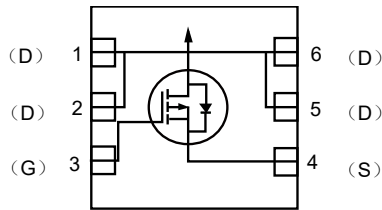


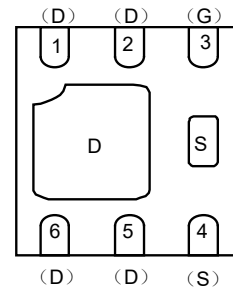
Description

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

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



Internal structure



Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 10	V
Drain Current	I_D	$T_C=25^\circ C$	-5
		$T_C=70^\circ C$	-3.2
Drain Current Pulsed(Note1)	I_{DM}	-15	A
Maximum Power Dissipation	P_D	1.7	W
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

Thermal Characteristics

Parameter	Symbol	Max.	Units
Thermal Resistance, Junction to Ambient (Note 2)	$R_{\theta JA}$	357	$^\circ C/W$

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu A, V_{GS} = 0V$	-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}	$V_{GS} = \pm 10V, V_{DS} = 0V$	-	-	± 100	nA
On Characteristics(Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-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	m Ω
		$V_{GS} = -2.5V, I_D = -3A,$	-	58	70	m Ω
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -3.5A$	-	8.5	-	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	Q_g	$I_D = -4.1A, V_{DS} = -4V,$ $V_{GS} = -4.5V$	-	7.8	-	nC
Gate-to-Source Charge	Q_{gs}		-	1.2	-	
Gate-to-Drain Charge	Q_{gd}		-	1.6	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -4V, I_D = -3.3A,$ $R_L = -1.2\Omega, V_{GEN} = -4.5V, R_g = 1\Omega,$	-	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, $t \leq 10$ sec.
- 3.Pulse Test :Pulse Width $\leq 200\mu s$,Duty Cycle $\leq 2\%$
- 4.Guaranteed by design,not subject to production

