

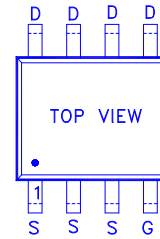
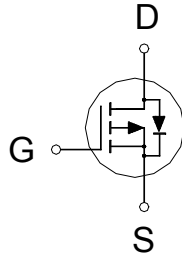
NIKO-SEM P-Channel Logic Level Enhancement Mode P1403EV8

Field Effect Transistor

SOP-8
Halogen-Free & Lead-Free

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-30	14m Ω	-12



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

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

100% UIS tested

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 25	V
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	-12	A
	$T_A = 70\text{ }^\circ\text{C}$		-10	
Pulsed Drain Current ¹		I_{DM}	-65	
Avalanche Current		I_{AS}	-39	
Avalanche Energy	L = 0.1mH	E_{AS}	89	mJ
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	3	W
	$T_A = 70\text{ }^\circ\text{C}$		2	
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	$R_{\theta JA}$		40	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ }^\circ\text{C}$, 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	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	-1	-1.5	-3	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 25\text{V}$			± 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	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5\text{V}, I_D = -9\text{A}$		17.8	22	m Ω
		$V_{GS} = -10\text{V}, I_D = -12\text{A}$		11.3	14	

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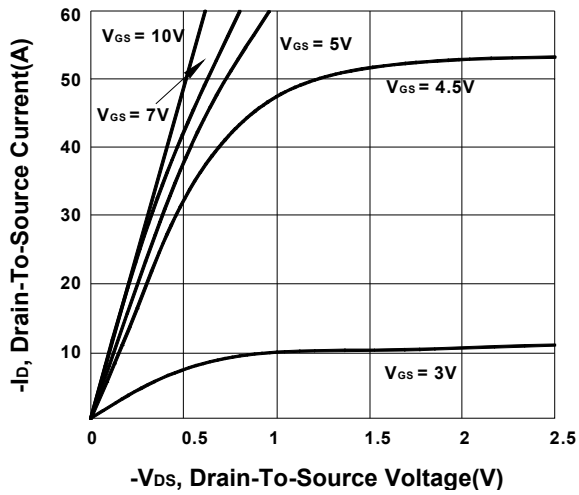
Forward Transconductance ¹	g_{fs}	$V_{DS} = -10V, I_D = -12A$		28		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -15V, f = 1MHz$		2260		pF
Output Capacitance	C_{oss}			410		
Reverse Transfer Capacitance	C_{rss}			204		
Gate Resistance	R_g	$V_{GS} = 15mV, V_{DS} = 0V, f = 1MHz$		4.8	5.8	Ω
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = -10V,$ $I_D = -12A$		38		nC
Gate-Source Charge ²	Q_{gs}			7		
Gate-Drain Charge ²	Q_{gd}			6		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = -15V,$ $I_D \cong -1A, V_{GS} = -10V, R_{GS} = 6\Omega$		12		nS
Rise Time ²	t_r			16		
Turn-Off Delay Time ²	$t_{d(off)}$			50		
Fall Time ²	t_f			100		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)						
Continuous Current	I_S				-2.5	A
Forward Voltage ¹	V_{SD}	$I_F = -12A, V_{GS} = 0V$			-1.2	V

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

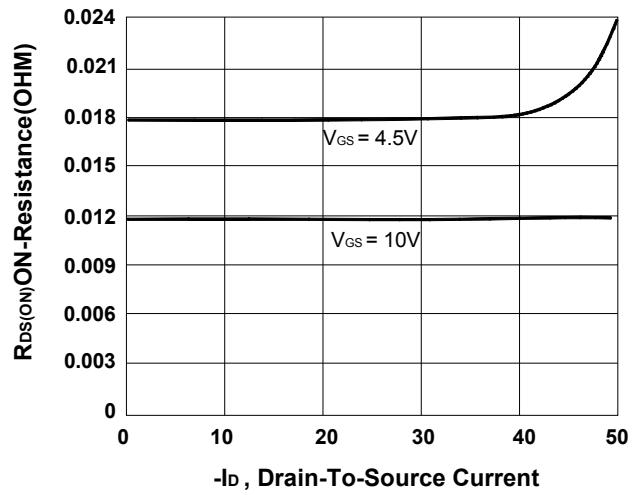
²Independent of operating temperature.

