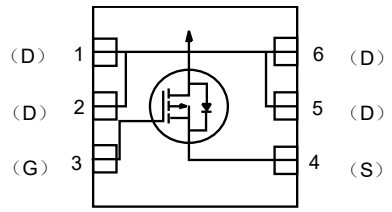
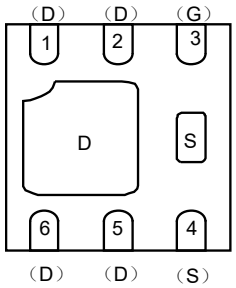
Description

The enhancement mode MOS is extremely high density cell and low on-resistance.

MOSFET Product Summary		
V_{DS}(V)	$R_{DS(on)}$(mΩ)	I_D(A)
-20	52 @ V_{GS}=-4.5V	-5



Internal structure



Absolute maximum rating@25℃

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current	T_A=25℃	I_D	-5	A
	T_A=70℃		-3	
Drain Current Pulsed(Note1)		I_{DM}	-20	A
Maximum Power Dissipation	T_A=25℃	P_D	2.4	W
Operating and Storage Junction Temperature Range		T_J,T_{STG}	-55 to +150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Units
Thermal Resistance, Junction to Ambient (Note 2)	$R_{\theta JA}$	52	℃/W

Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D =-250μA,V_{GS}=0V	-20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-20V,V_{GS}=0V	-	-	-1.0	μA
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS}=±12V,V_{DS}=0V	-	-	±100	nA
On Characteristics(Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.45	-0.7	-1.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D =-4.1A	-	39	52	mΩ
		V_{GS}=-2.5V, I_D =-3A,	-	58	70	mΩ
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D =-2A	6	-	-	S
Dynamic Characteristics(Note4)						
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS} =-4V, f=1MHz	-	740		pF
Output Capacitance	C_{DSS}		-	290		
Reverse Transfer Capacitance	C_{RSS}		-	190		
Switching Characteristics(Note 4)						
Total Gate Charge	Qg	I_D =-4.1A, V_{DS} =-4V, V_{GS} =-4.5V	-	7.8	-	nC
Gate-to-Source Charge	Qgs		-	1.2	-	
Gate-to-Drain Charge	Qgd		-	1.6	-	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=-4V, I_D =-3.3A, R_L=-1.2Ω,V_{GEN}=-4.5V , R_g=1Ω,	-	12		ns
Turn-On Rise Time	t_r		-	35		
Turn-Off Delay Time	$t_{d(off)}$		-	30		
Turn-Off Fall Time	t_f		-	10		
Drain-Source Diode Characteristics						
Diode Forward Voltage(Note 3)	V_{SD}	V_{GS}=0V,I_S=-1.6A	-	-	-1.2	V
Diode Forward Current(Note 2)	I_S		-	-	1.6	A

Notes:

1.Repetitive Rating:Pulse width limited by maximum junction temperature.

2.Surface Mounted on FR4 Board,t≤10 sec.

