NIKO-SEM

N-Channel Enhancement Mode Field Effect Transistor

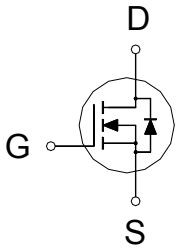
P2610ADG

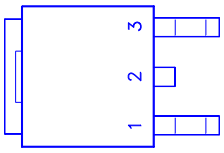
TO-252

Halogen-Free & Lead-Free

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
100V	26mΩ	50A





1. GATE
2. DRAIN
3. SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C = 25 °C	I_D	50	A
	T_C = 100 °C		35.5	
Pulsed Drain Current[1]		I_{DM}	150	
Avalanche Current		I_{AS}	53	A
Avalanche Energy	L = 0.1mH	E_{AS}	140	mJ
Power Dissipation	T_C = 25 °C	P_D	128	W
	T_C = 100 °C		51	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		0.97	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

[1]Pulse width limited by maximum junction temperature.

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

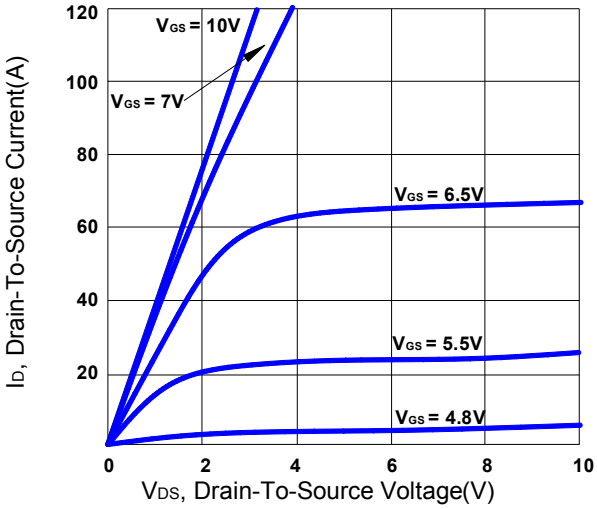
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1.7	2.5	3.4	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±250	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 80V, V_{GS} = 0V			1	μA
		V_{DS} = 80V, V_{GS} = 0V, T_J = 125 °C			10	
On-State Drain Current[1]	$I_{D(ON)}$	V_{DS} = 10V, V_{GS} = 10V	150			A

Drain-Source-On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = 10V, I_D = 25A		21	26	mΩ
Forward Transconductance[1]	g_{fs}	V_{DS} = 40V, I_D = 25A		38		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		5000		pF
Output Capacitance	C_{oss}			285		
Reverse Transfer Capacitance	C_{rss}			189		
Total Gate Charge[2]	Q_g	V_{DS} =80V, V_{GS} = 10V, I_D = 27.5A		80		nC
Gate-Source Charge[2]	Q_{gs}			28		
Gate-Drain Charge[2]	Q_{gd}			23		
Gate Resistance	R_g	V_{GS} = 15mV, V_{DS} = 0V, f = 1MHz		2		Ω
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DD} = 50V, I_D ≅ 25A, V_{GS} = 10V, R_{GS} = 25Ω		25		nS
Rise Time[2]	t_r			250		
Turn-Off Delay Time[2]	$t_{d(off)}$			110		
Fall Time[2]	t_f			140		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				50	A
Forward Voltage[1]	V_{SD}	I_F = 25A, V_{GS} = 0V			1.5	V
Reverse Recovery Time	t_{rr}	I_F = 25A, dI_F/dt = 100A / μS		100		nS
Reverse Recovery Charge	Q_{rr}			380		nC

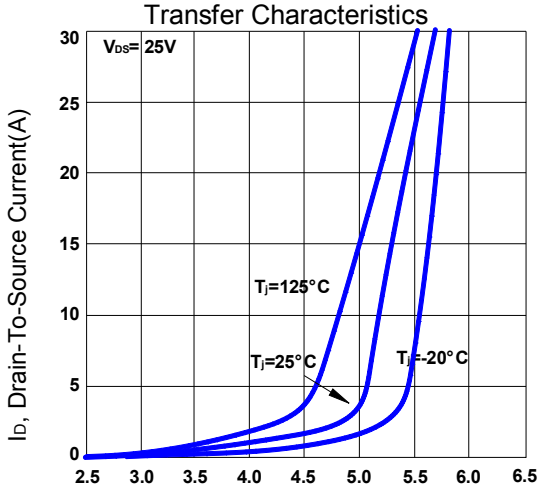
[1]Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.
[2]Independent of operating temperature.

