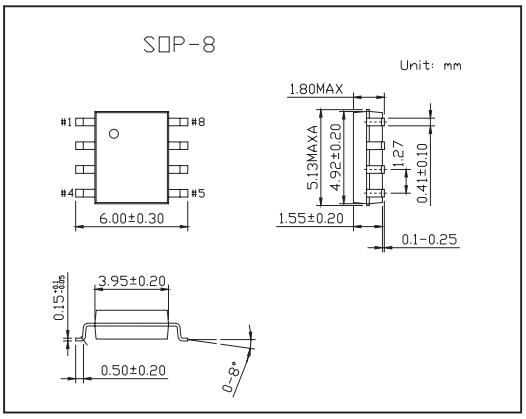
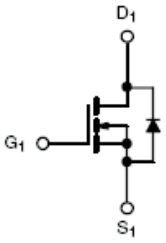
Dual N-Channel 30-V (D-S) MOSFET

KI4330DY

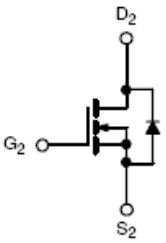


■ Features

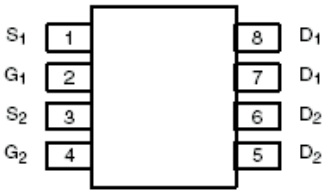
- TrenchFET Power MOSFETS
- 100 % Rg Tested



N-Channel MOSFET



N-Channel MOSFET



Top View

■ 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	8.7	6.6	A
	T_A = 70℃		7.0	5.3	
Pulsed Drain Current		I_{DM}	±30		
Continuous Source Current (Diode Conduction)*		I_S	1.7	0.9	A
Maximum Power Dissipation	T_A = 25℃	P_D	2.0	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	Typical	Maximum	
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.

KI4330DY

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 μA	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} = 30 V, V_{GS} = 0 V			1	μA
		V_{DS} = 30 V, V_{GS} = 0 V, T_J = 55℃			5	
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 = 8.7 A		0.013	0.0165	Ω
		V_{GS} = 4.5 V, I_D = 7.5 A		0.018	0.022	Ω
Forward Transconductance*	g_{fs}	V_{DS} = 15 V, I_D = 8.7 A		28		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} = 15 V, V_{GS} = 4.5 V, I_D = 8.7 A		13		nC
Gate-Source Charge	Q_{gs}			7.1		nC
Gate-Drain Charge	Q_{gd}			3.5		nC
Gate Resistance	R_g			1	1.7	Ω
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 15 V, R_L = 15 Ω I_D = 1 A, V_{GEN} = 10 V, R_G = 6 Ω		10	15	ns
Rise Time	t_r			10	15	ns
Turn-Off Delay Time	$t_{d(off)}$			40	60	ns
Fall Time	t_f			12	20	ns
Source-Drain Reverse Recovery Time	t_{rr}	I_F = 1.7 A, di/dt = 100 A/μs		45	70	ns

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