

NIKO-SEM P-Channel Logic Level Enhancement Mode Field Effect Transistor

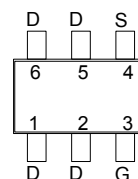
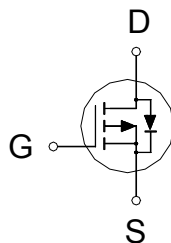
P5103EAG

TSOP-6

Halogen-Free & Lead-Free

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30	51mΩ	-5A



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

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain-Gate Voltage($R_{GS}=20K\Omega$)		V_{DG}	-30	V
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	-5	A
	$T_A = 70\text{ }^\circ\text{C}$		-4.2	
Pulsed Drain Current ¹		I_{DM}	-20	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	2.0	W
	$T_A = 70\text{ }^\circ\text{C}$		1.4	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$t \leq 5\text{sec}$	$R_{\theta JA}$		62.5	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	Steady State	$R_{\theta JA}$		110	$^\circ\text{C} / \text{W}$
Junction-to-Lead	Steady State	$R_{\theta JL}$		50	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu\text{A}$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	-1	-1.8	-3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -20V, V_{GS} = 0V, T_J = 125\text{ }^\circ\text{C}$			-10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -10V$	-20			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -4A$		66	85	mΩ
		$V_{GS} = -10V, I_D = -5A$		42	51	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -10V, I_D = -5A$		10		S

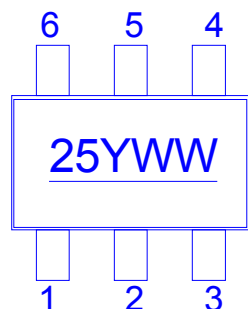
DYNAMIC					
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -10V, f = 1MHz$		700	pF
Output Capacitance	C_{oss}			120	
Reverse Transfer Capacitance	C_{rss}			75	
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V,$ $I_D = -5A$		12.5	nC
Gate-Source Charge ²	Q_{gs}			2.1	
Gate-Drain Charge ²	Q_{gd}			3.5	
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = -15V,$ $I_D \cong -1A, V_{GEN} = -10V, R_{GS} = 6\Omega$		7	nS
Rise Time ²	t_r			10	
Turn-Off Delay Time ²	$t_{d(off)}$			30	
Fall Time ²	t_f			22	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_C = 25^\circ C$)					
Continuous Current	I_S			-3	A
Pulsed Current ³	I_{SM}			-6	
Forward Voltage ¹	V_{SD}	$I_F = -1A, V_{GS} = 0V$		-1	V
Reverse Recovery Charge	Q_{rr}			13.4	nC

¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH “25YWW”, DATE CODE or LOT #