Typical Characteristics

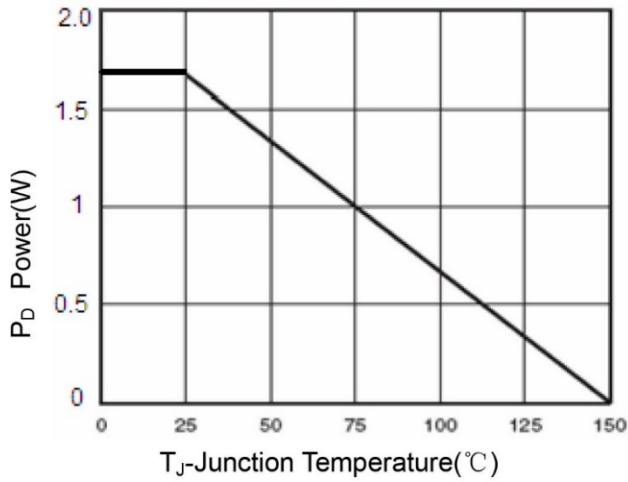


Figure 1 Power Dissipation

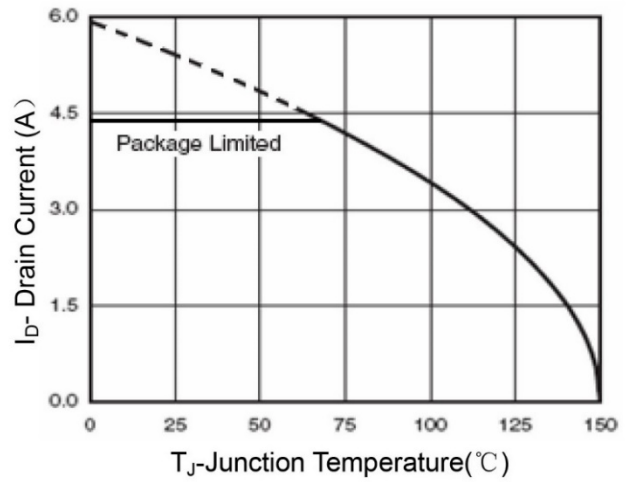


Figure 2 Drain Current

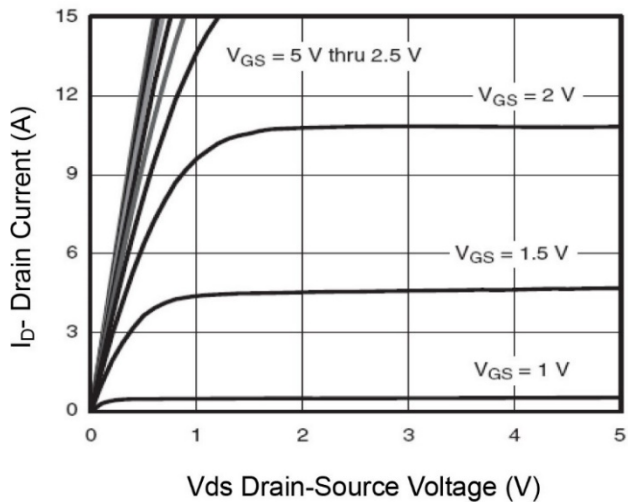


Figure 3 Output Characteristics

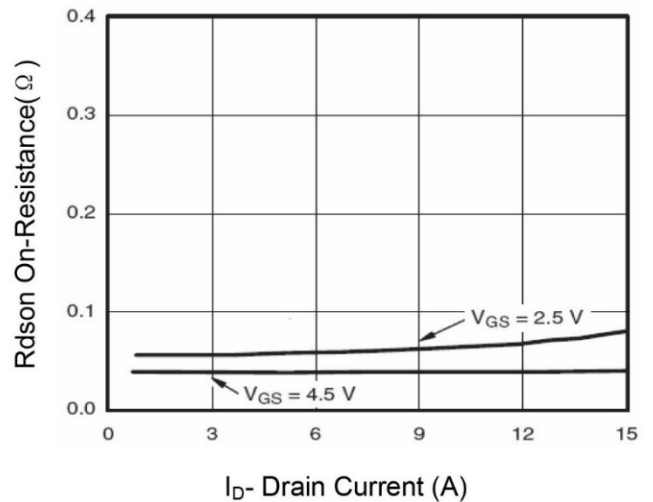


Figure 4 Drain-Source On-Resistance

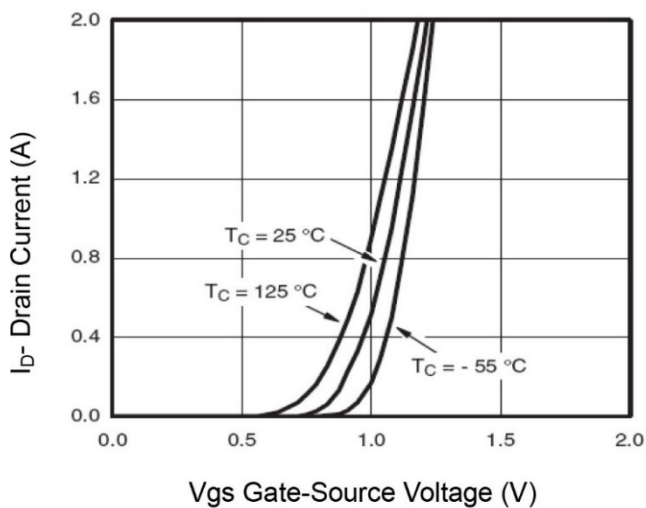