REMARK: THE PRODUCT MARKED WITH "P2610ADG", DATE CODE or LOT #

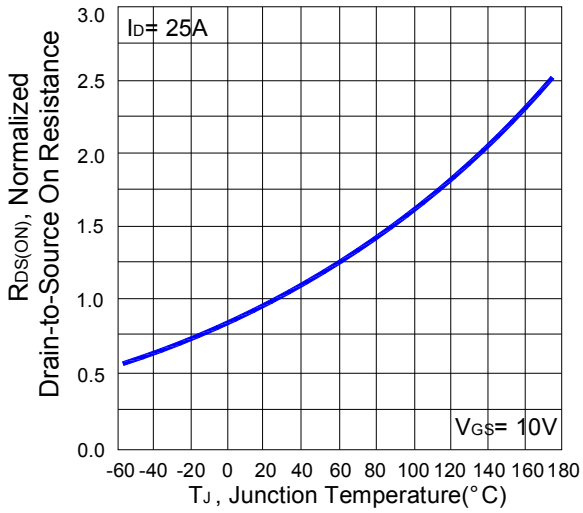
Output Characteristics



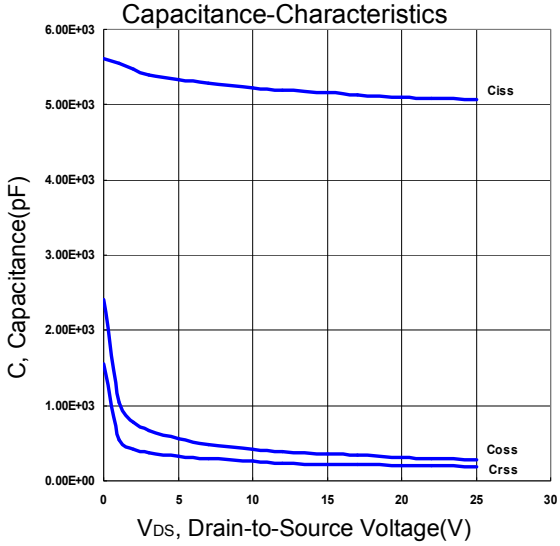
Transfer Characteristics



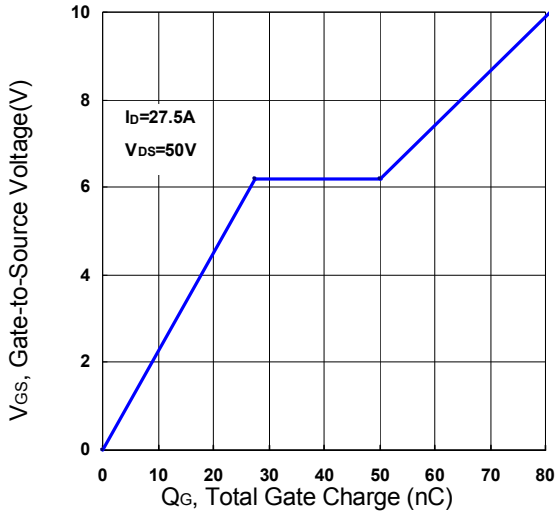
Normalized On-Resistance Vs.Temperature



