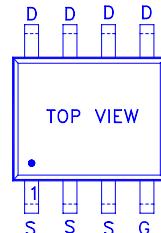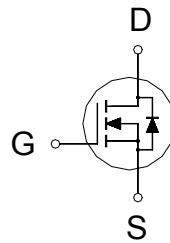# NIKO-SEM

N-Channel Logic Level Enhancement Mode Field Effect Transistor (Preliminary)

P01N02LJA

J-LEAD8

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
25V	70mΩ	1.2A

D

G

S

TOP VIEW

D D D D

S S S G

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

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±15	V
Continuous Drain Current	T_C = 25 °C	I_D	1.2	A
	T_C = 100 °C		1.0	
Pulsed Drain Current[1]		I_{DM}	12	
Power Dissipation	T_C = 25 °C	P_D	0.6	W
	T_C = 100 °C		0.5	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C
Lead Temperature ($^1/_{16}$" from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		65	°C / W
Junction-to-Ambient	$R_{\theta JA}$		230	

[1]Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250 µA	25			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 µA	0.7	1.0	2.5	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±15V			±250	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V			25	µA
		V_{DS} = 20V, V_{GS} = 0V, T_J = 125 °C			250	
On-State Drain Current[1]	$I_{D(ON)}$	V_{DS} = 10V, V_{GS} = 10V	1.2			A
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 7V, I_D = 1.2A		120	180	mΩ
		V_{GS} = 10V, I_D = 1.2A		70	120	
Forward Transconductance[1]	g_{fs}	V_{DS} = 20V, I_D = 1.2A		16		S

AUG-30-2002

DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 15V, f = 1MHz		120		
Output Capacitance	C_{oss}			100		pF
Reverse Transfer Capacitance	C_{rss}			85		
Total Gate Charge[2]	Q_g	V_{DS} = 0.5$V_{(BR)DSS}$, V_{GS} = 10V, I_D = 1A		11		
Gate-Source Charge[2]	Q_{gs}			3.0		nC
Gate-Drain Charge[2]	Q_{gd}			5.8		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DS} = 15V, R_L = 1Ω $I_D \cong$ 1A, V_{GS} = 10V, R_{GS} = 50Ω		7		
Rise Time[2]	t_r			20		nS
Turn-Off Delay Time[2]	$t_{d(off)}$			13		
Fall Time[2]	t_f			19		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_C = 25 °C)						
Continuous Current	I_S			1.2		A
Pulsed Current[3]	I_{SM}			12		
Forward Voltage[1]	V_{SD}	I_F = I_S, V_{GS} = 0V			1.3	V
Reverse Recovery Time	t_{rr}	I_F = I_S, dI_F/dt = 100A / μS		70		nS
Reverse Recovery Charge	Q_{rr}			0.22		μC

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

REMARK: THE PRODUCT MARKED WITH "102B"

NIKO-SEM

**N-Channel Logic Level Enhancement Mode
Field Effect Transistor
(Preliminary)**

P01N02LJA
J-LEAD8

J-LEAD8 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A		0.50		H	0.10		0.20
B	0.15		0.3	I		0.048	
C	1.65		1.85	J	0		0.1
D	2.00	2.20	2.40	K	0.35	0.45	0.55
E	1.80	2.00	2.20	L	1.80	2.10	2.40
F	0.70	0.90	1.00	M			
G			1.10	N			