XPX0111RD

N-Channel Enhancement Mode Power MOSFET

● Features

V_{DS} = 100V,

I_D = 83A

$R_{DS(ON)}$ @V_{GS}= 10V, TYP 4.3mΩ

$R_{DS(ON)}$ @V_{GS}= 6.0V, TYP 5.2mΩ

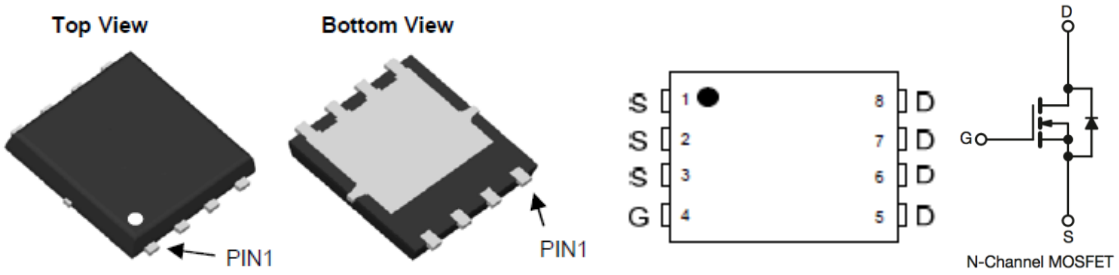
$R_{DS(ON)}$ @V_{GS}= 4.5V, TYP 6.8mΩ

● General Description

• Notebook AC-in load switch

• Battery protection charge/discharge

● Pin Configurations



DFN5*6-8L

● Absolute Maximum Ratings @T_A=25℃ unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	100	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current (Continuous) *AC	T_C=25°C	I_D	83	A
	T_C=70°C		66.1	
Drain Current (Pulse) *B		I_{DM}	200	A
Power Dissipation	T_C=25°C	P_D	83	W
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	℃

● Thermal Resistance Ratings

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient	t ≤ 10 s	R_{thJA}	18	23	°C/W
Maximum Junction-to-Case (Drain)	Steady State	R_{thJC}	1	1.5	

- **Electrical Characteristics** @T_A=25℃ unless otherwise noted

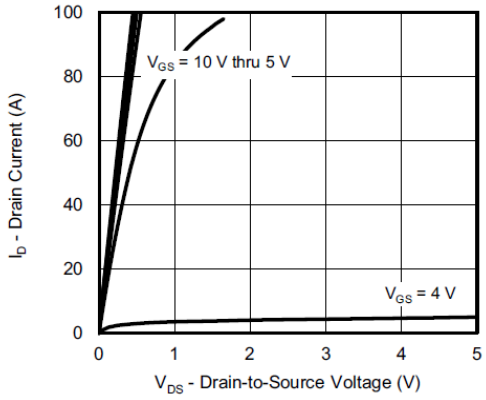
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D= 250μA	100	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 100 V, V_{GS} = 0V	--	--	1	μA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS} = V_{DS}, I_{DS}= 250μA	1	2.1	3	V
Gate Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	--	--	±100	nA
Drain-Source On-state Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 20A	--	4.3	5.5	mΩ
	$R_{DS(on)}$	V_{GS} = 6.0V, I_D = 20A	--	5.2	6.7	mΩ
	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 20A	--	6.8	8.7	mΩ
Diode Forward Voltage	V_{SD}	I_{SD}= 1A , V_{GS}=0V	--	0.69	1.2	V
Diode Forward Current *AC	I_S	T_C =25°C	--	--	83	A
Switching						
Total Gate Charge	Q_g	V_{DS}=50V , V_{GS}=10V , I_D=20A	--	59	--	nC
Gate-Source Charge	Q_{gs}		--	10	--	nC
Gate-Drain Charge	Q_{gd}		--	13.5	--	nC
Turn-on Delay Time	$t_{d(on)}$	V_{DS}= 50V, V_{GEN}= 10V, R_G= 4.5Ω, R_L= 2.5Ω, I_{DS}= 20A	--	13.2	--	ns
Turn-on Rise Time	t_r		--	40	--	ns
Turn-off Delay Time	$t_{d(off)}$		--	38	--	ns
Turn-Off Fall Time	t_f		--	66	--	ns
Dynamic						
Input Capacitance	C_{iss}	V_{GS}=25V, V_{DS}= 10V, f=1MHz	--	3460	--	pF
Output Capacitance	C_{oss}		--	1940	--	pF
Reverse Transfer Capacitance	C_{rss}		--	194	--	pF

A: 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. The value in any given application depends on the user's specific board design.

