Dual N-Channel 20-V (D-S) MOSFET

KI1902DL

■ Features

●

SOT-363

Unit: mm
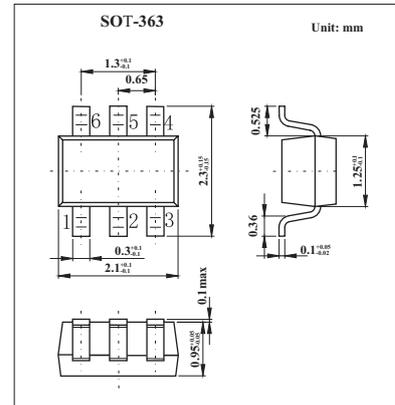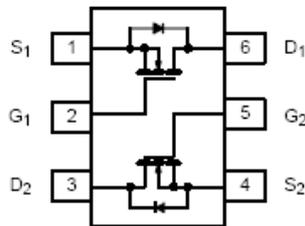
■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	5 secs	Steady State	Unit
Drain-source voltage	V_{DS}	20		V
Gate-source voltage	V_{GS}	± 12		V
Continuous drain current ($T_J = 150℃$)* $T_A=25℃$ $T_A=85℃$	I_D	0.70 0.50	0.66 0.48	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.

KI1902DL

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\mu A$	0.6		15	V
Gate-body leakage	I_{GSS}	$V_{DS} = 0$ V, $V_{GS} = \pm12$ V			±100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 16$ V, $V_{GS} = 0$ V			1	μA
		$V_{DS} =16$ V, $V_{GS} = 0$ V, $T_J = 85$ ℃			5	
On-state drain current	$I_{D(on)}$	$V_{DS} = \geqslant5$ V, $V_{GS} = 4.5$ V	1.0			A
Drain-source on-state resistance	$r_{DS(on)}$	$V_{GS} = 4.5$ V, $I_D = 0.66$ A		0.320	0.385	Ω
		$V_{GS} = 2.5V$, $I_D =0.40A$		0.560	0.630	
Forward transconductance	g_{fs}	$V_{DS} = 10$ V, $I_D = 0.66$ A		1.5		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	$V_{DS} =10V$,$V_{GS} = 4.5$ V , $I_D= 0.66A$		0.8	1.2	nC
Gate-source charge *	Q_{gs}			0.06		
Gate-drain charge *	Q_{gd}			0.30		
Turn-on time	$t_{d(on)}$	$V_{DD} = 10V$, $R_L = 20\Omega$, $I_D =0.5A$, $V_{GEN} =4.5V$, $R_G = 6\Omega$		10	20	ns
	t_r			16	30	
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/μ s		20	40	

* Pulse test: PW $\leqslant$ 300 μs duty cycle $\leqslant$ 2%.

■ Marking

Marking	PA