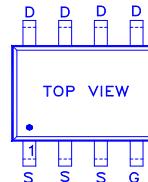
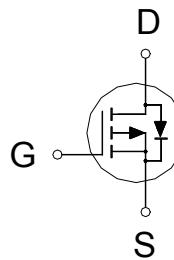


NIKO-SEM
**P-Channel Logic Level Enhancement Mode
Field Effect Transistor**
**PV563BA
SOP-8
Halogen-free & Lead-Free**
PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-40V	15mΩ	-9.5A



G : GATE
D : DRAIN
S : SOURCE

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

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS
Drain-Source Voltage	V_{DS}	-40	V
Gate-Source Voltage	V_{GS}	± 25	V
Continuous Drain Current $T_A = 25^\circ\text{C}$	I_D	-9.5	A
$T_A = 70^\circ\text{C}$	I_D	-7.6	
Pulsed Drain Current ¹	I_{DM}	-40	
Avalanche Current	I_{AS}	-32	
Avalanche Energy	E_{AS}	53	mJ
Power Dissipation ³	P_D	3	W
$T_A = 70^\circ\text{C}$	P_D	2	
Junction & Storage Temperature Range	T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$R_{\theta JA}$		40	°C / W
Junction-to-Ambient ²	$R_{\theta JA}$		75	
Junction-to-Case	$R_{\theta JC}$		24	

¹Pulse width limited by maximum junction temperature.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

³The Power dissipation is based on $R_{\theta JA}$ $t \leq 10\text{s}$ value.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}} = 0\text{V}, I_D = -250\mu\text{A}$	-40			V
Gate Threshold Voltage	$V_{\text{GS}(\text{th})}$	$V_{\text{DS}} = V_{\text{GS}}, I_D = -250\mu\text{A}$	-1.3	-1.5	-3	
Gate-Body Leakage	I_{GSS}	$V_{\text{DS}} = 0\text{V}, V_{\text{GS}} = \pm 25\text{V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{DS}} = -32\text{V}, V_{\text{GS}} = 0\text{V}$			-1	μA
		$V_{\text{DS}} = -30\text{V}, V_{\text{GS}} = 0\text{V}, T_J = 55^\circ\text{C}$			-10	
Drain-Source On-State Resistance ¹	$R_{\text{DS}(\text{ON})}$	$V_{\text{GS}} = -4.5\text{V}, I_D = -9.5\text{A}$		17	29	$\text{m}\Omega$
		$V_{\text{GS}} = -10\text{V}, I_D = -9.5\text{A}$		13	15	
Forward Transconductance ¹	g_{fs}	$V_{\text{DS}} = -5\text{V}, I_D = -9.5\text{A}$		20		S

