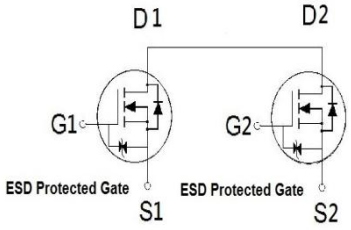
NIKO-SEM

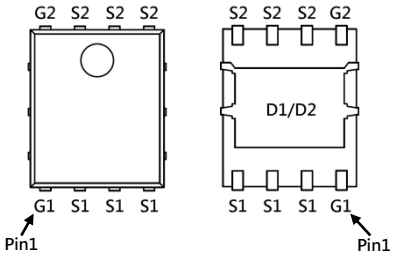
Dual Common Drain N-Channel MOSFET

PKE24DB
PDFN 5x6P
Halogen-Free & Lead-Free

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	2mΩ	134A





G : GATE
D : DRAIN
S : SOURCE

Features
- Patent Pending.
- Pb−Free, Halogen Free and RoHS compliant.
- Low $R_{DS(on)}$ to Minimize Conduction Losses.
- Ohmic Region Good $R_{DS(on)}$ Ratio.
- Optimized Gate Charge to Minimize Switching Losses.
- Products Integrated ESD diode

Applications
- Protection Circuits Applications.
- Protable Devices for Battery PACK Applications.

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °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[2]	T_C = 25 °C	I_D	134	A
	T_C = 100 °C		85	
	T_A = 25 °C		36	
	T_A = 70 °C		28	
Pulsed Drain Current[1]		I_{DM}	195	
Avalanche Current		I_{AS}	48	
Avalanche Energy	L = 0.1mH	E_{AS}	115	mJ
Power Dissipation[4]	T_C = 25 °C	P_D	60	W
	T_C = 100 °C		24	
	T_A = 25 °C		4.2	
	T_A = 70 °C		2.7	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient[3]	t ≦10s	$R_{\theta JA}$		30	°C／W
Junction-to-Ambient[3]	Steady-State	$R_{\theta JA}$		50	
Junction-to-case	Steady-State	$R_{\theta JC}$		2.1	

[1]Pulse width limited by maximum junction temperature.
[2]The maximum current rating is package limited.
[3]The 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°C.
[4]The Power dissipation is based on $R_{\theta JA}$ t ≦10s value.

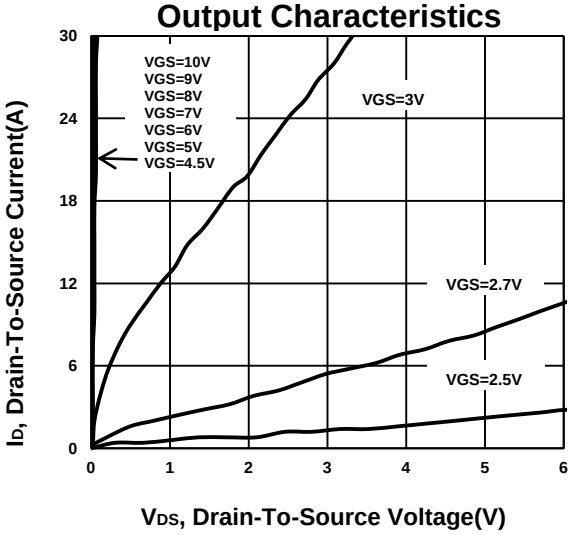
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS MIN	LIMITS TYP	LIMITS MAX	UNIT
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1.3	1.9	2.3	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 24V, V_{GS} = 0V			1	uA
		V_{DS} = 20V, V_{GS} = 0V, T_J = 125 °C			10	
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 4.5V, I_D = 13A		2.2	3.5	mΩ
		V_{GS} = 10V, I_D = 13A		1.3	2	
Forward Transconductance[1]	g_{fs}	V_{DS} = 5V, I_D = 13A		72		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 15V, f = 1MHz		3108		pF
Output Capacitance	C_{oss}			1601		
Reverse Transfer Capacitance	C_{rss}			136		
Gate Resistance	R_g	V_{GS} = 0V, V_{DS} = 0V, f = 1MHz		0.95		Ω
Total Gate Charge[2]	$Q_{g(V_{GS}=10V)}$	V_{DS} = 15V, I_D = 13A		62		nC
	$Q_{g(V_{GS}=4.5V)}$			32		
Gate-Source Charge[2]	Q_{gs}			8.4		
Gate-Drain Charge[2]	Q_{gd}			15.3		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = 15V I_D ≅ 13A, V_{GEN} = 10V, R_G = 6Ω		23		nS
Rise Time[2]	t_r			78		
Turn-Off Delay Time[2]	$t_{d(off)}$			79		
Fall Time[2]	t_f			81		

