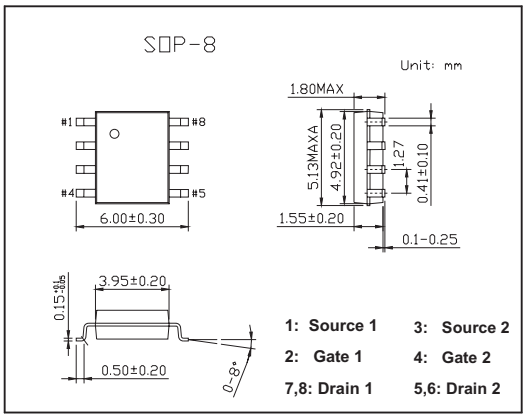
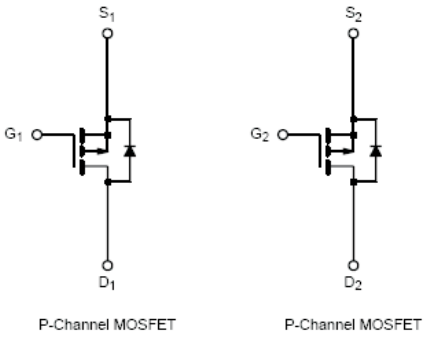
Dual P-Channel 30-V (D-S) MOSFET

KI4923DY

■ Features

- TrenchFET Power MOSFETS
- Advanced High Cell Density Process





P-Channel MOSFET P-Channel MOSFET

■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	10 secs	Steady State	Unit
Drain-Source Voltage		V_{DS}	-30		V
Gate-Source Voltage		V_{GS}	±20		
Continuous Drain Current (T_J = 150 ℃) *	T_A = 25℃	I_D	-8.3	-6.2	A
	T_A = 70℃		-6.6	-5	
Pulsed Drain Current		I_{DM}	-30		
Continuous Source Current *		I_S	-1.7	-0.9	
Maximum Power Dissipation *	T_A = 25℃	P_D	2	1.1	W
	T_A = 70℃		1.3	0.7	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150		℃
Parameter		Symbol	Typ	Max	Unit
Maximum Junction-to-Ambient*	t ⩽ 10 sec	R_{thJA}	45	62.5	℃/W
	Steady-State		85	110	
Maximum Junction-to-Foot (Drain)	Steady-State	R_{thJF}	26	35	

* 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 = -250μA	-1		-3	V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24V, V_{GS} = 0 V			-1	μA
		V_{DS} = -24V, V_{GS} = 0 V, T_J = 85℃			-25	μA
On-State Drain Current*	$I_{D(on)}$	V_{DS} =- 5 V, V_{GS} = -10 V	-30			A
Drain-Source On-State Resistance*	$r_{DS(on)}$	V_{GS} = -10 V, I_D = -8.3A		0.017	0.021	Ω
		V_{GS} = -4.5 V, I_D = -6.8A		0.025	.031	Ω
Forward Transconductance*	g_{fs}	V_{DS} = -10 V, I_D = -8.3A		26		S
Schottky Diode Forward Voltage*	V_{SD}	I_S = -1.7 A, V_{GS} = 0 V		-0.8	-1.2	V
Total Gate Charge	Q_g	V_{DS} = -15V, V_{GS} = -10 V, I_D = -8.3 A		45.5	70	nC
Gate-Source Charge	Q_{gs}			6.5		nC
Gate-Drain Charge	Q_{gd}			12.6		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -15 V, R_L = 15 Ω I_D = -1 A, V_{GEN} = -10V, R_G = 6 Ω		15	25	ns
Rise Time	t_r			10	15	ns
Turn-Off Delay Time	$t_{d(off)}$			135	210	ns
Fall Time	t_f			80	120	ns
Source-Drain Reverse Recovery Time	t_{rr}	I_F = -1.7 A, di/dt = 100 A/μs		70	110	ns

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