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

KI5903DC

■ Features
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P-Channel MOSFET   P-Channel MOSFET
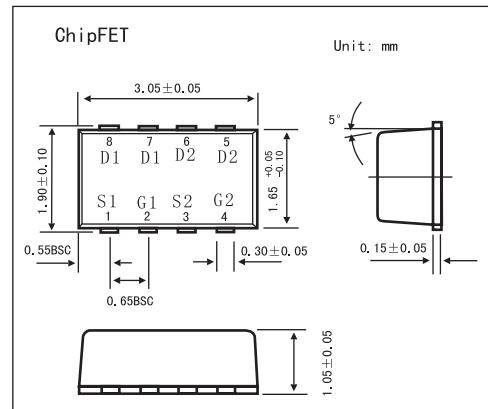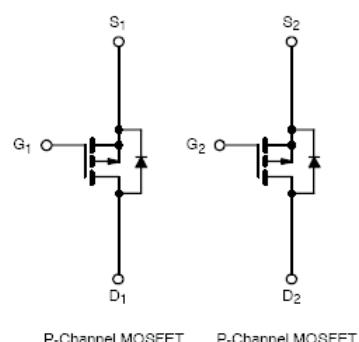
■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	5 secs	Steady State	Unit
Drain-Source Voltage		V_{DS}	-20		V
Gate-Source Voltage		V_{GS}	±12		
Continuous Drain Current (T_J = 150 ℃) *	T_A = 25℃	I_D	±2.9	±2.1	A
	T_A = 85℃		±2.1	±1.5	
Pulsed Drain Current		I_{DM}	±10		
Continuous Source Current *		I_S	-1.8	-0.9	
Maximum Power Dissipation *	T_A = 25℃	P_D	2.1	1.1	W
	T_A = 85℃		1.1	0.6	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150		℃
Soldering Recommendations (Peak Temperature)			260		℃
Parameter		Symbol	Typ	Max	Unit
Maximum Junction-to-Ambienta	t ≤ 5 sec	R_{thJA}	50	60	℃/W
	Steady-State		90	110	
Maximum Junction-to-Foot (Drain)	Steady-State	R_{thJF}	30	40	

* 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	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250 \mu A$	-0.6			V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 V$, $V_{GS} = \pm 12 V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16V$, $V_{GS} = 0 V$			-1	μA
		$V_{DS} = -16V$, $V_{GS} = 0 V$, $T_J = 85℃$			-5	μA
On-State Drain Current*	$I_{D(on)}$	$V_{DS} \leqslant - 5 V$, $V_{GS} = -4.5 V$	-10			A
Drain-Source On-State Resistance*	$r_{DS(on)}$	$V_{GS} = -4.5 V$, $I_D = -2.1A$		0.130	0.155	Ω
		$V_{GS} = -3.6 V$, $I_D = -2.0A$		0.150	0.180	Ω
		$V_{GS} = -2.5 V$, $I_D = -1.7A$		0.215	0.260	Ω
Forward Transconductance*	g_{fs}	$V_{DS} = -10 V$, $I_D = -2.1A$		5		S
Schottky Diode Forward Voltage*	V_{SD}	$I_S = -0.9 A$, $V_{GS} = 0 V$		-0.8	-1.2	V
Total Gate Charge	Q_g	$V_{DS} = -10V$, $V_{GS} = -4.5 V$, $I_D = -2.1 A$		3	6	nC
Gate-Source Charge	Q_{gs}			0.9		nC
Gate-Drain Charge	Q_{gd}			0.6		nC
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10 V$, $R_L = 10 \Omega$ $I_D = -1 A$, $V_{GEN} = -4.5V$, $R_G = 6 \Omega$		13	20	ns
Rise Time	t_r			35	55	ns
Turn-Off Delay Time	$t_{d(off)}$			25	40	ns
Fall Time	t_f			25	40	ns
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -0.9 A$, $di/dt = 100 A/\mu s$		40	80	ns

* Pulse test; pulse width≤ 300 μ s, duty cycle ≤ 2%.