Figure 5 Transfer Characteristics

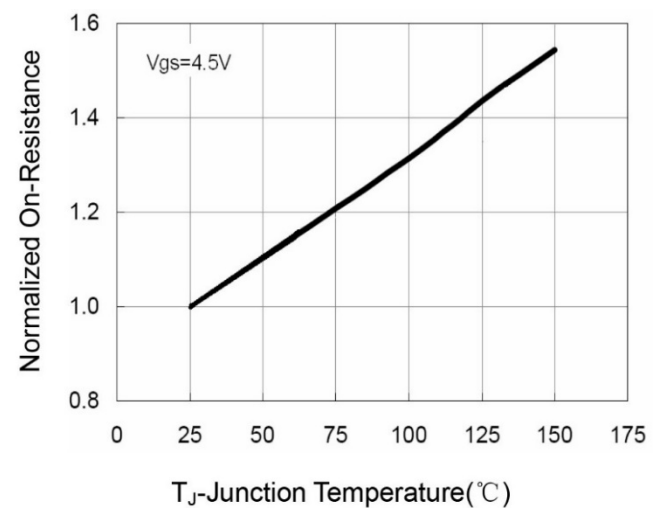
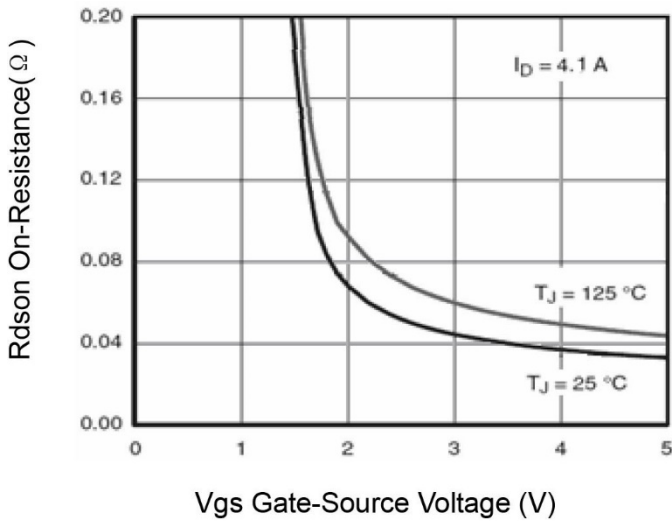
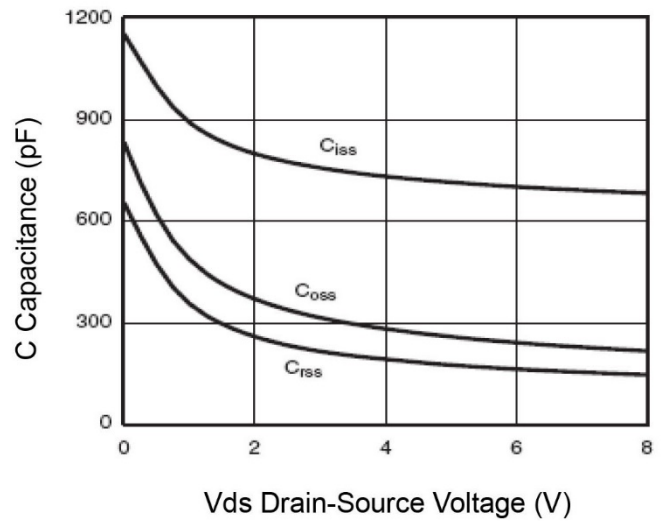


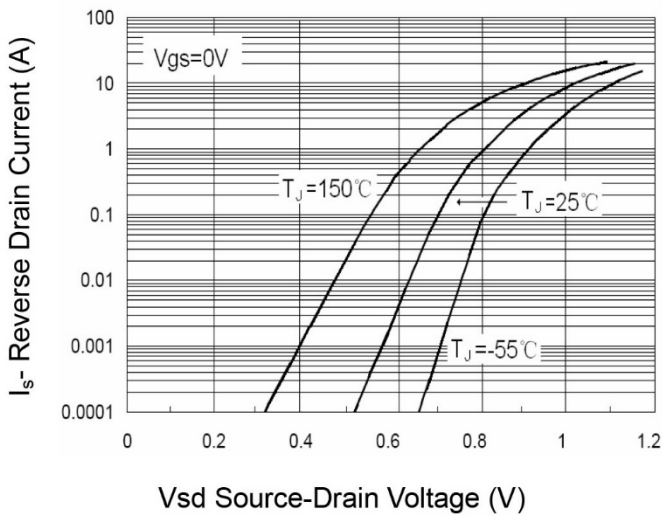
Figure 6 Drain-Source On-Resistance



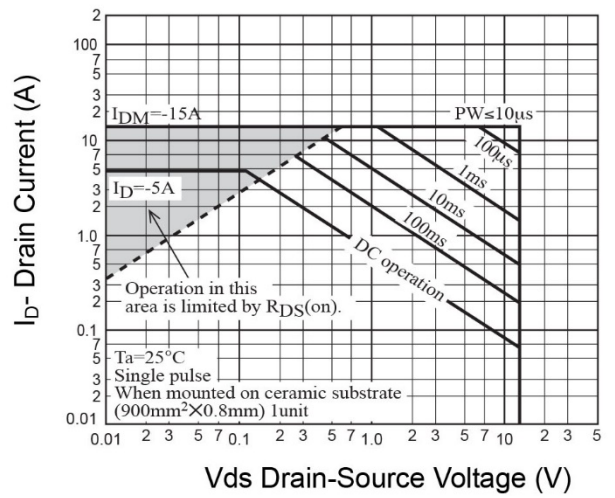
Vgs Gate-Source Voltage (V)
Figure 7 Rdson vs Vgs



