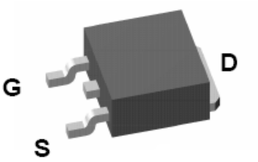
PA610DD

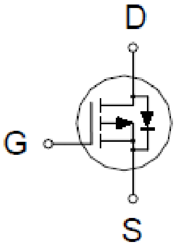
P-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-100V	200mΩ @V_{GS} = -10V	-10A



TO-252



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}	±30	
Continuous Drain Current	T_C = 25 °C	I_D	-10	A
	T_C = 100 °C		-8	
Pulsed Drain Current[1]		I_{DM}	-28	
Avalanche Current		I_{AS}	-12	
Avalanche Energy	L = 1mH	E_{AS}	72	mJ
Power Dissipation	T_C = 25 °C	P_D	36	W
	T_C = 100 °C		15	
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	$R_{\theta JC}$		3.5	°C / W

[1] Pulse width limited by maximum junction temperature.

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

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			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	-2.0	-3.2	-4.0	
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -80V, V_{GS} = 0V			1	μA
		V_{DS} = -80V, V_{GS} = 0V , T_C = 125 °C			10	
On-State Drain Current[1]	$I_{D(ON)}$	V_{DS} = -10V, V_{GS} = -10V	-28			A
Drain-Source On-State Resistance[1]	$R_{DS(ON)}$	V_{GS} = -10V, I_D = -10A		176	200	mΩ
Forward Transconductance[1]	g_{fs}	V_{DS} = -10V, I_D = -10A		13		S
DYNAMIC						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = -25V, f = 1MHz		1530		pF
Output Capacitance	C_{oss}			100		
Reverse Transfer Capacitance	C_{rss}			68		
Gate Resistance	R_g	V_{GS} = 0V, V_{DS} = 0V, f = 1MHz		4.6		Ω
Total Gate Charge[2]	Q_g	V_{DD} = 0.5$V_{(BR)DSS}$, V_{GS} = -10V, I_D = -10A		27.6		nC
Gate-Source Charge[2]	Q_{gs}			8.6		
Gate-Drain Charge[2]	Q_{gd}			9.2		
Turn-On Delay Time[2]	$t_{d(on)}$	V_{DS} = -50V, I_D ≅ -10A, V_{GS} = -10V, R_{GEN} = 6Ω		15		nS
Rise Time[2]	t_r			10		
Turn-Off Delay Time[2]	$t_{d(off)}$			20		
Fall Time[2]	t_f			10		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I_S				-10	A
Forward Voltage[1]	V_{SD}	I_F = -10A, V_{GS} = 0V			-1.2	V
Reverse Recovery Time	t_{rr}	I_F = -10A, dI_F/dt = 100A / μS		67.2		nS
Reverse Recovery Charge	Q_{rr}			186		nC

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

[2] Independent of operating temperature.

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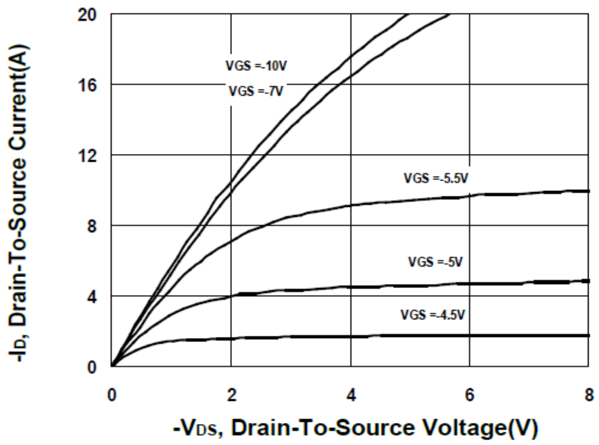
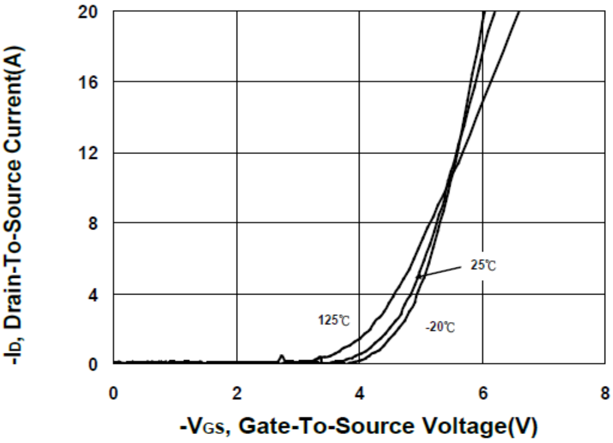
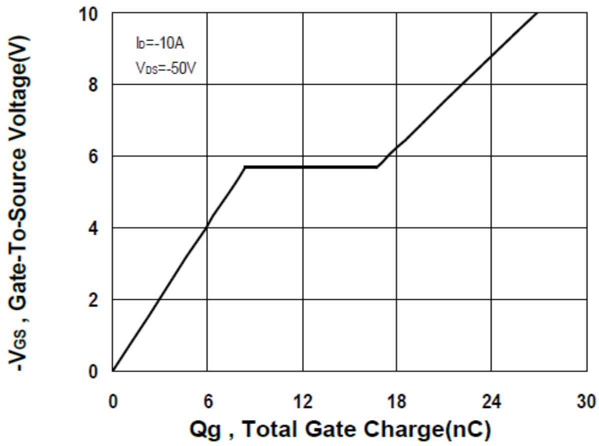