3.Pulse Test :Pulse Width≤200us,Duty Cycle≤2%

4.Guaranteed by design,not subject to production

Typical Characteristics

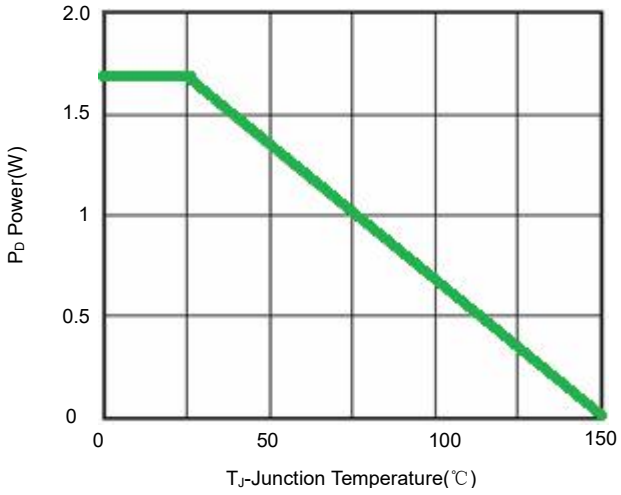


Fig 1. Power Dissipation

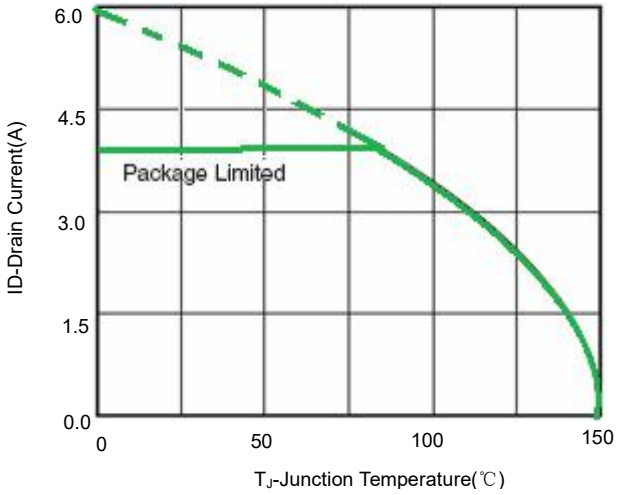


Fig 2. Drain Current

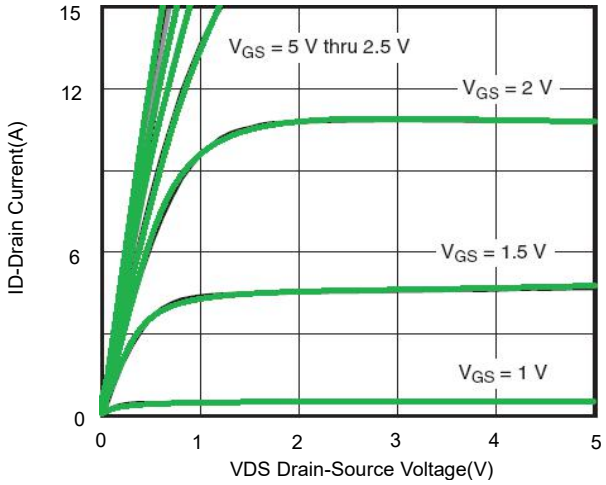


Fig 3.Output Characteristics

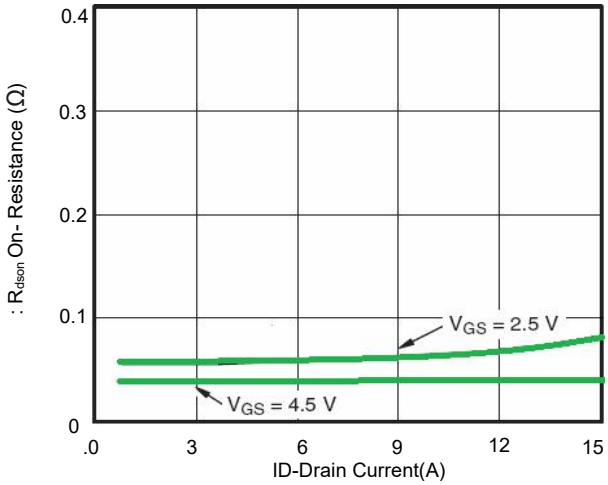


Fig 4.Drain-Source On-Resistance

