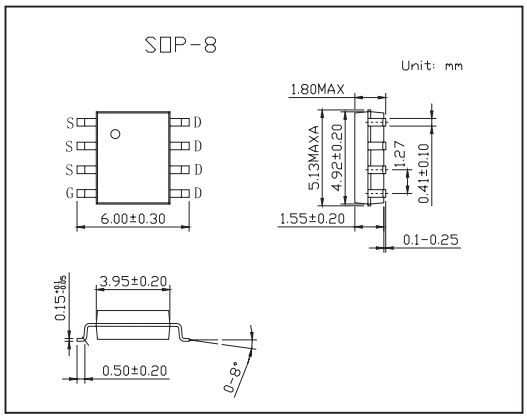
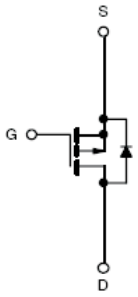
P-Channel 1.8-V (G-S) MOSFET

KI4403BDY



■ Features

- TrenchFET Power MOSFET



P-Channel MOSFET

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	10 sec	Steady State	Unit
Drain-Source Voltage	V_{DS}	-20		V
Gate-Source Voltage	V_{GS}	±8		V
Continuous Drain Current (T_J=150℃) * T_A=25℃ T_A=70℃	I_D	-9.9 -7.9	-7.3 -5.8	A
Pulsed Drain Current	I_{DM}	-30		A
Continuous Source Current (diode conduction) *	I_S	-2.3	-1.3	A
Power Dissipation * T_A=25℃ T_A=70℃	P_D	2.5 1.6	1.35 0.87	W
Jumction Temperature	T_j	150		℃
Storage Temperature	T_{stg}	-55 to +150		℃

* 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 = -350 μA	-0.45		-1.0	V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±8 V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -16 V, V_{GS} = 0 V			-1	μA
		V_{DS} = -16 V, V_{GS} = 0 V, T_J = 70 ℃			-10	
On-State Drain Current	$I_{D(on)}$	V_{DS} ≤ -5 V, V_{GS} = -4.5 V	20			A
Drain-Source On-State Resistance *	$r_{DS(on)}$	V_{GS} = -4.5 V, I_D = -9.9 A		0.014	0.017	Ω
		V_{GS} = -2.5 V, I_D = -8.5A		0.018	0.023	
		V_{GS} = -1.8 V, I_D = -3.1 A		0.024	0.032	
Forward Transconductance *	g_{fs}	V_{DS} = -15 V, I_D = -9.9 A		36		S
Diode Forward Voltage *	V_{SD}	I_S = -2.3A, V_{GS} = 0 V		-0.8	-1.1	V
Total Gate Charge	Q_g	V_{DS} = -10V ,V_{GS} = -5 V , I_D= -9.9 A		33	50	nC
Gate-Source Charge	Q_{gs}			4.2		
Gate-Drain Charge	Q_{gd}			7.6		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -10V , R_L = 15Ω , I_D = -1A , V_{GEN} =- 4.5V , R_G = 6Ω		25	40	ns
Rise Time	t_r			45	70	
Turn-Off Delay Time	$t_{d(off)}$			150	225	
Fall Time	t_f			70	110	
Source-Drain Reverse Recovery Time	trr	I_F = -2.3 A, di/dt = 100 A/μs		40	60	

* Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.