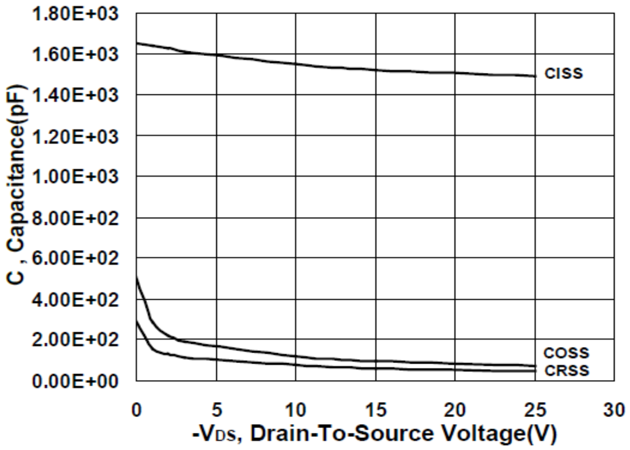
Output Characteristics



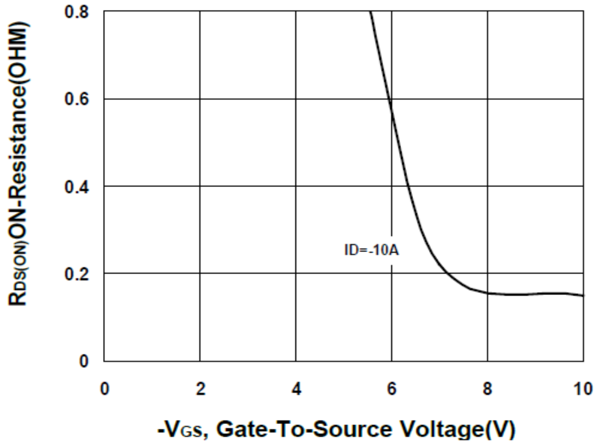
Transfer Characteristics



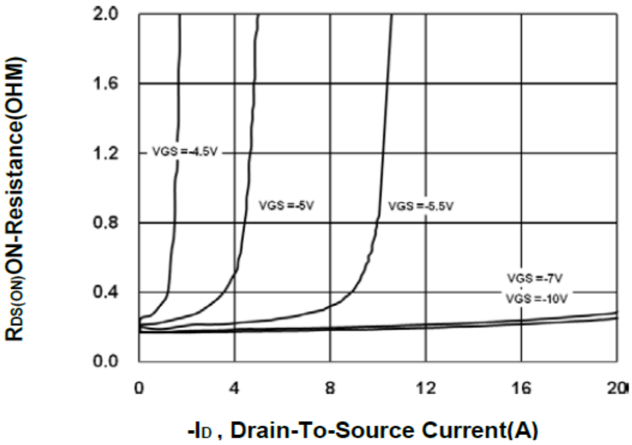
Gate charge Characteristics



Capacitance Characteristic



On-Resistance VS Gate-To-Source



On-Resistance VS Drain Current

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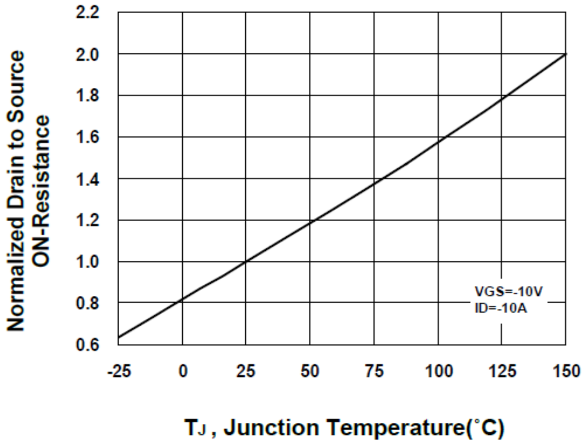
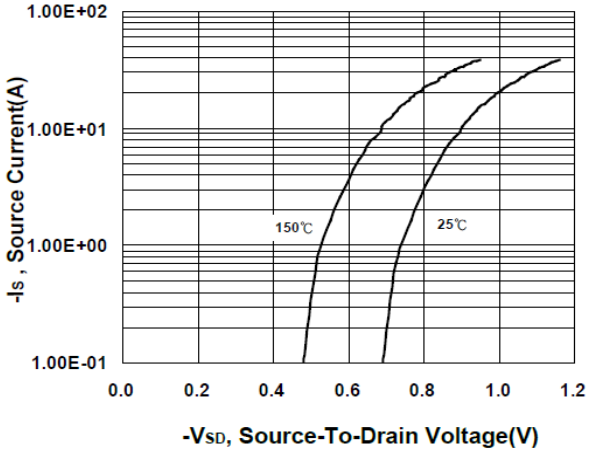
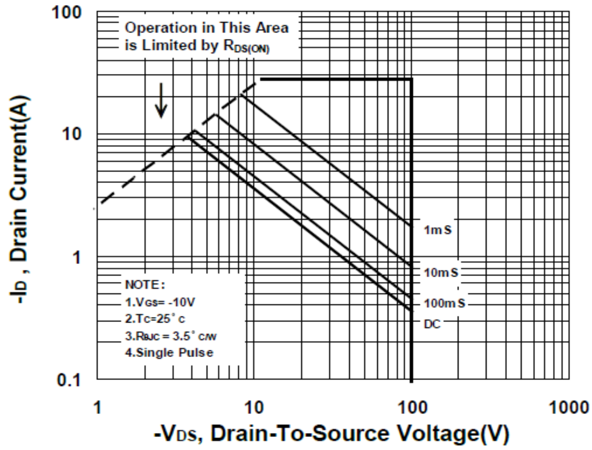
On-Resistance VS Temperature