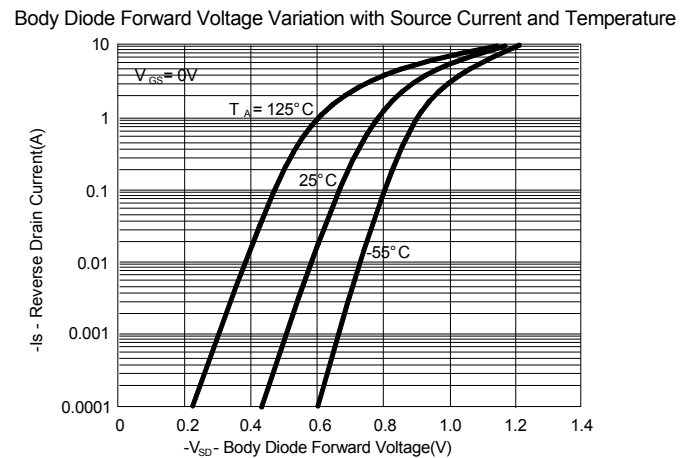
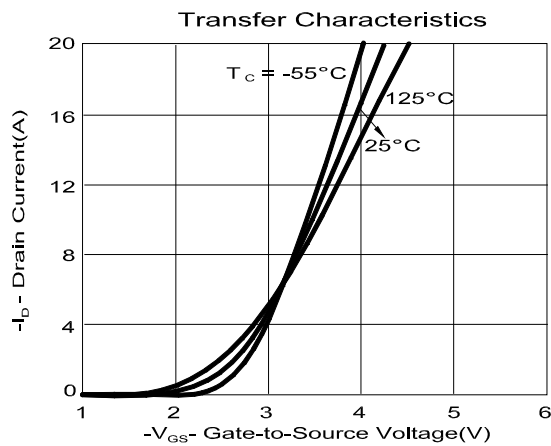
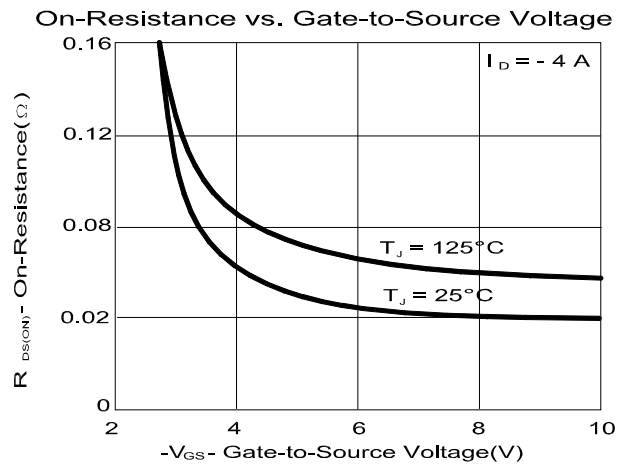
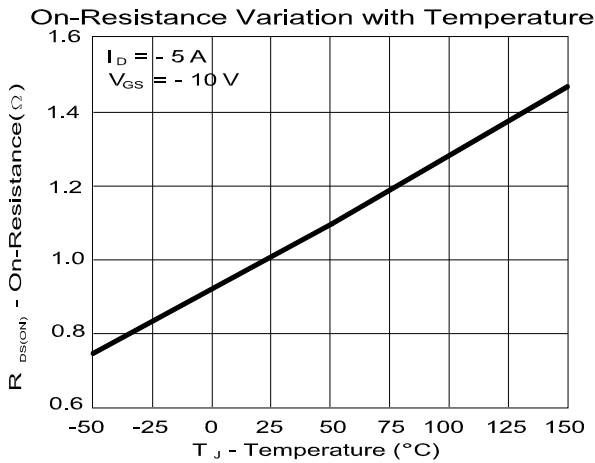
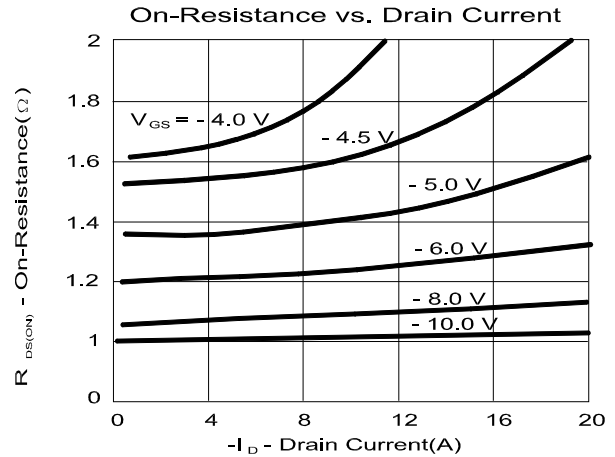
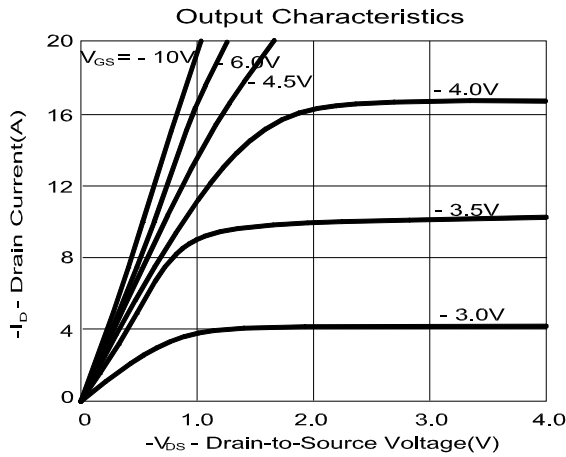
Marking Description:

