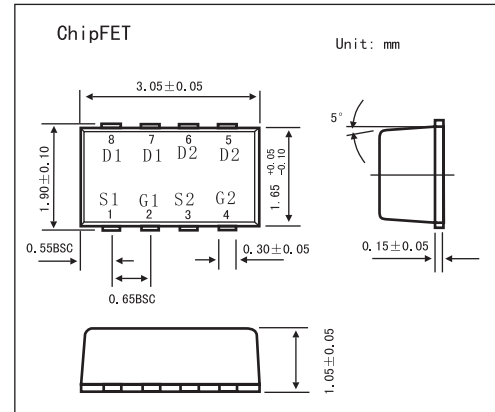
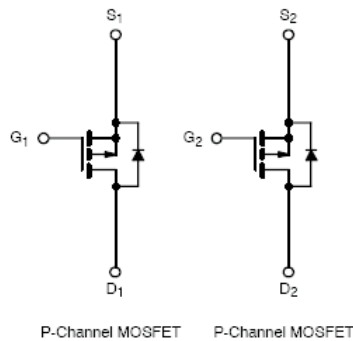


## Dual P-Channel 2.5-V (G-S) MOSFET

### KI5903DC

#### ■ Features



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

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

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

## KI5903DC

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	-0.6			V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±12 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -16V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 85°C			-5	μA
On-State Drain Current*	I <sub>D(on)</sub>	V <sub>DS</sub> ≤ -5 V, V <sub>GS</sub> = -4.5 V	-10			A
Drain-Source On-State Resistance*	r <sub>Ds(on)</sub>	V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -2.1A		0.130	0.155	Ω
		V <sub>GS</sub> = -3.6 V, I <sub>D</sub> = -2.0A		0.150	0.180	Ω
		V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -1.7A		0.215	0.260	Ω
Forward Transconductance*	g <sub>fs</sub>	V <sub>DS</sub> = -10 V, I <sub>D</sub> = -2.1A		5		S
Schottky Diode Forward Voltage*	V <sub>SD</sub>	I <sub>S</sub> = -0.9 A, V <sub>GS</sub> = 0 V		-0.8	-1.2	V
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -2.1 A		3	6	nC
Gate-Source Charge	Q <sub>gs</sub>			0.9		nC
Gate-Drain Charge	Q <sub>gd</sub>			0.6		nC
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -10 V, R <sub>L</sub> = 10 Ω I <sub>D</sub> = -1 A, V <sub>GEN</sub> = -4.5V, R <sub>G</sub> = 6 Ω		13	20	ns
Rise Time	t <sub>r</sub>			35	55	ns
Turn-Off Delay Time	t <sub>d(off)</sub>			25	40	ns
Fall Time	t <sub>f</sub>			25	40	ns
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = -0.9 A, di/dt = 100 A/μs		40	80	ns

\* Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.