

NIKO-SEM

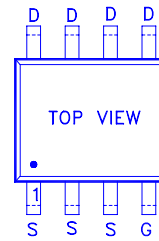
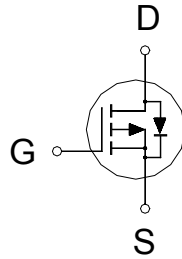
**P-Channel Logic Level Enhancement
Mode Field Effect Transistor**

P06P03LVG

**SOP-8
Lead-Free**

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30	45mΩ	-6A



4 :GATE
5,6,7,8 :DRAIN
1,2,3 :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
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	-6	A
	$T_C = 70\text{ }^\circ\text{C}$		-5	
Pulsed Drain Current ¹		I_{DM}	-30	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	2.5	W
	$T_C = 70\text{ }^\circ\text{C}$		1.3	
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-Case	$R_{\theta JC}$		25	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		50	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

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	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = -250\mu\text{A}$	-30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	-0.9	-1.5	-3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24\text{V}, V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = -20\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ }^\circ\text{C}$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5\text{V}, V_{GS} = -10\text{V}$	-30			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5\text{V}, I_D = -5\text{A}$		60	75	mΩ
		$V_{GS} = -10\text{V}, I_D = -6\text{A}$		37	45	
Forward Transconductance ¹	g_{fs}	$V_{DS} = -10\text{V}, I_D = -6\text{A}$		16		S

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DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -15V, f = 1MHz$		530		pF
Output Capacitance	C_{oss}			135		
Reverse Transfer Capacitance	C_{rss}			70		
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V,$ $I_D = -6A$		10	14	nC
Gate-Source Charge ²	Q_{gs}			2.2		
Gate-Drain Charge ²	Q_{gd}			2		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = -15V, R_L = 1\Omega$ $I_D \cong -1A, V_{GS} = -10V, R_{GS} = 6\Omega$		5.7		nS
Rise Time ²	t_r			10		
Turn-Off Delay Time ²	$t_{d(off)}$			18		
Fall Time ²	t_f			5		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_c = 25^\circ C$)						
Continuous Current	I_S				-2.1	A
Pulsed Current ³	I_{SM}				-4	
Forward Voltage ¹	V_{SD}	$I_F = -1A, V_{GS} = 0V$			-1.2	V
Reverse Recovery Time	t_{rr}	$I_F = -5A, dI_F/dt = 100A / \mu S$		15.5		nS
Reverse Recovery Charge	Q_{rr}				7.9	

