NIKO-SEM

Dual N-Channel Enhancement Mode Field Effect Transistor

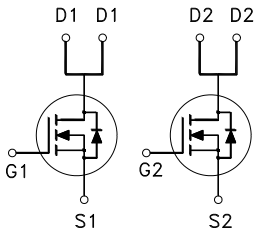
PC015HVA

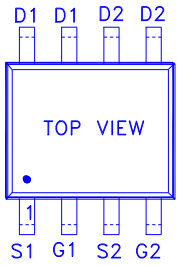
SOP-8

Halogen-free & Lead-Free

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
150V	300mΩ	1.4A





RoHS Compliant

G : GATE
D : DRAIN
S : SOURCE

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	150	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A = 25 °C	I_D	1.4	A
	T_A = 70 °C		1.1	
Pulsed Drain Current[1]		I_{DM}	9	
Avalanche Current		I_{AS}	2.1	
Avalanche Energy	L = 1mH	E_{AS}	2.2	mJ
Power Dissipation	T_A = 25 °C	P_D	1.5	W
	T_A = 70 °C		0.9	
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]	$R_{\theta JA}$		85	°C / W

[1]Pulse width limited by maximum junction temperature.
[2] The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

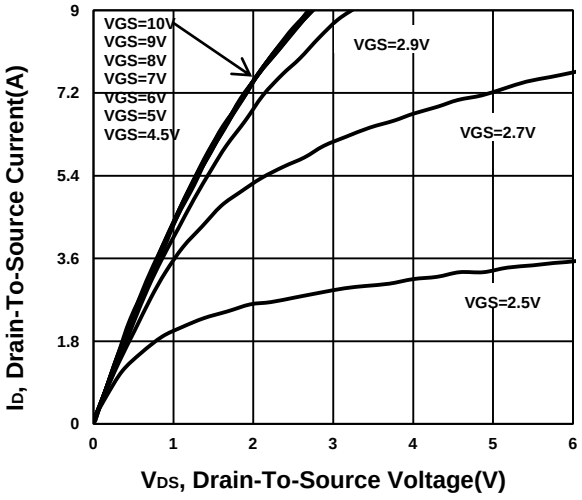
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250µA	150			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250µA	1.3	1.7	2.3	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 120V, V_{GS} = 0V			1	µA
		V_{DS} = 100V, V_{GS} = 0V, T_J = 55 °C			10	

Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 1.4A		203	450	mΩ
		V_{GS} = 10V, I_D = 1.4A		199	300	
Forward Transconductance[1]	g_{fs}	V_{DS} = 10V, I_D = 1.4A		10		S

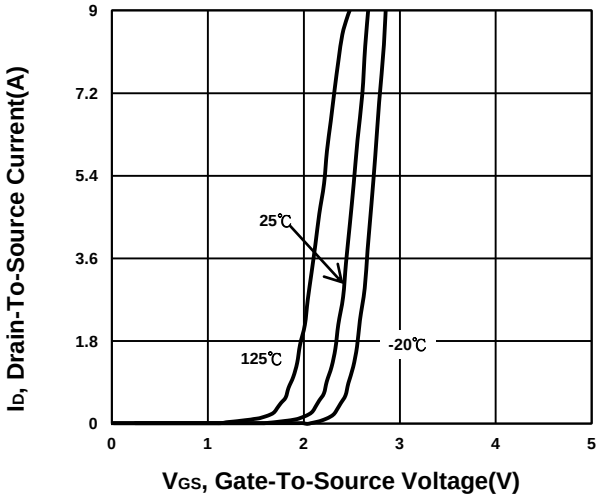
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		611		pF
Output Capacitance	C_{oss}			42		
Reverse Transfer Capacitance	C_{rss}			27		
Gate Resistance	R_g	V_{GS} = 0V, V_{DS} = 0V, f = 1MHz		1.4		Ω
Total Gate Charge[2]	Q_g	V_{DS} = 75V , V_{GS} = 10V, I_D = 1.4A		14		nC
Gate-Source Charge[2]	Q_{gs}			1.4		
Gate-Drain Charge[2]	Q_{gd}			4		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = 75V $I_D \cong$ 1.4A, V_{GS} = 10V, R_{GEN} = 6Ω		11		nS
Rise Time[2]	t_r			6.6		
Turn-Off Delay Time[2]	$t_{d(off)}$			29		
Fall Time[2]	t_f			6		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				1.6	A
Forward Voltage[1]	V_{SD}	I_F = 1.4 A, V_{GS} = 0V			1.3	V
Reverse Recovery Time	t_{rr}	I_F=1.4A, dI/dt=100A/μs		43		nS
Reverse Recovery Charge	Q_{rr}			21		uC

[1]Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.
[2]Independent of operating temperature.