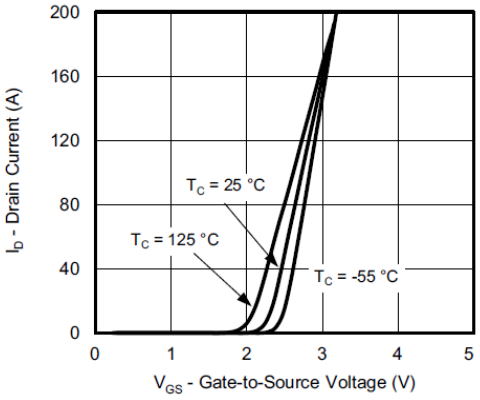
B: Repetitive rating, pulse width limited by junction temperature.

C: The current rating is based on the t≤ 10s junction to ambient thermal resistance rating.

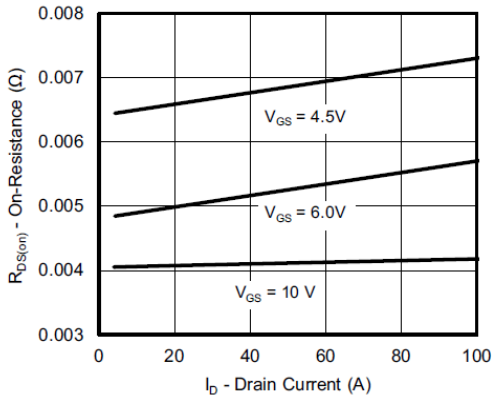
- **Typical Performance Characteristics（(TJ = 25 °C, unless otherwise noted)）**



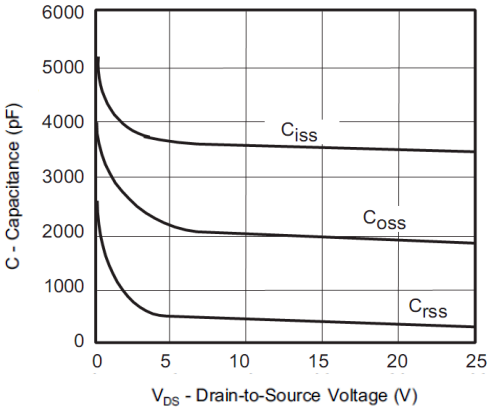
Output Characteristics



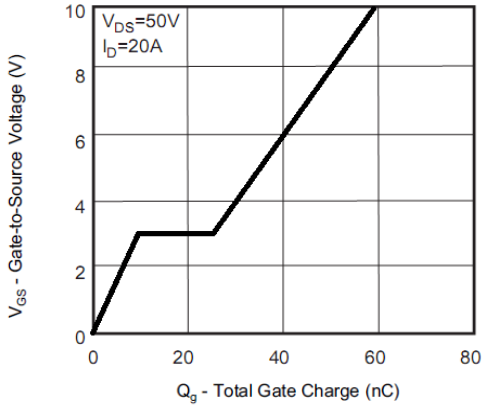
Transfer Characteristics



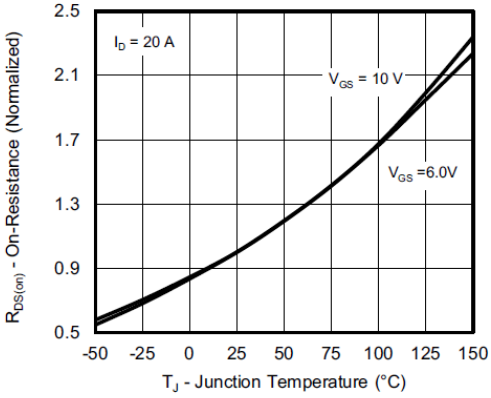
On-Resistance vs. Drain Current and Gate Voltage