2 - P MOSFET

5 - Serial Number

Y - Year

W - Week

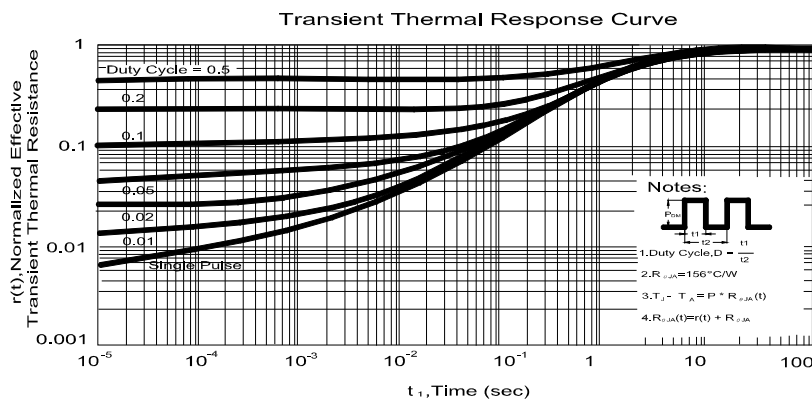
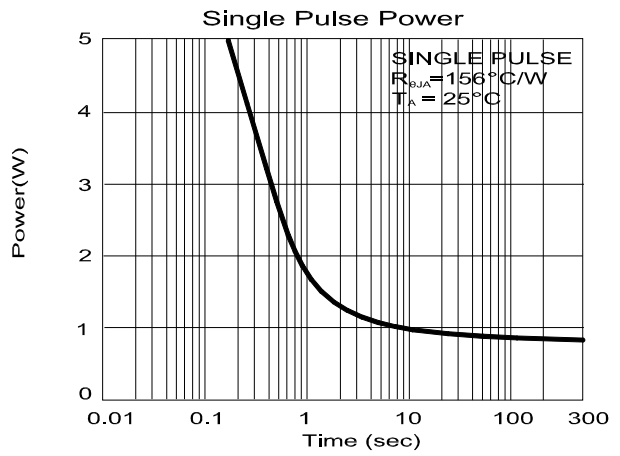
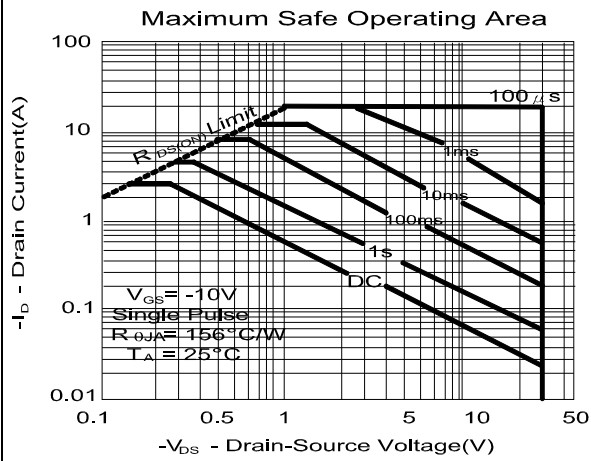
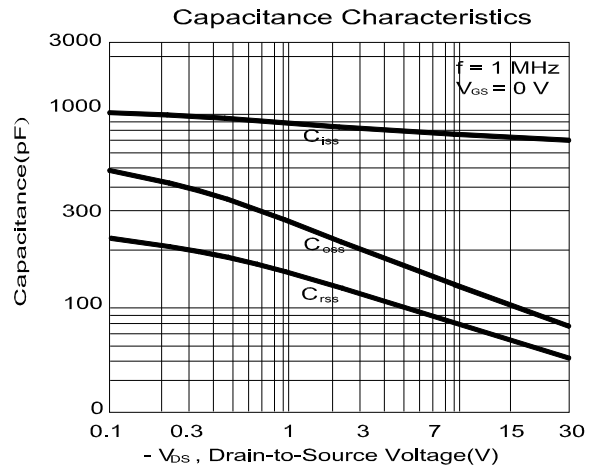
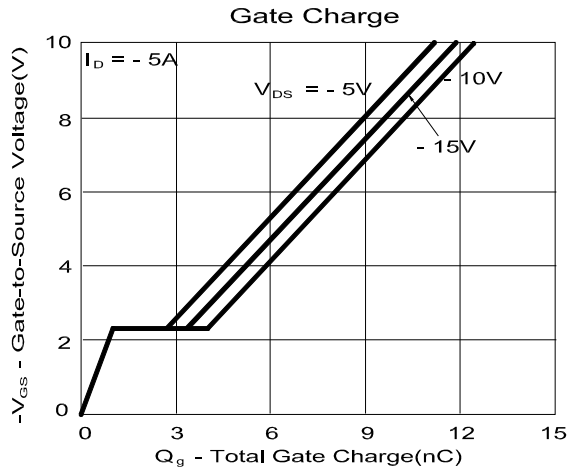


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TSOP- 6 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A		0.95		H	0.08	0.13	0.2
B	2.5	2.8	3.1	I	0.3		0.6
C	1.5	1.6	1.7	J			
D	2.7	2.9	3.1	K			
E	0.7		1.2	L			
F	0		0.15	M			
G	0.3	0.4	0.5	N			