Vds Drain-Source Voltage (V)
Figure 8 Capacitance vs Vds



Vsd Source-Drain Voltage (V)
Figure 9 Source- Drain Diode Forward



Vds Drain-Source Voltage (V)
Figure 10 Safe Operation Area

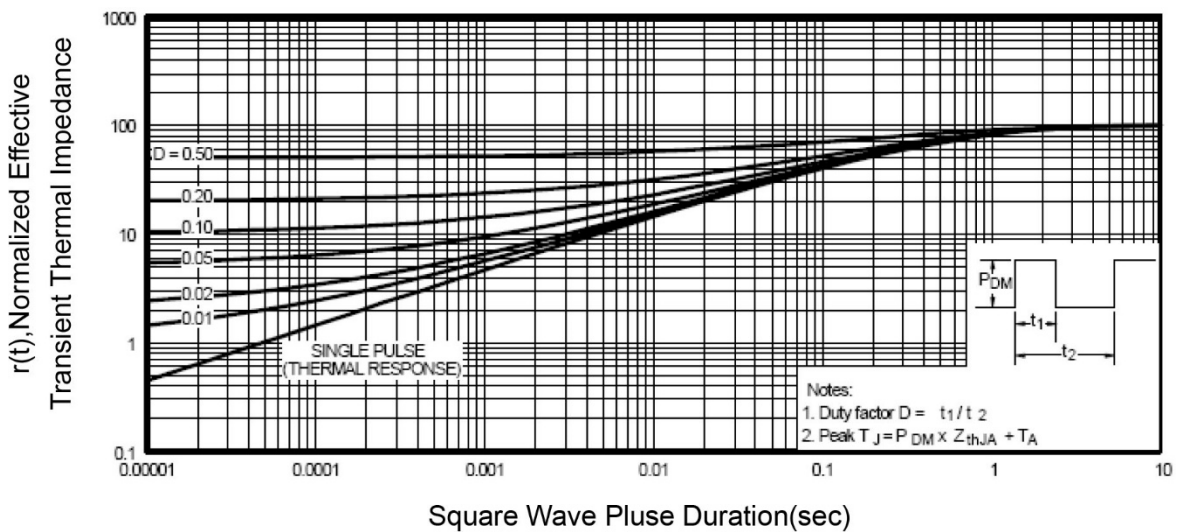
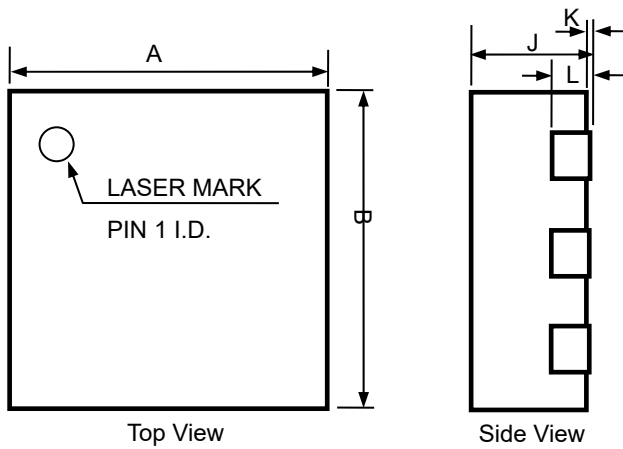
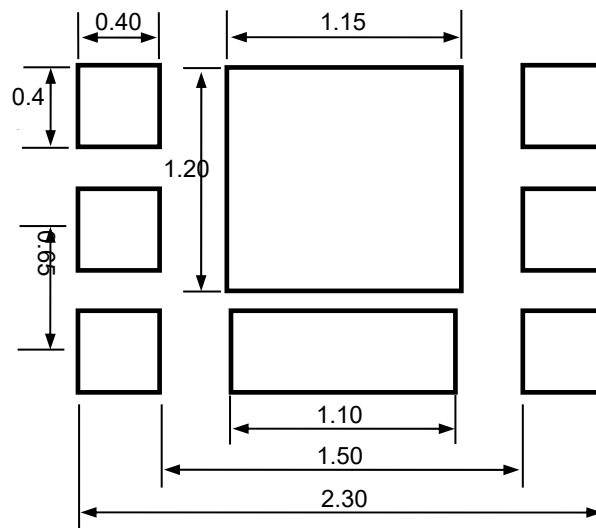
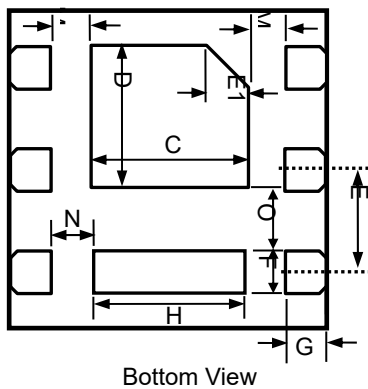


Figure 11 Normalized Maximum Transient Thermal Impedance

Product dimension (DFN2*2-6L)



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	--




Suggested PCB Layout

Ordering information

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


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