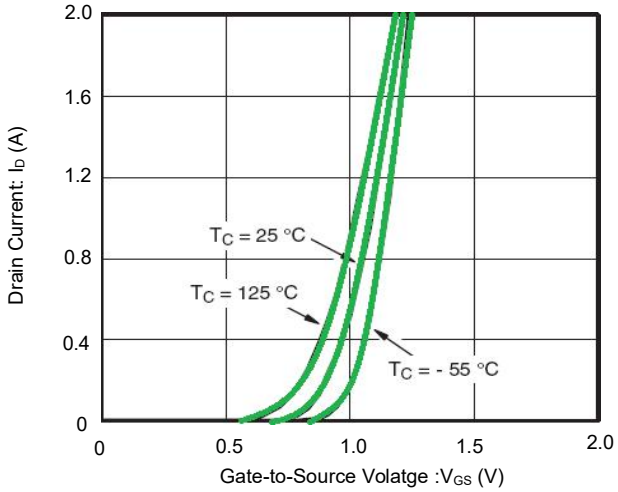


Fig 5. Transfer Characteristics

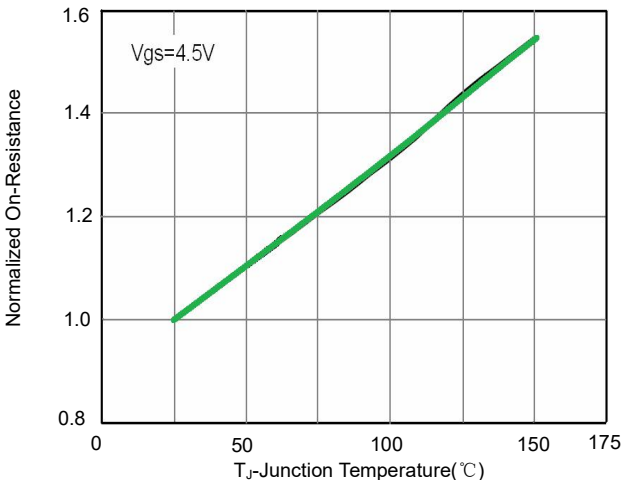


Fig 6. Drain-Source On-Resistance

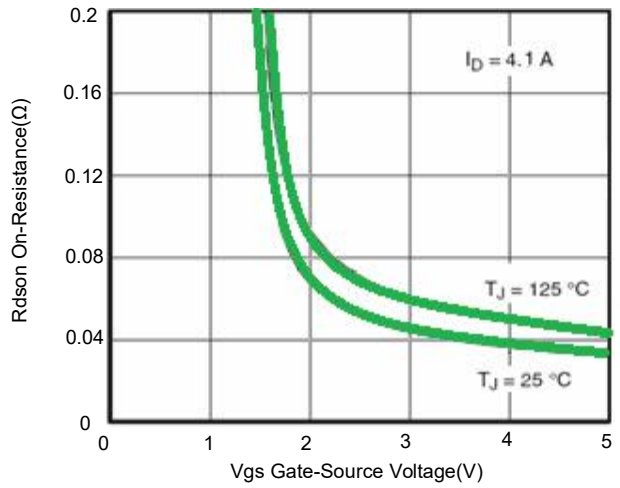


Fig 7. Rdson vs Vgs

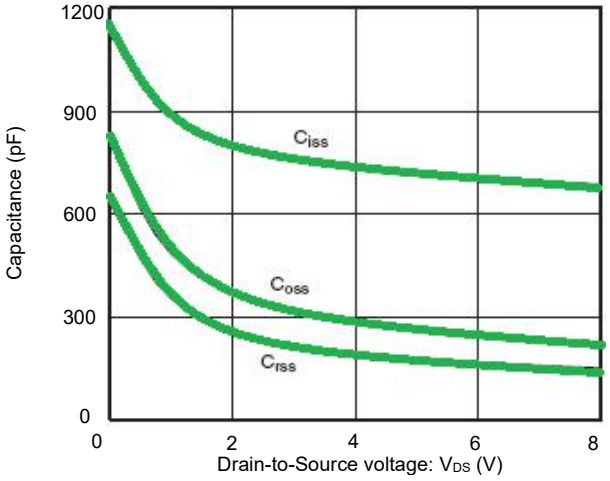


Fig 8. Capacitance vs. Drain to Source Voltage

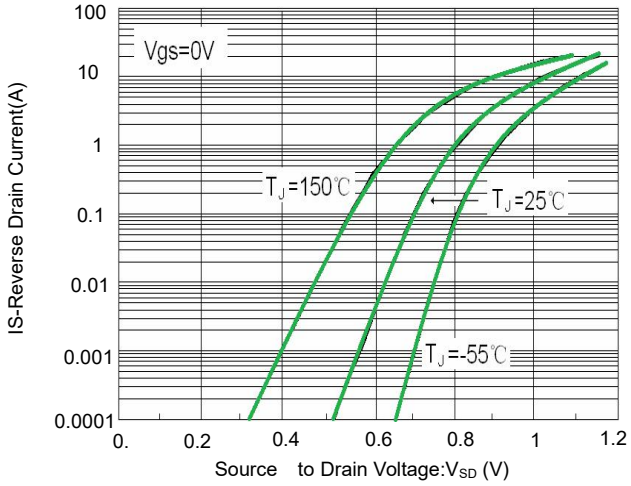


Fig 9. Source-Drain Voltage(V)