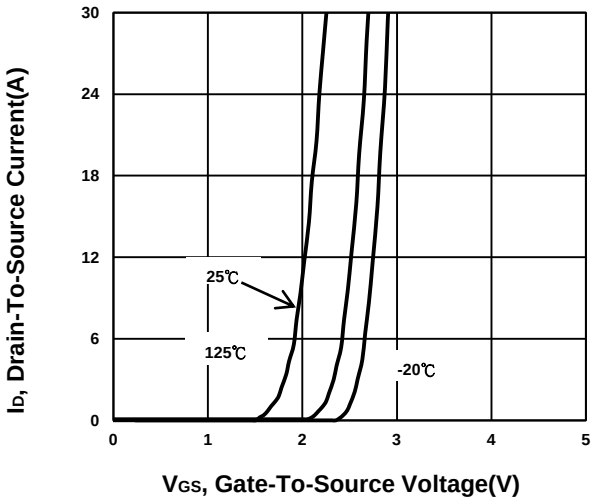
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current[3]	I_S				50	A
Forward Voltage[1]	V_{SD}	I_F = 13A, V_{GS} = 0V			1.2	V
Reverse Recovery Time	t_{rr}	I_F = 13A , dI_F/dt = 100A / μS		54		nS
Reverse Recovery Charge	Q_{rr}			57		nC

[1]Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.
[2]Independent of operating temperature.
[3]The maximum current rating is package limited.