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

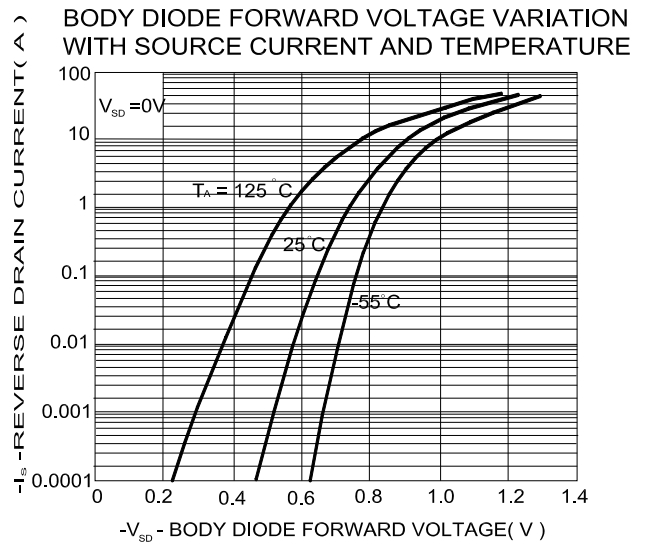
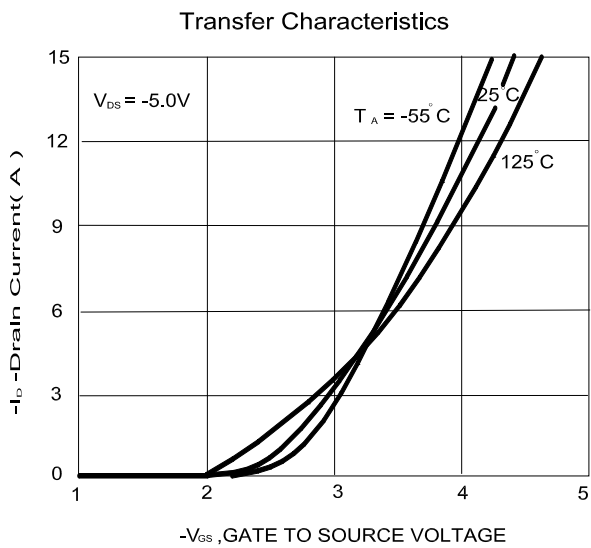
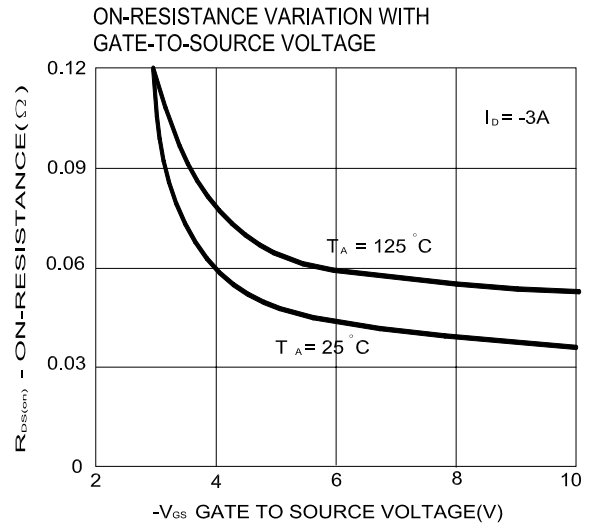
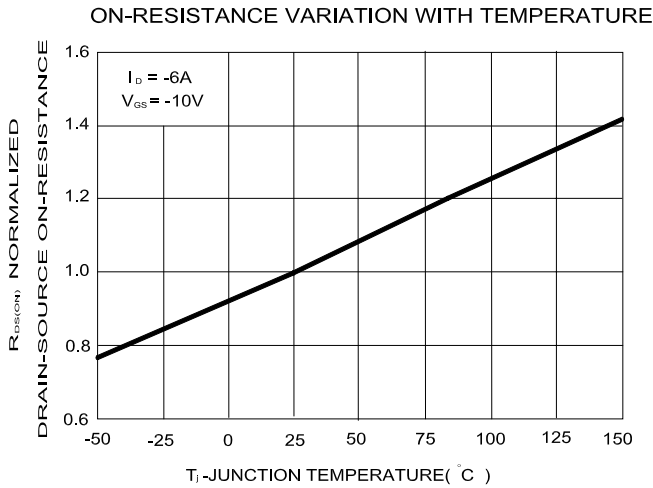
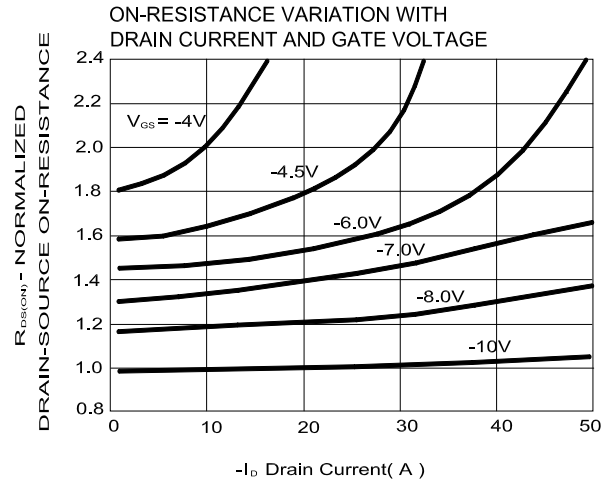
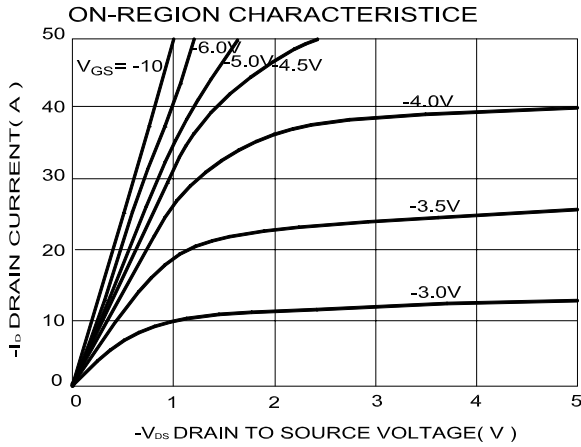
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH "P06P03LVG", DATE CODE or LOT #

Orders for parts with Lead-Free plating can be placed using the PXXXXXXXG parts name.