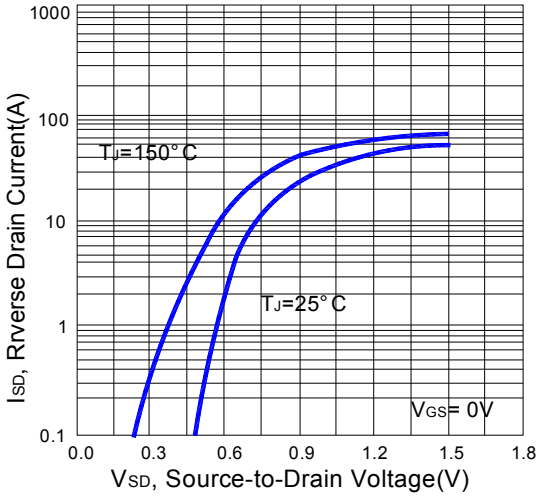
Capacitance-Characteristics



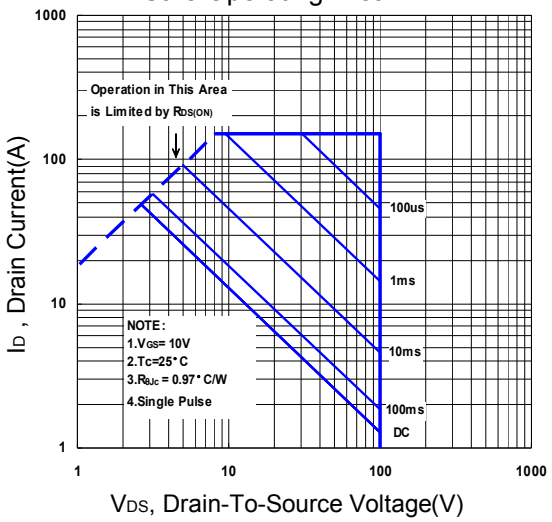
Typical Gate Charge Vs. Gate-to-Source Voltage



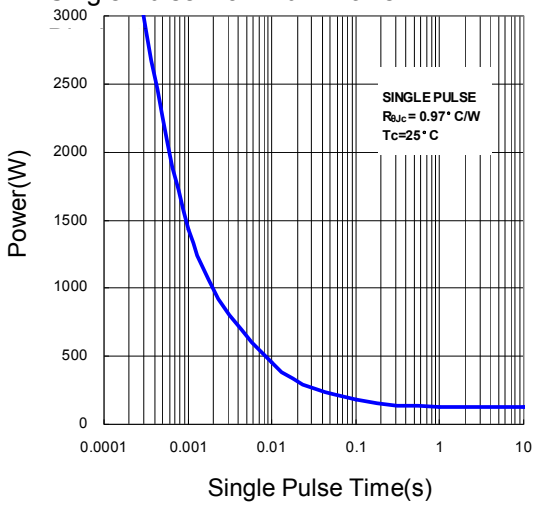
Typical Source-Drain Diode Forward Voltage