REMARK: THE PRODUCT MARKED WITH "P1403EV8", DATE CODE or LOT #

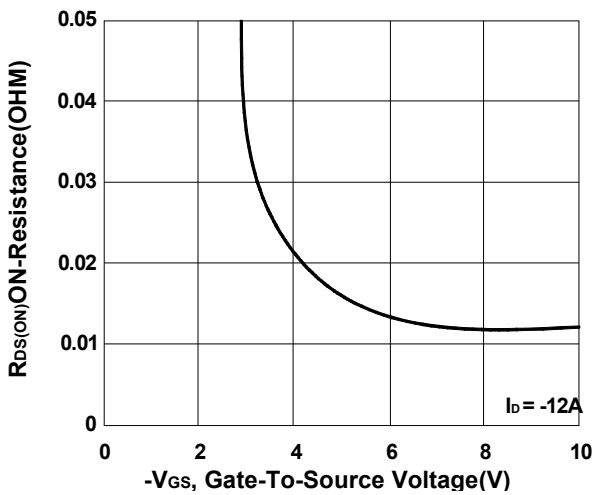
Output Characteristics



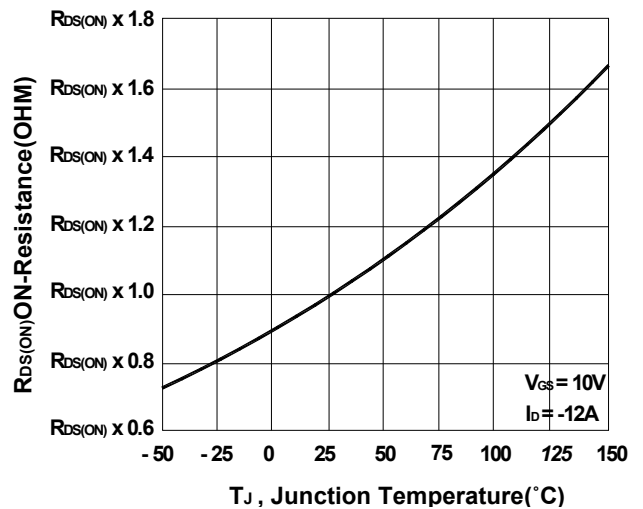
On-Resistance VS Drain Current



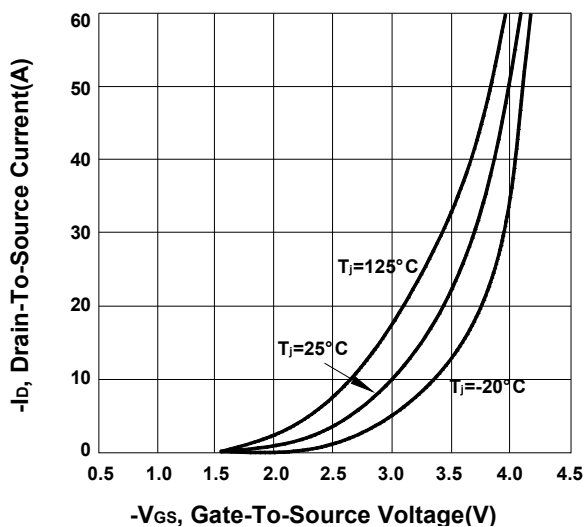
On-Resistance VS Gate-To-Source



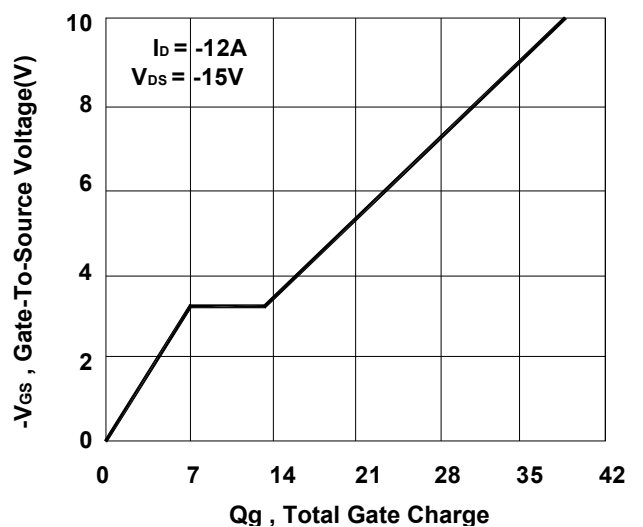