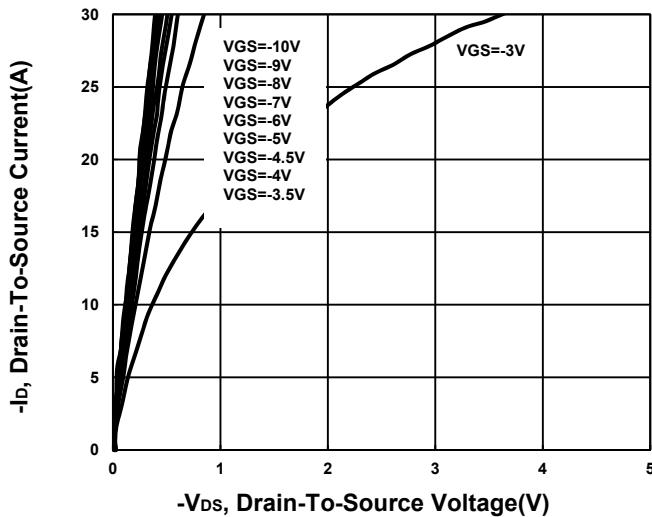
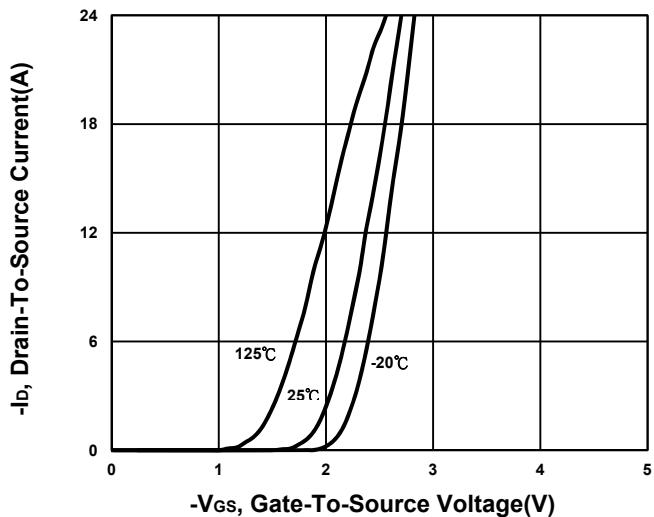
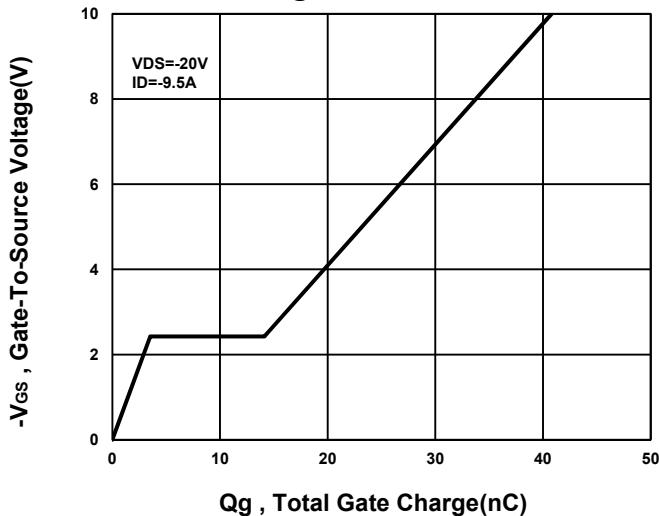
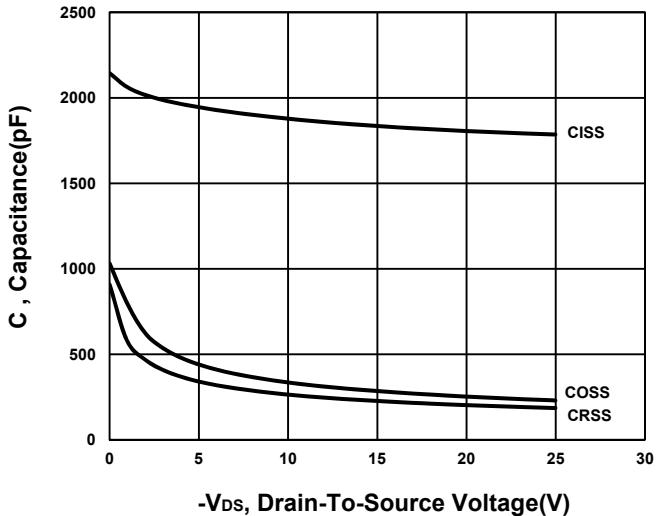
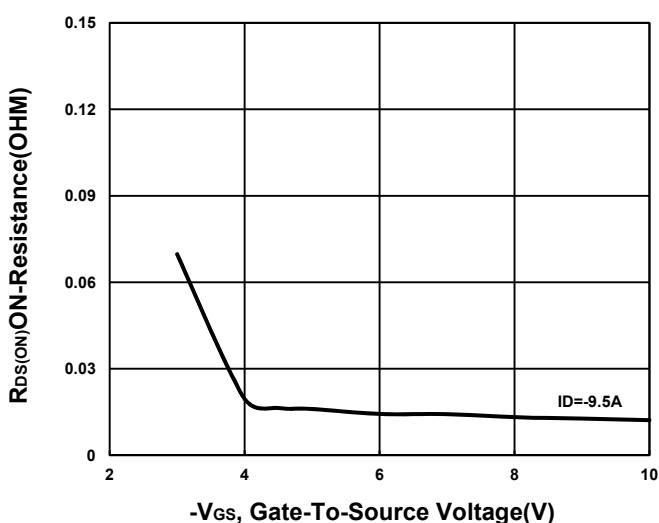
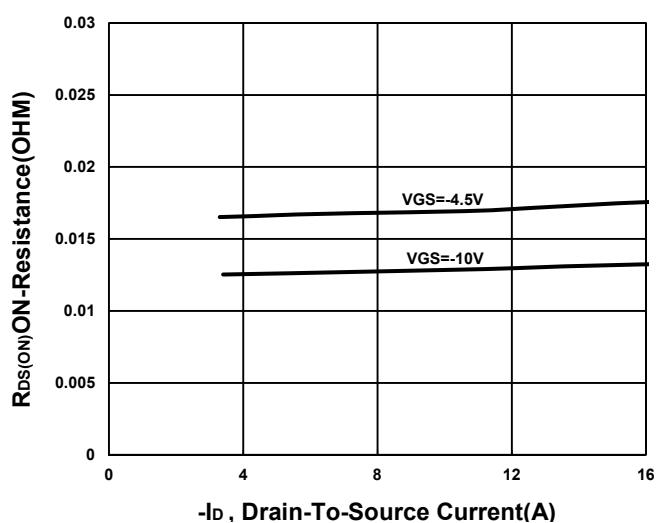
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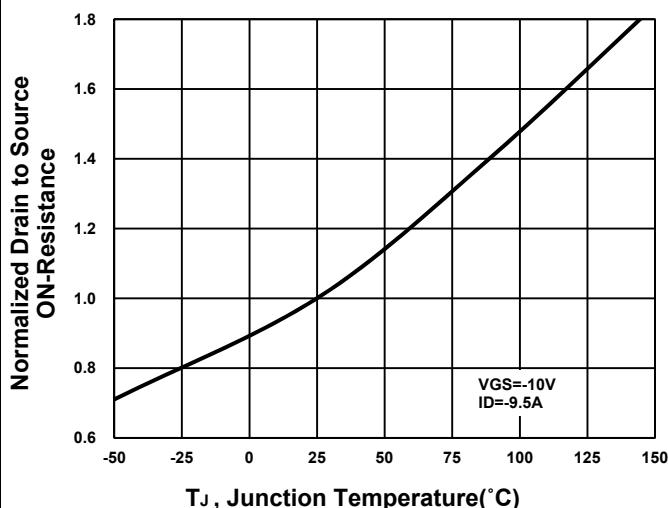
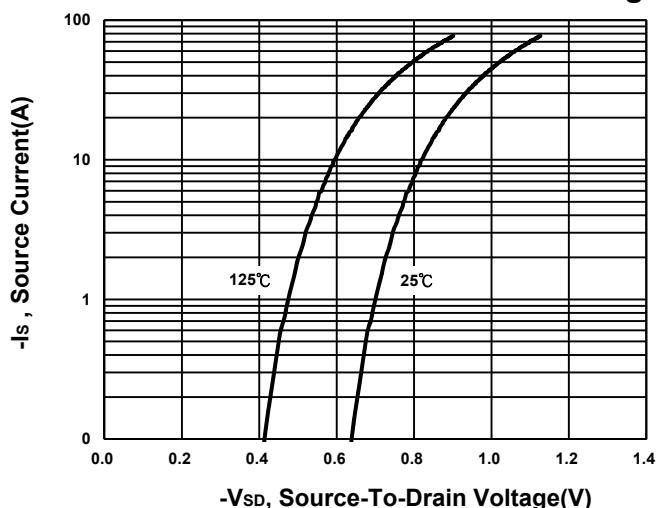
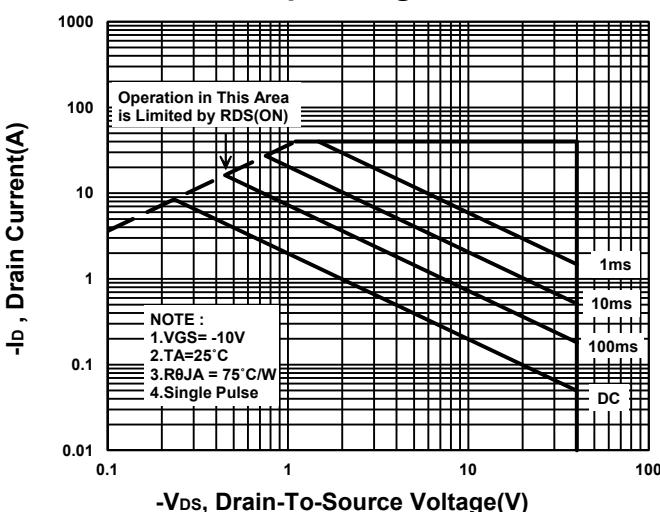
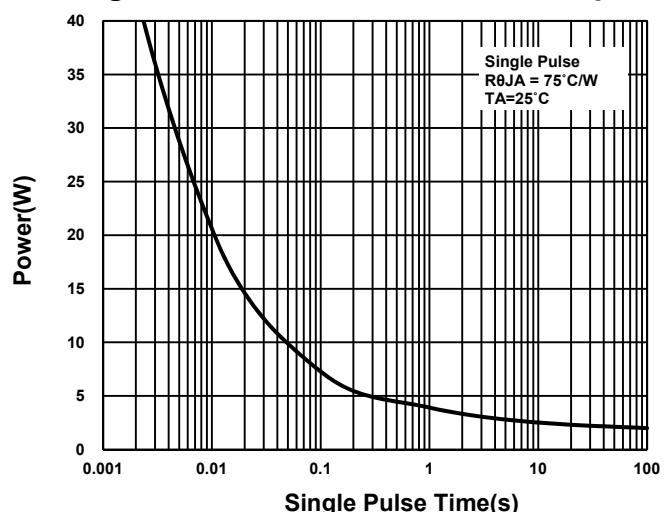
Input Capacitance	C_{iss}	$V_{\text{GS}} = 0\text{V}, V_{\text{DS}} = -20\text{V}, f = 1\text{MHz}$	1883		pF
Output Capacitance	C_{oss}		255		
Reverse Transfer Capacitance	C_{rss}		213		
Gate Resistance	R_g	$V_{\text{GS}} = 0\text{V}, V_{\text{DS}} = 0\text{V}, f = 1\text{MHz}$	4		Ω