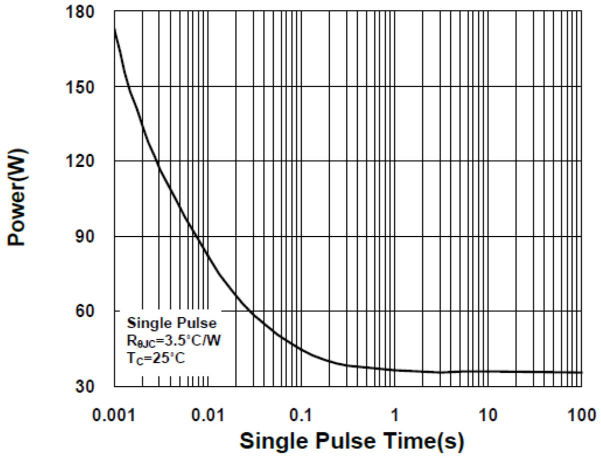
Source-Drain Diode Forward Voltage



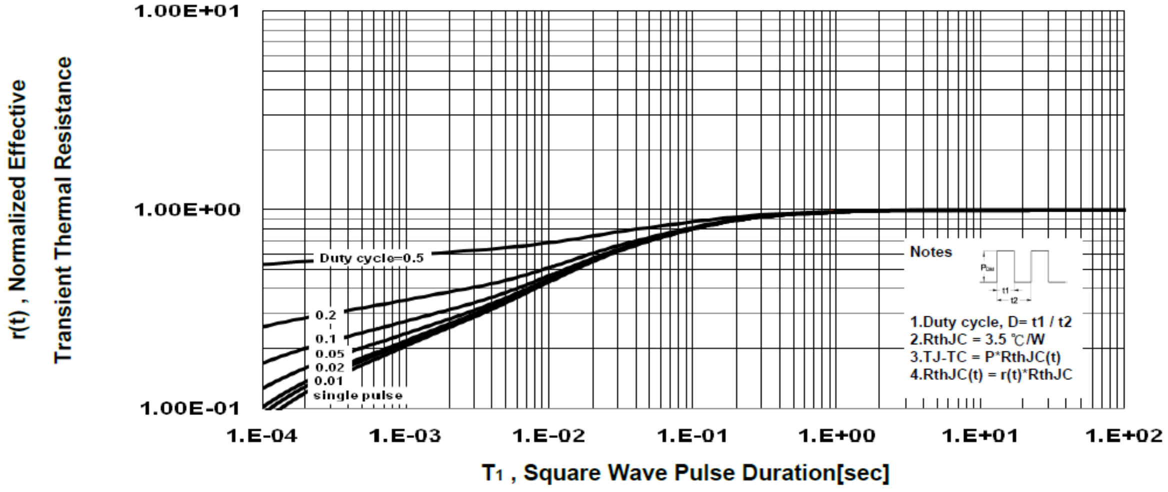
Safe Operating Area



Single Pulse Maximum Power Dissipation



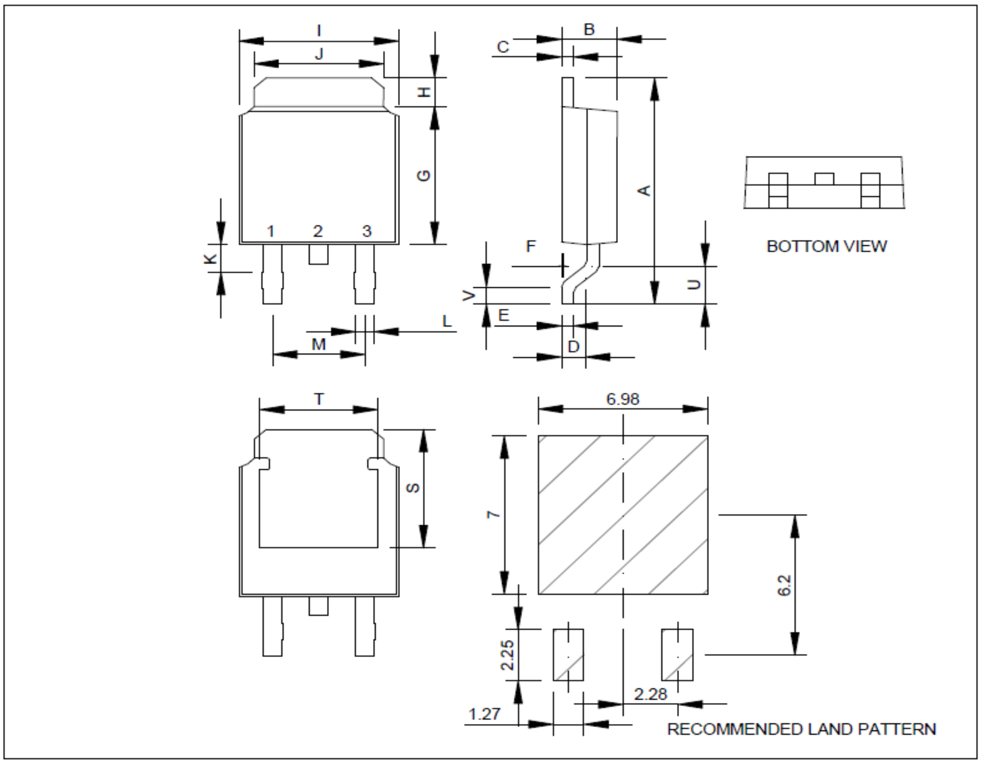
Transient Thermal Response Curve



Package Dimension

TO-252 (DPAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	8.9	10	10.41	J	4.8		5.64
B	2.1	2.2	2.4	K	0.15		1.1
C	0.4	0.5	0.61	L	0.4	0.76	0.89
D	0.82	1.2	1.5	M	4.2	4.58	5
E	0.4	0.5	0.61	S	4.9	5.1	5.3
F	0		0.2	T	4.6	4.75	5.44
G	5.3	6.1	6.3	U	1.4		1.78
H	0.9		1.7	V	0.55	1.25	1.7
I	6.3	6.5	6.8				



*因为各家封装模具不同而外观略有所差异，不影响电性及Layout。