On-Resistance VS Drain Current



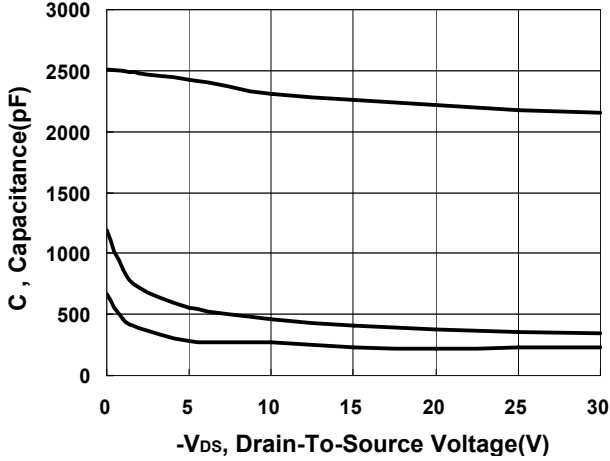
Transfer Characteristics



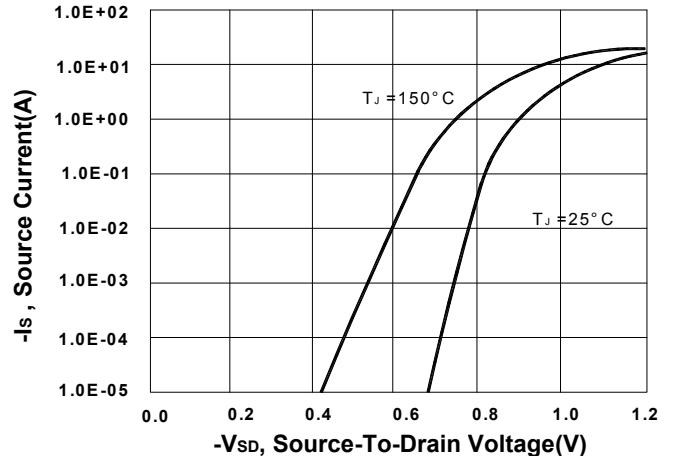
Gate Charge



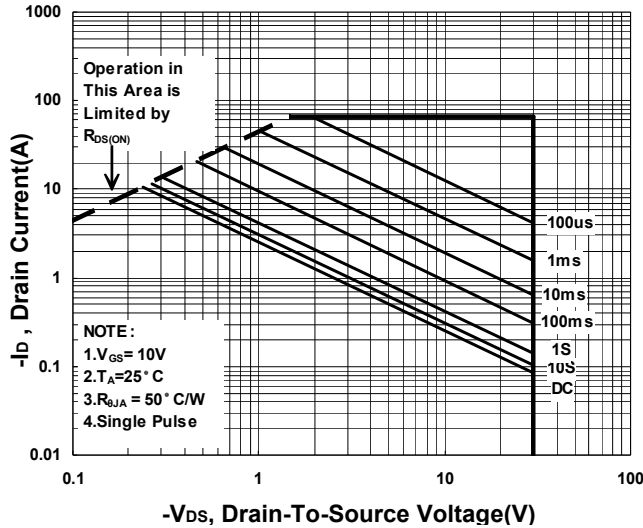
Capacitance Characteristic



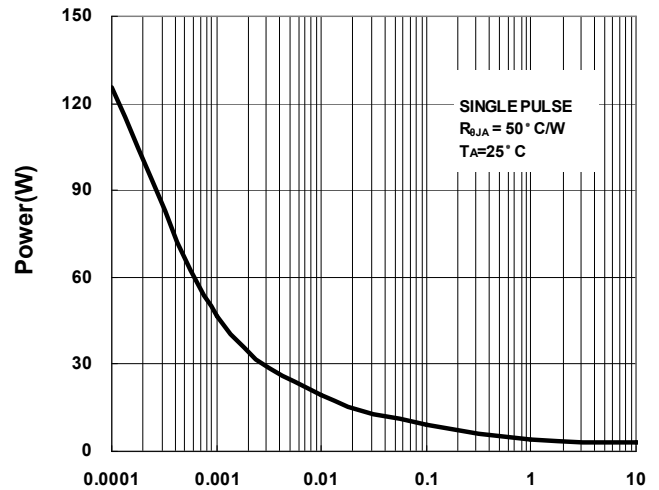
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