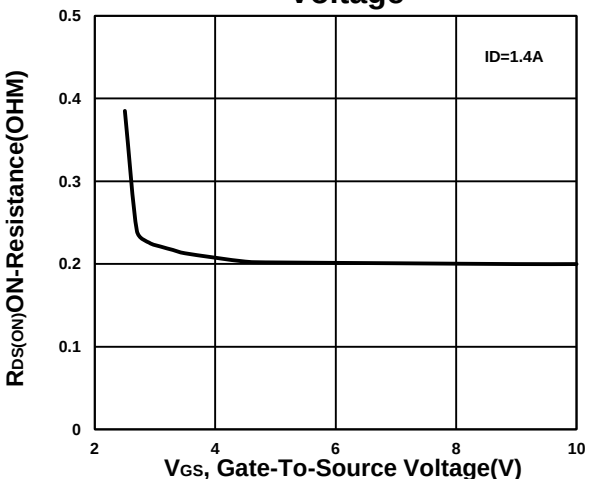
Output Characteristics



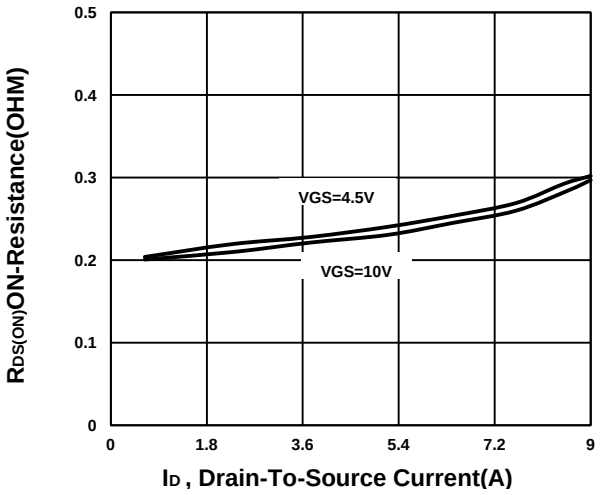
Transfer Characteristics



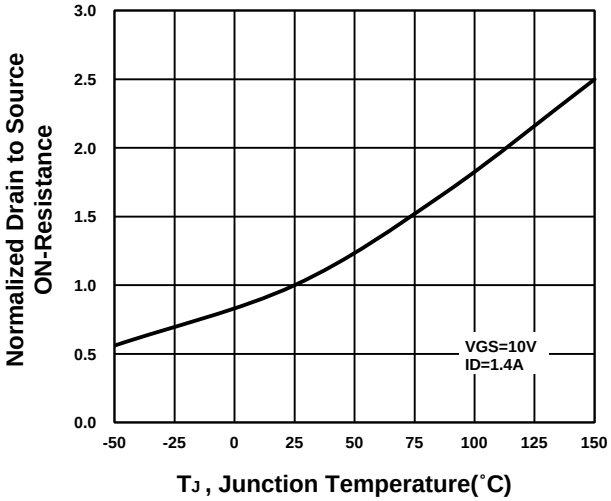
On-Resistance VS Gate-To-Source Voltage



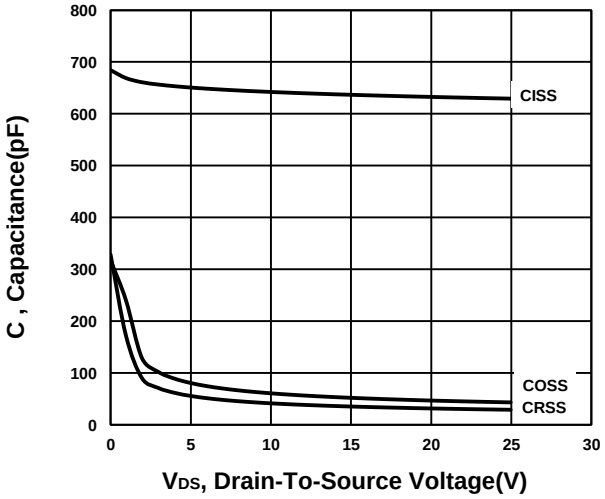
On-Resistance VS Drain Current



