

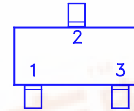
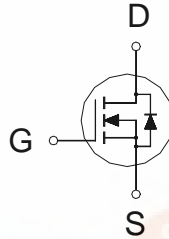
**NIKO-SEM**

**N-Channel Logic Level Enhancement  
Mode Field Effect Transistor**

**P01N02LMB  
SOT-23 (M3)**

**PRODUCT SUMMARY**

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
25V	180mΩ	1.2A



- 1. GATE
- 2. DRAIN
- 3. SOURCE

**ABSOLUTE MAXIMUM RATINGS ( $T_C = 25\text{ °C}$  Unless Otherwise Noted)**

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS
Gate-Source Voltage	$V_{GS}$	±15	V
Continuous Drain Current	$I_D$	$T_C = 25\text{ °C}$	1.2
		$T_C = 100\text{ °C}$	1.0
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	12	A
Power Dissipation	$P_D$	$T_C = 25\text{ °C}$	0.6
		$T_C = 100\text{ °C}$	0.5
Operating Junction & Storage Temperature Range	$T_j, T_{stg}$	-55 to 150	°C
Lead Temperature ( <sup>1</sup> / <sub>16</sub> " 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	

<sup>1</sup>Pulse width limited by maximum junction temperature.

**ELECTRICAL CHARACTERISTICS ( $T_C = 25\text{ °C}$ , Unless Otherwise Noted)**

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\text{ }\mu A$	25			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\text{ }\mu A$	0.7	1.0	2.5	
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 15V$			±250	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$			25	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125\text{ °C}$			250	
On-State Drain Current <sup>1</sup>	$I_{D(ON)}$	$V_{DS} = 10V, V_{GS} = 10V$	1.2			A
Drain-Source On-State Resistance <sup>1</sup>	$R_{DS(ON)}$	$V_{GS} = 7V, I_D = 1.2A$		220	250	mΩ
		$V_{GS} = 10V, I_D = 1.2A$		180	220	
Forward Transconductance <sup>1</sup>	$g_{fs}$	$V_{DS} = 20V, I_D = 1.2A$		16		S



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

<sup>1</sup>Pulse test : Pulse Width  $\leq 300\ \mu\text{sec}$ , Duty Cycle  $\leq 2\%$ .<sup>2</sup>Independent of operating temperature.<sup>3</sup>Pulse width limited by maximum junction temperature.**REMARK: THE PRODUCT MARKED WITH "102B"**

**SOT-23 (M3) MECHANICAL DATA**

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A		0.95		H	0.10	0.15	0.25
B	2.60	2.80	3.00	I	0.37		
C	1.40	1.60	1.80	J			
D	2.70	2.90	3.10	K			
E	1.00	1.10	1.30	L			
F	0.00		0.10	M			
G	0.35	0.40	0.50	N			