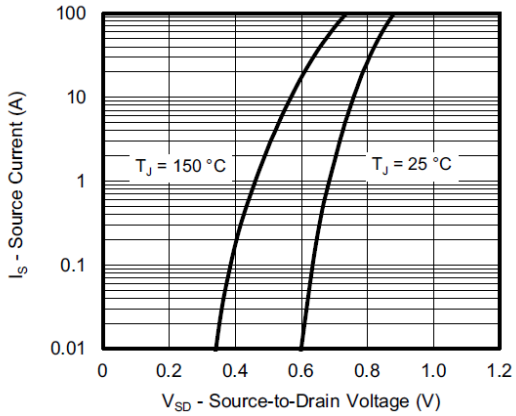
Capacitance



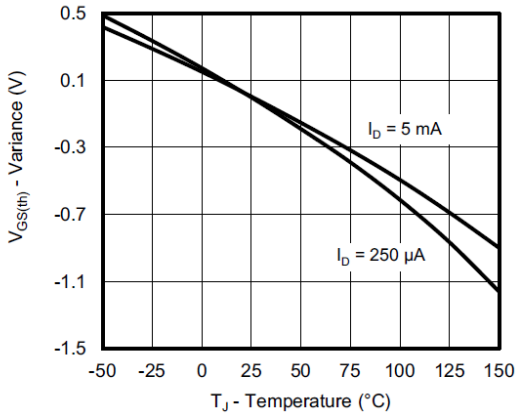
Gate Charge



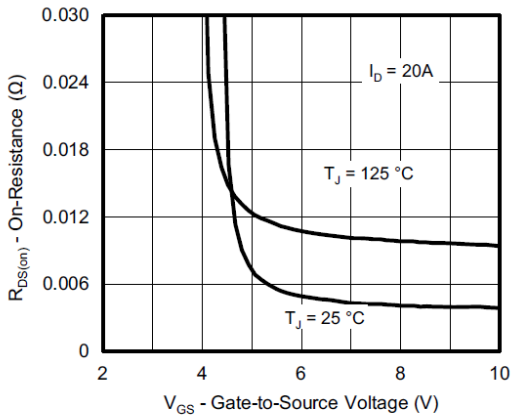
On-Resistance vs. Junction Temperature



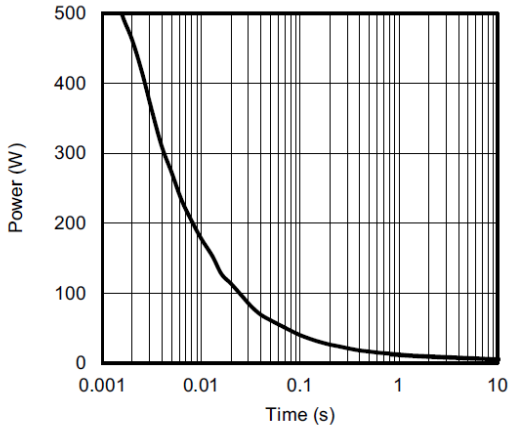
Source-Drain Diode Forward Voltage



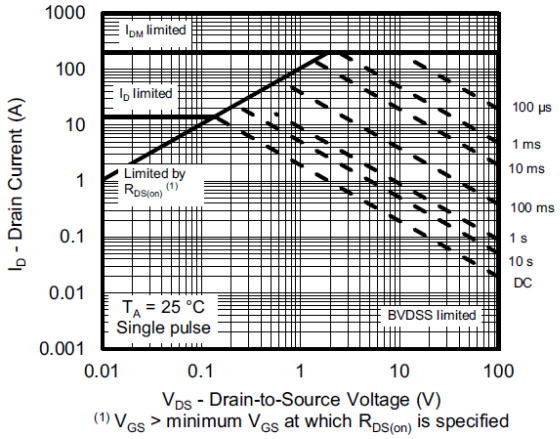
Threshold Voltage



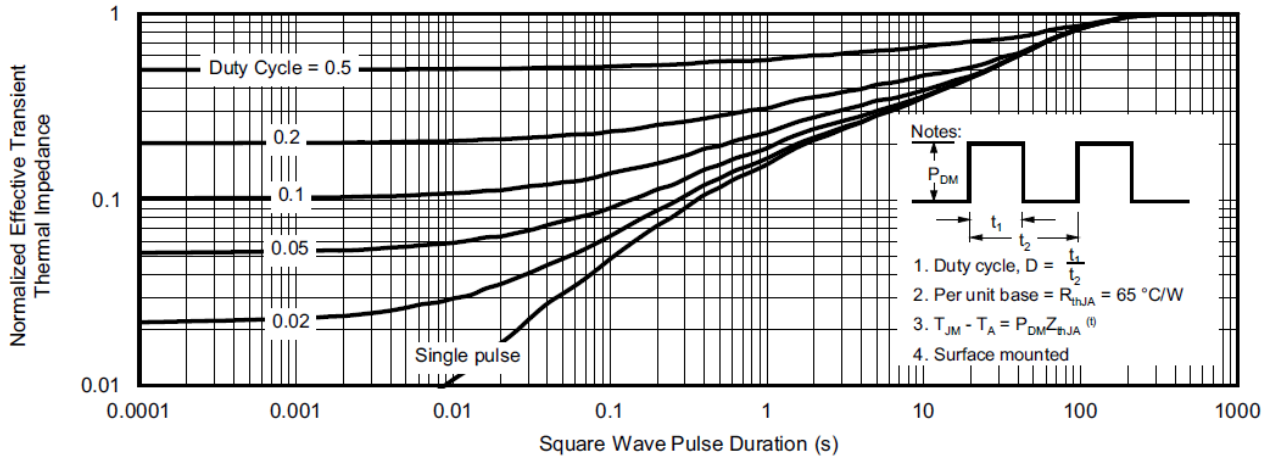
On-Resistance vs. Gate-to-Source Voltage



