NIKO-SEM

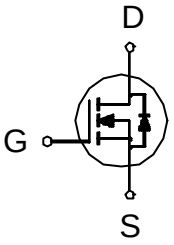
N-Channel Logic Level Enhancement Mode Field Effect Transistor

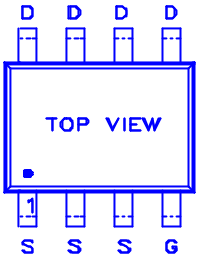
P4410LV

SOP-8

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
25	18mΩ	10A





1,2,3 : SOURCE
4 : GATE
5,6,7,8 : DRAIN

ABSOLUTE MAXIMUM RATINGS (T_C = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C = 25 °C	I_D	10	A
	T_C = 100 °C		8	
Pulsed Drain Current[1]		I_{DM}	50	
Power Dissipation[2]	T_C = 25 °C	P_D	2.5	W
	T_C = 100 °C		1.3	
Operating Junction &Storage Temperature Range		T_j, T_{stg}	-55 to 150	℃

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		25	℃/ W
Junction-to-Ambient	$R_{\theta JA}$		50	

[1]Pulse width limited by maximum junction temperature.
[2]Surface mounted on FR4 board, t ≤ 10sec.

ELECTRICAL CHARACTERISTICS (T_C = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	25			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1	1.6	3	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±250	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V			25	μA
		V_{DS} = 20V, V_{GS} = 0V, T_C = 125 °C			250	
On-State Drain Current[1]	$I_{D(ON)}$	V_{DS} = 10V, V_{GS} = 10V	20			A
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 5A		22	26	mΩ
		V_{GS} = 10V, I_D = 10A		17	22	
Forward Transconductance[1]	g_{fs}	V_{DS} = 10V, I_D = 10A		32		S

DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 15V, f = 1MHz		1200	1800	pF
Output Capacitance	C_{oss}			600	1000	
Reverse Transfer Capacitance	C_{rss}			350	500	
Total Gate Charge[2]	Q_g	V_{DS} = 10V, V_{GS} = 10V, I_D = 10A		35	60	nC
Gate-Source Charge[2]	Q_{gs}			8		
Gate-Drain Charge[2]	Q_{gd}			5		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DS} = 15V, $I_D \cong$ 1A, V_{GS} = 10V, R_{GEN} = 6Ω		6	16	nS
Rise Time[2]	t_r			120	250	
Turn-Off Delay Time[2]	$t_{d(off)}$			40	90	
Fall Time[2]	t_f			105	200	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Continuous Current	I_S				2.3	A
Pulsed Current[3]	I_{SM}				20	
Forward Voltage[1]	V_{SD}	I_S = 2.3A, V_{GS} = 0V		0.9	1.3	V
Reverse Recovery Time	t_{rr}	$I_F = I_S$, dI_F/dt = 100A / µS		70		nS

[1]Pulse test : Pulse Width ≤ 300 µsec, Duty Cycle ≤ 2%.
[2]Independent of operating temperature.
[3]Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH "P4410LV", DATE CODE or LOT #

SOP-8 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.95	5.05	5.15	H	0.55	0.65	0.75
B	3.7	3.9	4.1	I	0.2	025	0.3
C	5.9	6.0	6.1	J	0.6	0.7	0.8
D	0.37	0.42	0.49	K	0 °		8 °
E	1.05	1.15	1.25	L			
F	1.4	1.45	1.5	M			
G	0.25	0.3	0.35	N