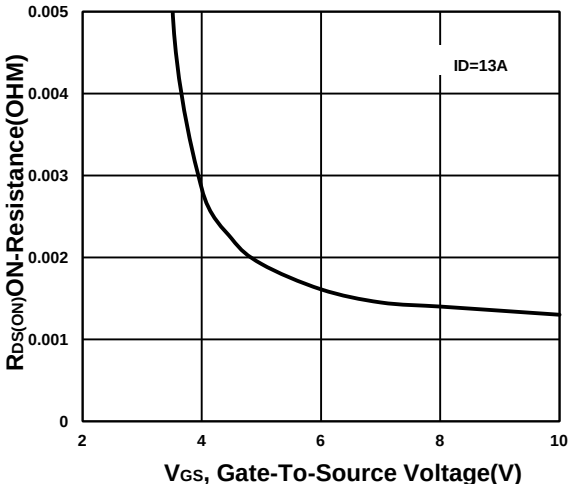
Output Characteristics



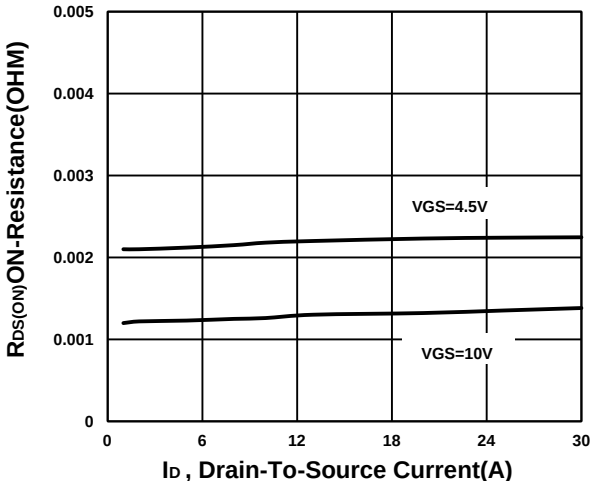
Transfer Characteristics



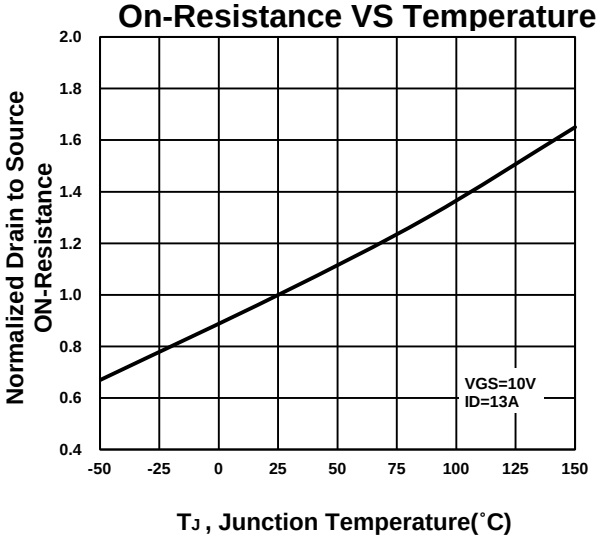
On-Resistance VS Gate-To-Source Voltage



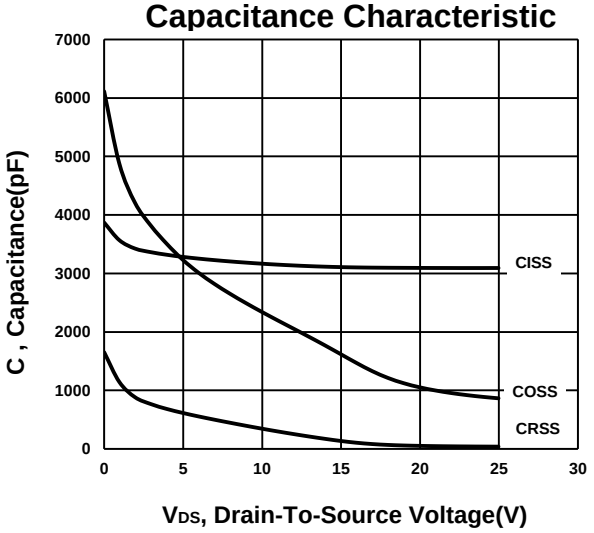
On-Resistance VS Drain Current



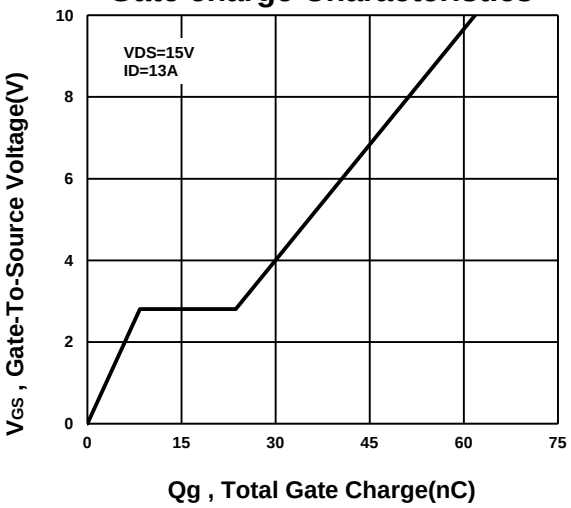
On-Resistance VS Temperature



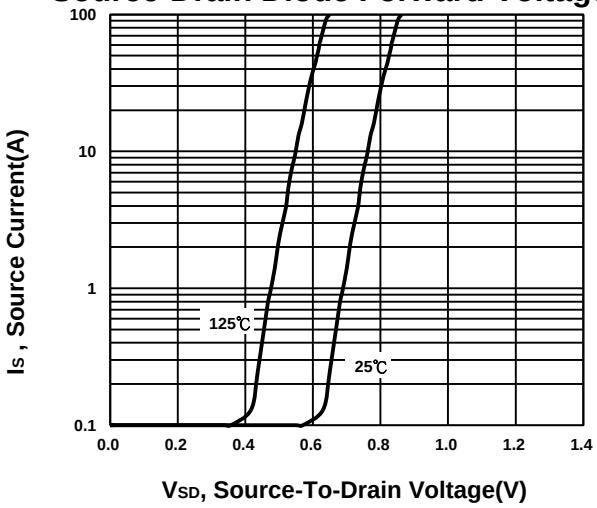
Capacitance Characteristic