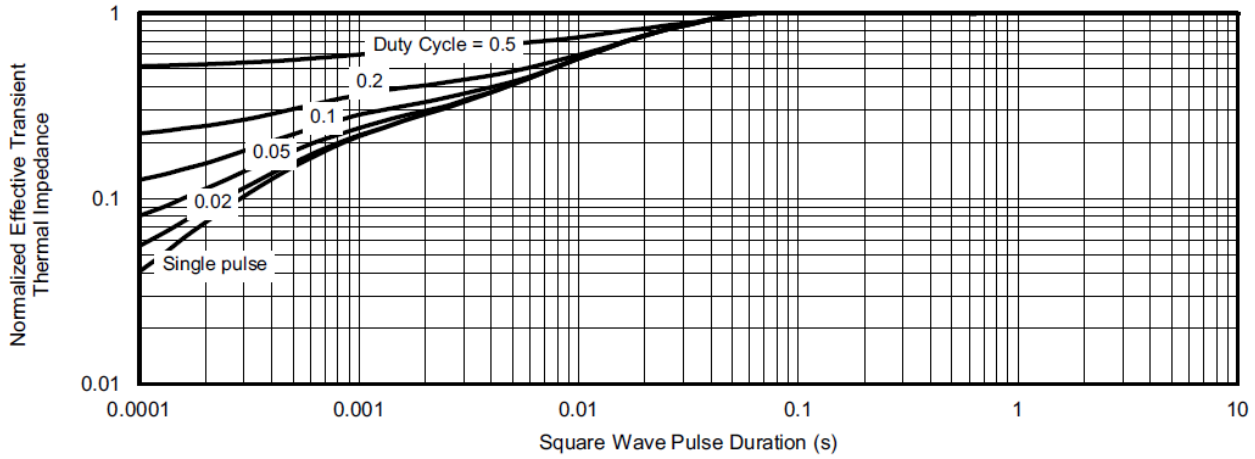
Single Pulse Power, Junction-to-Ambient



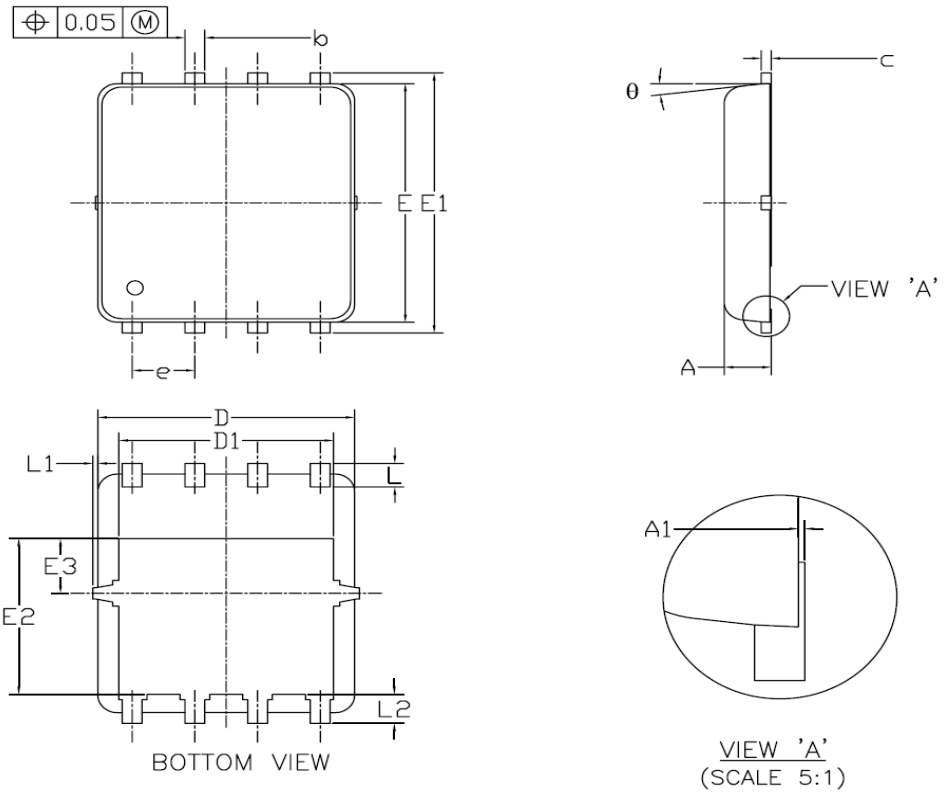
Safe Operating Area, Junction-to-Ambient



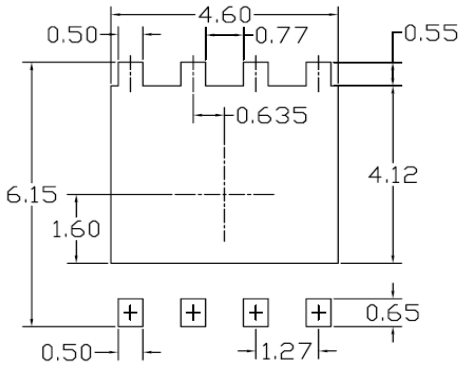
Normalized Thermal Transient Impedance, Junction-to-Ambient



- **Package Information**



RECOMMENDED LAND PATTERN



SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.85	0.95	1.00	0.033	0.037	0.039
A1	0.00	——	0.05	0.000	——	0.002
b	0.30	0.40	0.50	0.012	0.016	0.020
c	0.15	0.20	0.25	0.006	0.008	0.010
D	5.20 BSC			0.205 BSC		
D1	4.35 BSC			0.171 BSC		
E	5.55 BSC			0.219 BSC		
E1	6.05 BSC			0.238 BSC		
E2	3.625 BSC			0.143 BSC		
E3	1.275 BSC			0.050 BSC		
e	1.27 BSC			0.050 BSC		
L	0.45	0.55	0.65	0.018	0.022	0.026
L1	0	——	0.15	0	——	0.006
L2	0.68 REF			0.027 REF		
θ	0°	——	10°	0°	——	10°

UNIT: mm

NOTE
1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
   MOLD FLASH AT THE NON-LEAD SIDES SHOULD BE LESS THAN 6 MILS EACH.
2. CONTROLLING DIMENSION IS MILLIMETER.
   CONVERTED INCH DIMENSIONS ARE NOT NECESSARILY EXACT.