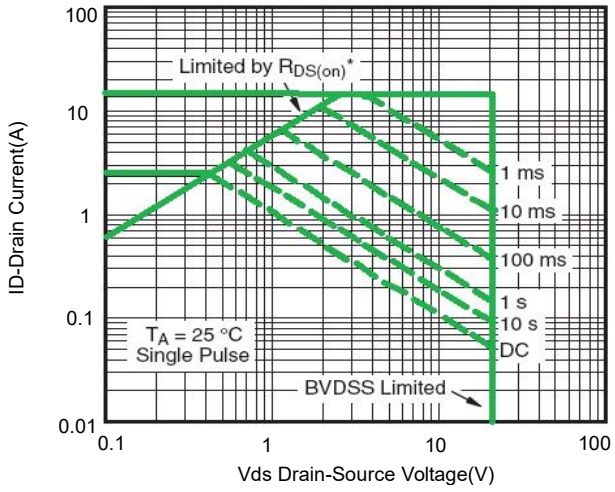


Fig 10. Safe Operation Area

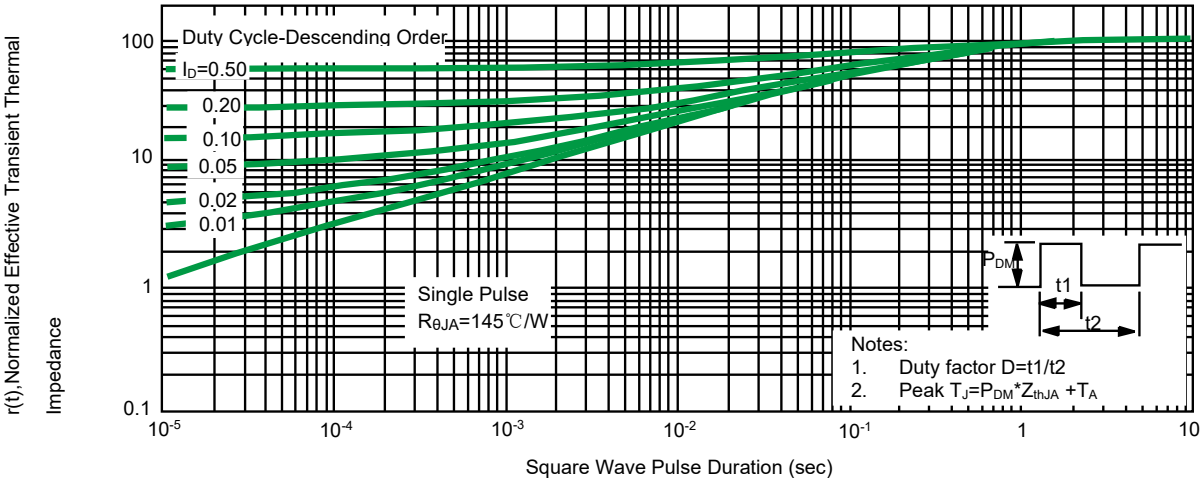
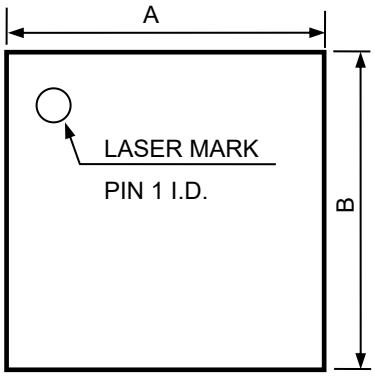
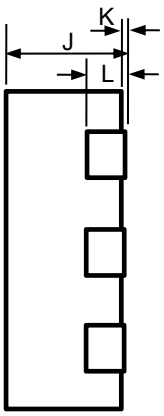


Fig 11. Normalized Maximum Transient Thermal Impedance

Product dimension （DFN2*2-6L）

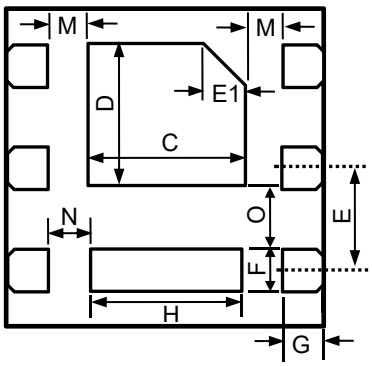


Top View

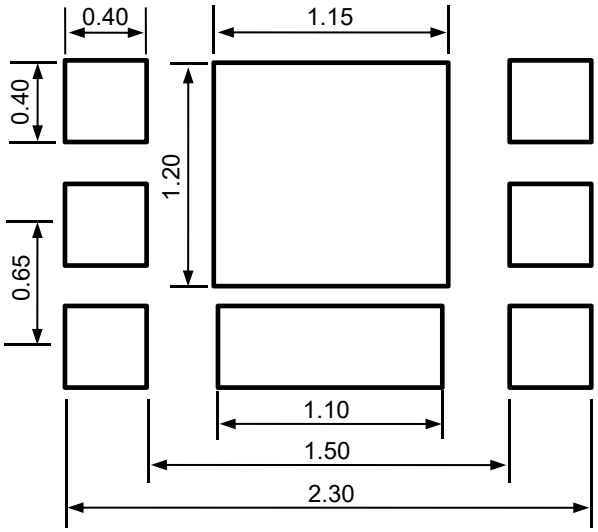


Side View

Dim	Millimeters	
	MIN	MAX
A	1.90	2.10
B	1.90	2.10
C	0.70	1.10
D	0.80	1.00
E	0.55	0.75
E1	0.25 Ref.	
F	0.25	0.35
G	0.20	0.35
H	0.50	1.00
J	0.60	0.80
K	0.00	0.05
L	0.20 Ref.	
M	0.15	--
N	0.20	--
O	0.25	--



Bottom View



Suggested PCB Layout

Ordering information

Device	Package	Reel	Shipping
PPM6N20V5	DFN-6L (2*2)	7"	3000 / Tape & Reel

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