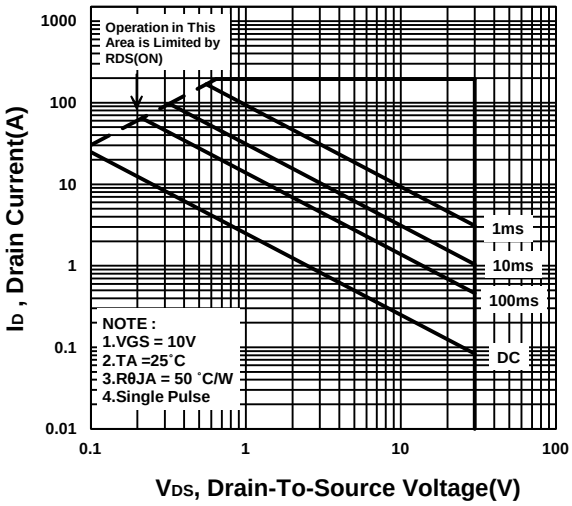
Gate charge Characteristics



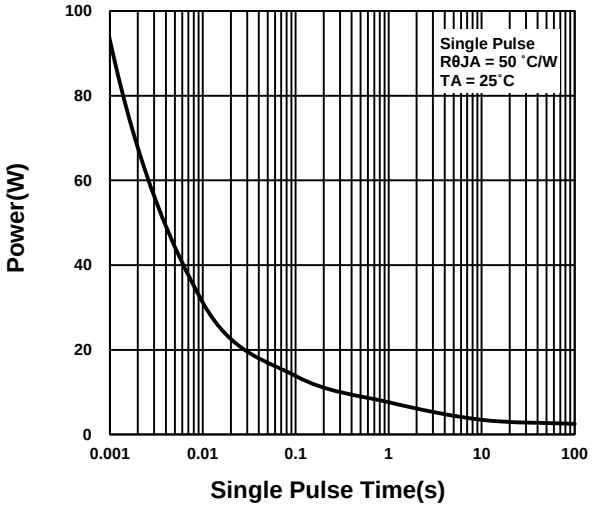
Source-Drain Diode Forward Voltage



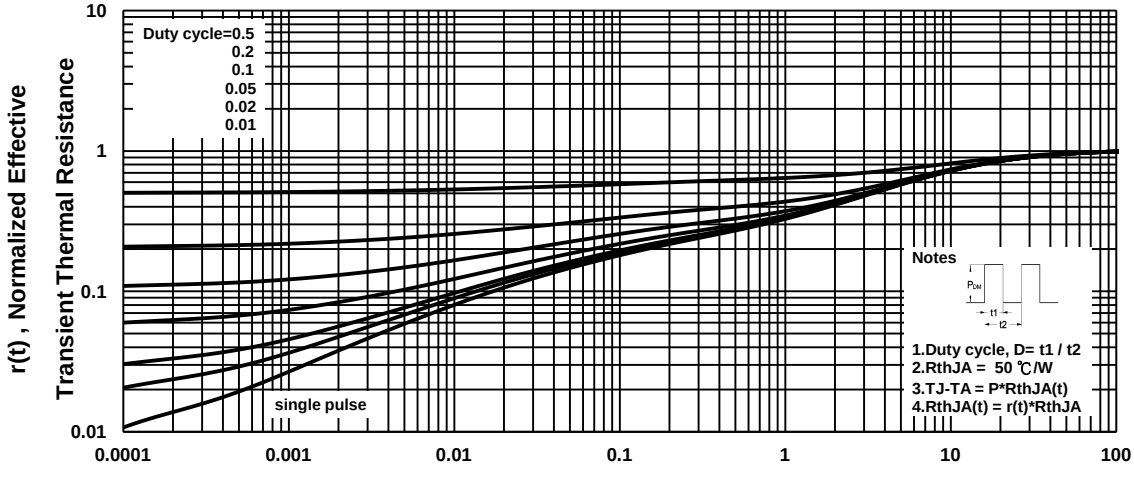
Safe Operating Area



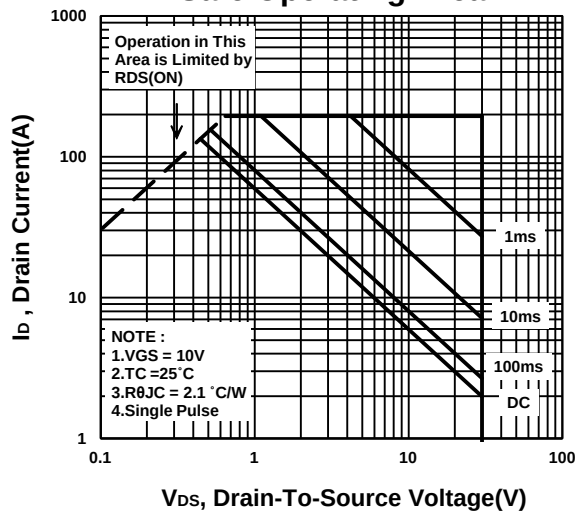
Single Pulse Maximum Power Dissipation



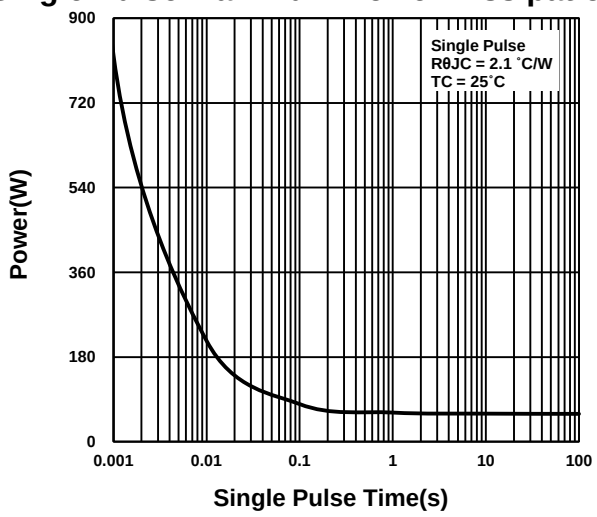
Transient Thermal Response Curve



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