Total Gate Charge ²	Q_g	$V_{\text{DS}} = -20\text{V}, V_{\text{GS}} = -10\text{V}, I_D = -9.5\text{A}$	41.2		nC
Gate-Source Charge ²	Q_{gs}		4.2		
Gate-Drain Charge ²	Q_{gd}		14		
Turn-On Delay Time ²	$t_{\text{d}(\text{on})}$	$V_{\text{DD}} = -20\text{V}$ $I_D \geq -9.5\text{A}, V_{\text{GS}} = -10\text{V}, R_{\text{GEN}} = 3\Omega$	9.4		nS
Rise Time ²	t_r		20		
Turn-Off Delay Time ²	$t_{\text{d}(\text{off})}$		55		
Fall Time ²	t_f		30		

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ\text{C}$)

Continuous Current	I_S			-2.3	A
Forward Voltage ¹	V_{SD}	$I_F = -9.5\text{A}, V_{\text{GS}} = 0\text{V}$		-1.3	V
Reverse Recovery Time	t_{rr}	$I_F = -9.5\text{A}, dI/dt = 100\text{A}/\mu\text{s}$	20		nS
Reverse Recovery Charge	Q_{rr}		6		nC

¹Pulse test : Pulse Width $\leq 300\ \mu\text{sec}$, Duty Cycle $\leq 2\%$.²Independent of operating temperature.

NIKO-SEM**P-Channel Logic Level Enhancement Mode
Field Effect Transistor****PV563BA
SOP-8
Halogen-free & Lead-Free****Output Characteristics****Transfer Characteristics****Gate charge Characteristics****Capacitance Characteristic****On-Resistance VS Gate-To-Source****On-Resistance VS Drain Current**

NIKO-SEM**P-Channel Logic Level Enhancement Mode
Field Effect Transistor****PV563BA
SOP-8
Halogen-free & Lead-Free****On-Resistance VS Temperature****Source-Drain Diode Forward Voltage****Safe Operating Area****Single Pulse Maximum Power Dissipation****Transient Thermal Response Curve**