

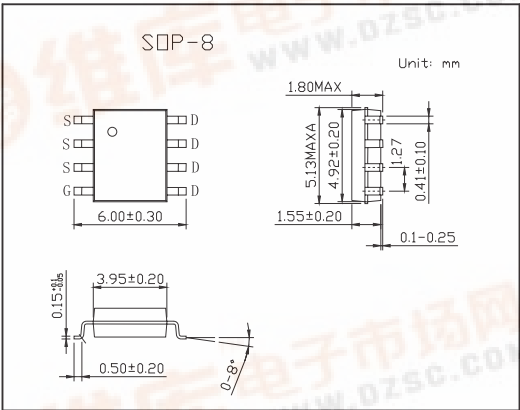
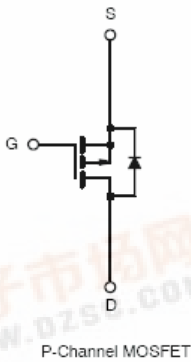
SMD Type

IC

P-Channel 1.8-V (G-S) MOSFET
KI4433DY

■ Features

- TrenchFET Power MOSFETS
- Fast Switching
- 100% R_g Tested



■ Absolute Maximum Ratings Ta = 25°C

Parameter		Symbol	10 secs	Steady State	Unit
Drain-Source Voltage		V _{DS}	-20		V
Gate-Source Voltage		V _{GS}	± 8		
Continuous Drain Current (T _J = 150 °C) *	T _A = 25°C	I _D	-3.9	-2.9	A
	T _A = 85°C		-2.8	-2.1	
Pulsed Drain Current		I _{DM}	-10		
Continuous Source Current *		I _S	-2.1	-1.2	A
Maximum Power Dissipation *	T _A = 25°C	P _D	2.5	1.4	W
	T _A = 85°C		1.3	0.7	
Operating Junction and Storage Temperature Range		T _J , T _{stg}	-55 to 150		°C

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

■ Thermal Resistance Ratings Ta = 25°C

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient *	t ≤ 10 sec	R _{thJA}	40	50	°C/W
	Steady State		75	90	
Maximum Junction-to-Foot(Drain)	Steady State	R _{thJF}	19	25	

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



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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-0.45		-1.0	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 V, V_{GS} = \pm 8 V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20 V, V_{GS} = 0 V$			-1	μA
		$V_{DS} = -20 V, V_{GS} = 0 V, T_J = 85^\circ C$			-5	μA
On-State Drain Current*	$I_{D(on)}$	$V_{DS} \leq -5 V, V_{GS} = -4.5 V$	-10			A
Drain-Source On-State Resistance	$r_{DS(on)}$	$V_{GS} = -4.5 V, I_D = -2.7 A$		0.095	0.110	Ω
		$V_{GS} = -2.5 V, I_D = -2.2 A$		0.137	0.160	
		$V_{GS} = -1.8 V, I_D = -1 A$		0.205	0.24	
Forward Transconductance *	g_{fs}	$V_{DS} = -10 V, I_D = -2.7 A$		7		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	$V_{DS} = -10 V, V_{GS} = -4.5 V, I_D = -2.7 A$		5.1	7.7	nC
Gate-Source Charge	Q_{gs}			1.2		nC
Gate-Drain Charge	Q_{gd}			1.0		nC
Gate Resistance	R_g		3	6	9.7	Ω
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -10 V, R_L = 10 \Omega$ $I_D = -1 A, V_{GEN} = -4.5 V, R_G = 6 \Omega$		16	25	ns
Rise Time	t_r			30	45	ns
Turn-Off Delay Time	$t_{d(off)}$			30	45	ns
Fall Time	t_f			27	40	ns
Source-Drain Reverse Recovery Time	t_{rr}	$I_F = -0.9 A, di/dt = 100 A/\mu s$		20	40	ns

* Pulse test; pulse width $\leq 300 \mu s$, duty cycle $\leq 2\%$.