -0.5A$, $V_{GEN} = -4.5V$, $R_G = 6 \Omega$		6	12	ns
	t_r			25	50	
Turn-off time	$t_{d(off)}$			10	20	
	t_f			10	20	
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -0.23$ A, $di/dt = 100$ A/μs		20	40	

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

■ Marking

Marking	QB