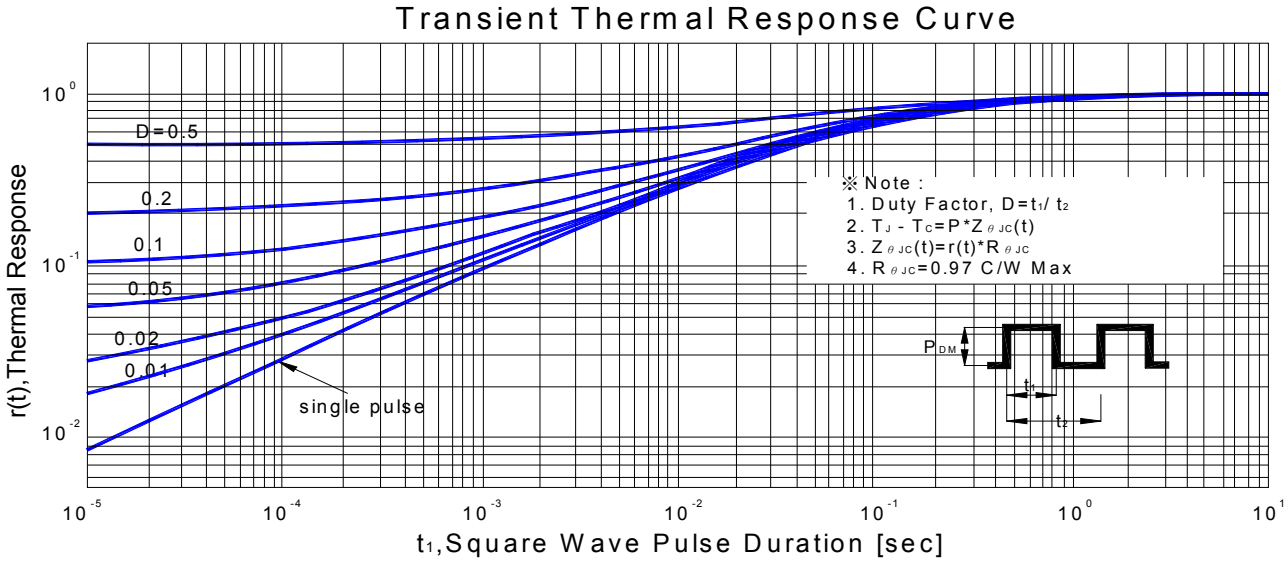
Safe Operating Area



Single Pulse Maximum Power

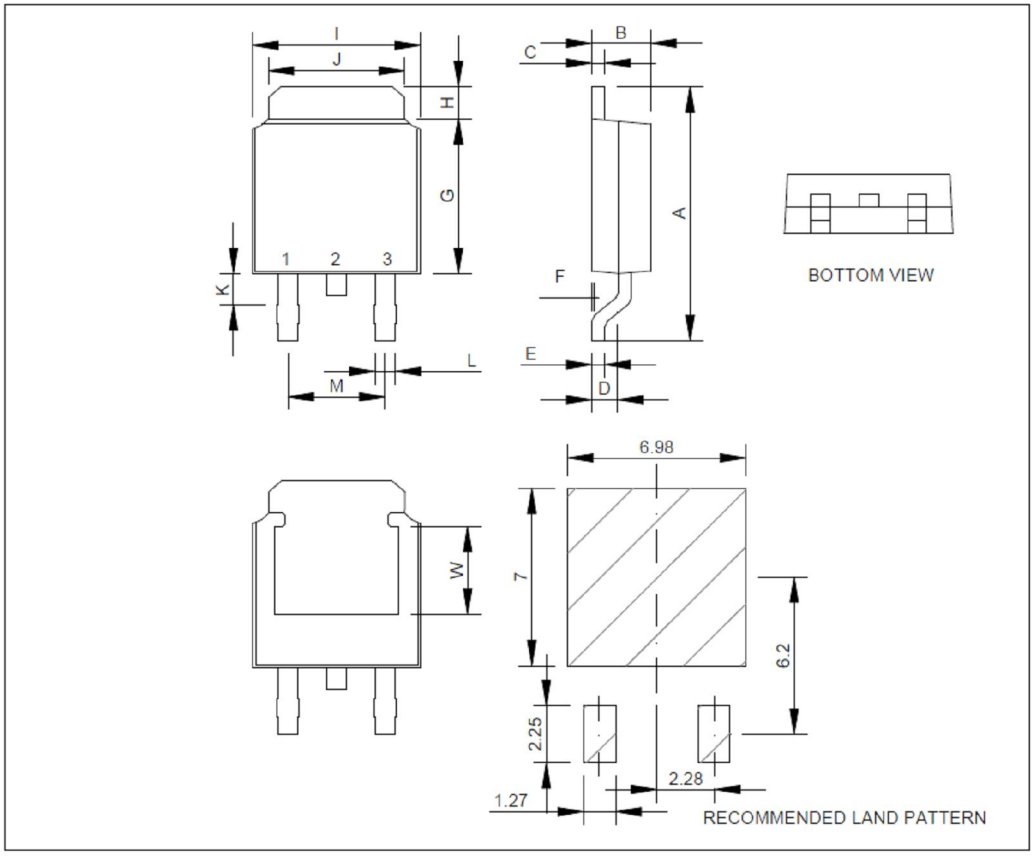


Transient Thermal Response Curve



TO-252 (DPAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	8.9	9.5	10.4	H	0.8	1.27	2.03
B	2.19	2.3	2.435	I	6.35	6.6	6.8
C	0.35	0.5	0.65	J	4.8	5.34	5.5
D	0.89		1.5	K	0.5		1.5
E	0.35		0.65	L	0.4	0.76	0.89
F	0.0		0.23	M	3.96		5.18
G	5.4		6.2	W	3.38	3.58	3.78



TO-252 (DPAK) MECHANICAL DATA 散熱片

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
S	4.57	5.249	5.6	U	1.4		3
T	3.81	4.064	5	V	0.95		1.1