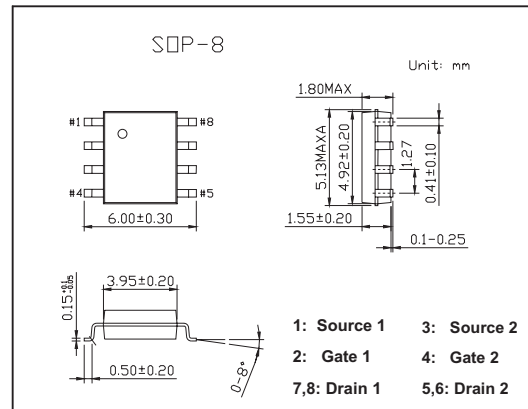
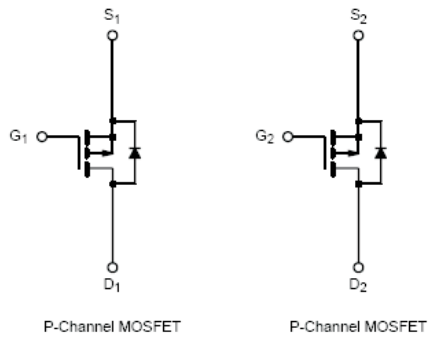


## Dual P-Channel 30-V (D-S) MOSFET

## KI4923DY

## ■ Features

- TrenchFET Power MOSFETS
- Advanced High Cell Density Process

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

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

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

## KI4923DY

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	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	-1		-3	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0 V, V <sub>GS</sub> = ±20 V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -24V, V <sub>GS</sub> = 0 V			-1	μA
		V <sub>DS</sub> = -24V, V <sub>GS</sub> = 0 V, T <sub>J</sub> = 85°C			-25	μA
On-State Drain Current*	I <sub>D(on)</sub>	V <sub>DS</sub> = -5 V, V <sub>GS</sub> = -10 V	-30			A
Drain-Source On-State Resistance*	r <sub>DS(on)</sub>	V <sub>GS</sub> = -10 V, I <sub>D</sub> = -8.3A		0.017	0.021	Ω
		V <sub>GS</sub> = -4.5 V, I <sub>D</sub> = -6.8A		0.025	.031	Ω
Forward Transconductance*	g <sub>fs</sub>	V <sub>DS</sub> = -10 V, I <sub>D</sub> = -8.3A		26		S
Schottky Diode Forward Voltage*	V <sub>SD</sub>	I <sub>S</sub> = -1.7 A, V <sub>GS</sub> = 0 V		-0.8	-1.2	V
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = -10 V, I <sub>D</sub> = -8.3 A		45.5	70	nC
Gate-Source Charge	Q <sub>gs</sub>			6.5		nC
Gate-Drain Charge	Q <sub>gd</sub>			12.6		nC
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -15 V, R <sub>L</sub> = 15 Ω I <sub>D</sub> = -1 A, V <sub>GEN</sub> = -10V, R <sub>G</sub> = 6 Ω		15	25	ns
Rise Time	t <sub>r</sub>			10	15	ns
Turn-Off Delay Time	t <sub>d(off)</sub>			135	210	ns
Fall Time	t <sub>f</sub>			80	120	ns
Source-Drain Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = -1.7 A, di/dt = 100 A/μs		70	110	ns

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