Typical Characteristics



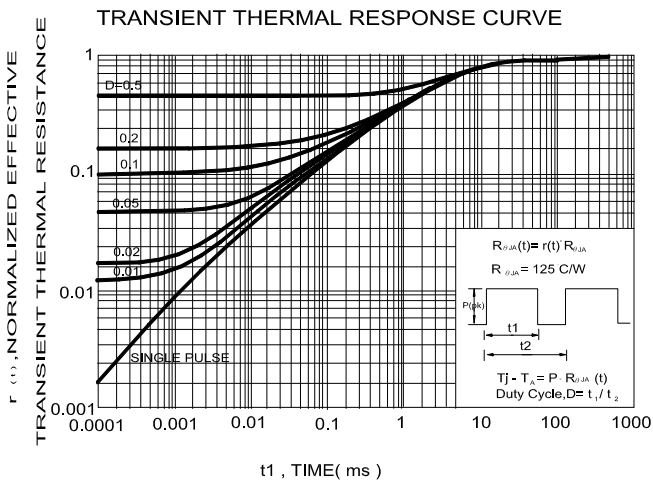
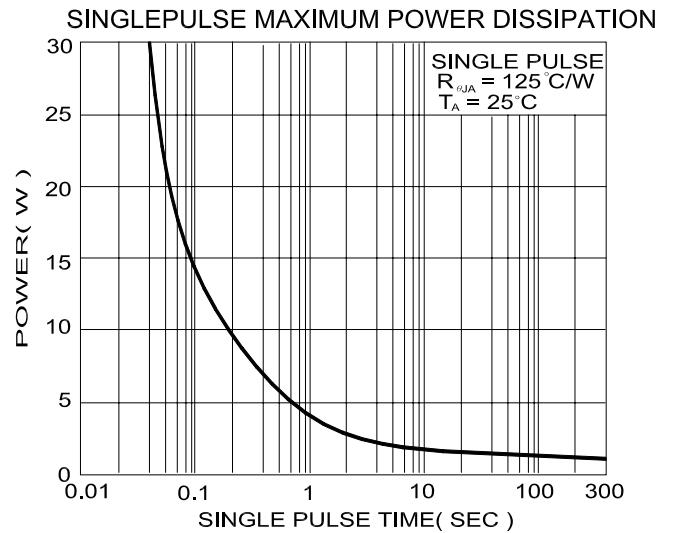
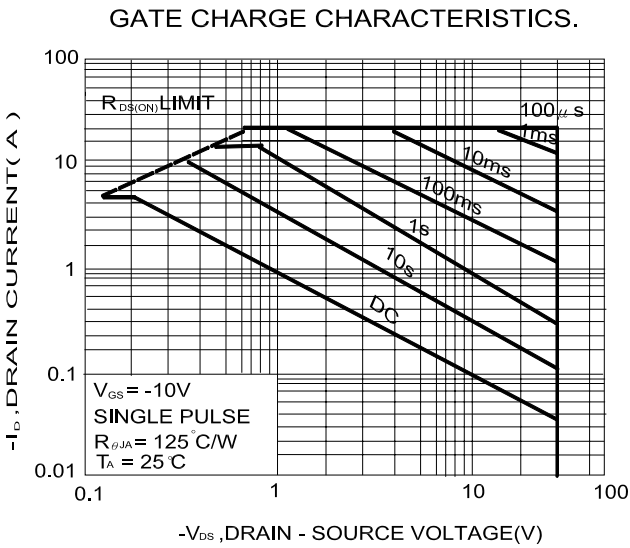
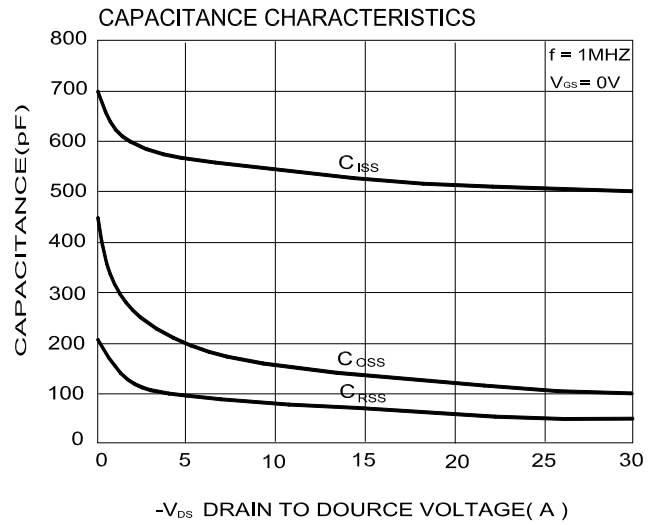
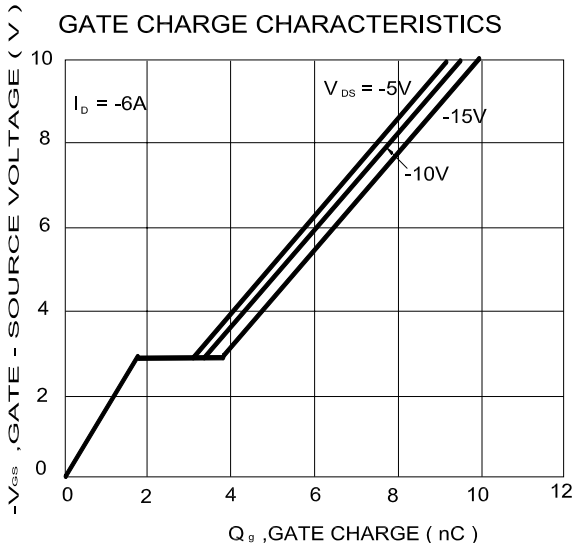
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SOIC-8 (D) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8	4.9	5.0	H	0.5	0.715	0.83
B	3.8	3.9	4.0	I	0.18	0.254	0.25
C	5.8	6.0	6.2	J		0.22	
D	0.38	0.445	0.51	K	0°	4°	8°
E		1.27		L			
F	1.35	1.55	1.75	M			
G	0.1	0.175	0.25	N			