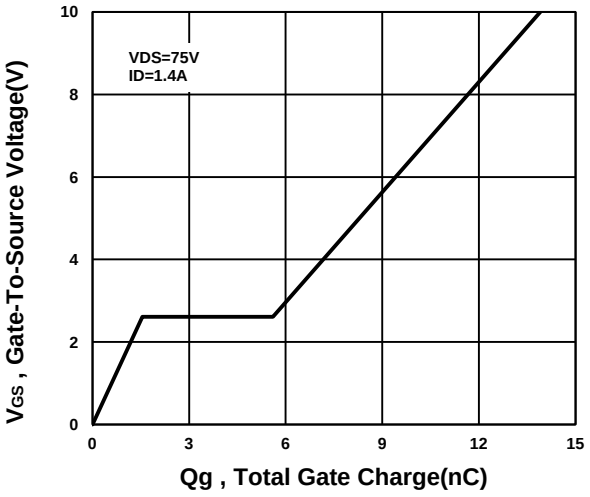
On-Resistance VS Temperature



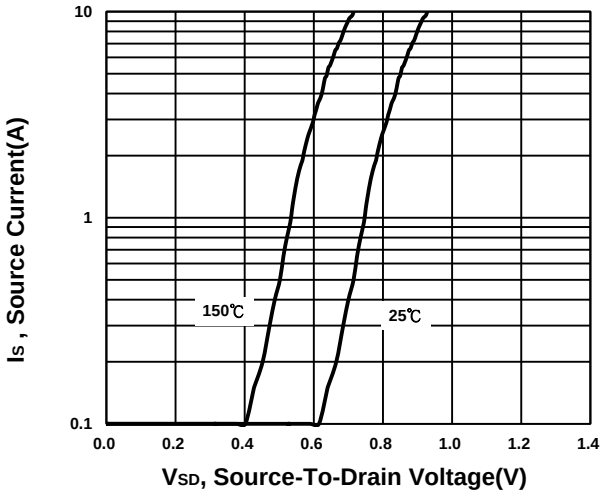
Capacitance Characteristic



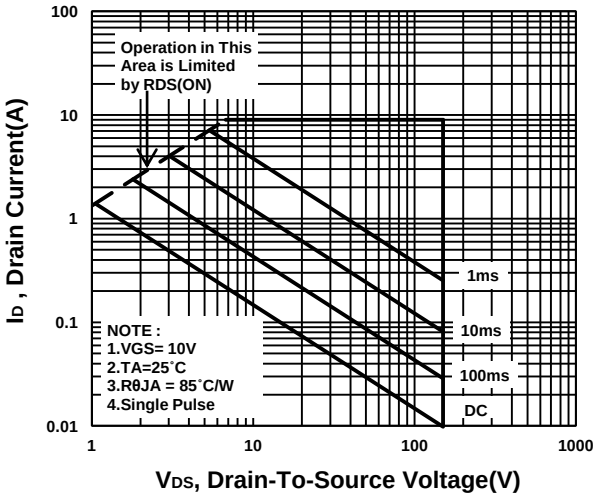
Gate charge Characteristics



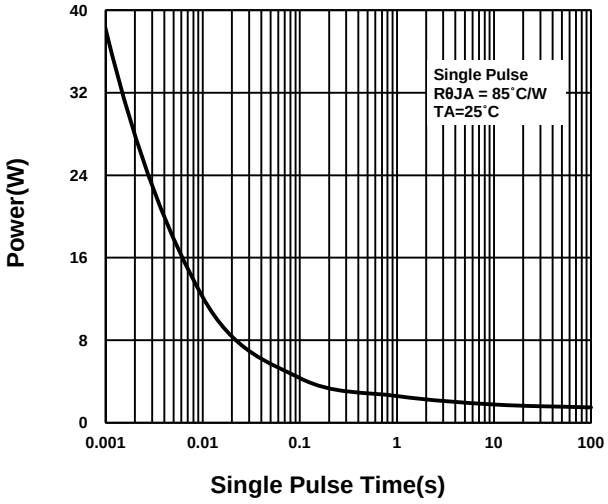
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve