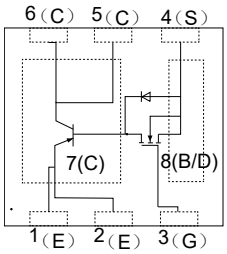
Feature

This device is Pb-Free, Halogen Free/BFR Free and RoHS compliant.

PNMT6N2B is composed by a transistor and a MOSFET

Top View

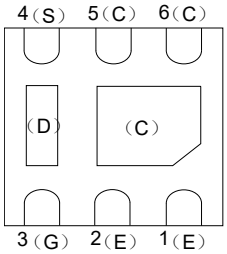


Transistor:

- Very low collector to emitter saturation voltage
- DC current gain >100
- 3A continuous collector current
- PNP epitaxial planar silicon transistor

MOSFET:

Bottom View



MOSFET Product Summary			
V_{DS}(V)	$R_{DS(on)}$(Ω)	$V_{GS(th)}$(V)	I_D(A)
30	7@ V_{GS}=2.5V,I_D=10mA	0.5 to 1.5	0.1

- Transistor

Absolute maximum rating@25℃

Parameter	Symbol	Value	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-30	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-40	V
Emitter -Base Breakdown Voltage	$V_{(BR)EBO}$	-5	V
Collector Current	I_C	-3	A
Collector Peak Current	I_{CM}	-6	A
Base Current	I_B	-0.2	A
Base Peak Current	I_{BM}	-0.5	A
Total Dissipation @25°C	P_{tot}	1.2	W
Storage Temperature	T_{stg}	-65~150	°C
Max. Operating Junction Temperature	T_j	150	°C

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
DC Current Gain	h_{FE}	I_C=-1mA,V_{CE}=-5.0V	150			-
		I_C=-1A,V_{CE}=-5.0V	100		-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-0.1A,I_B=-1mA	-		-0.14	V
		I_C=-0.5A,I_B=-50mA	-		-0.17	
		I_C=-1A,I_B=-100mA	-		-0.31	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=-1A,I_B=-0.05mA			-1.1	V
Collector Cut-off Current (I_E=0)	I_{CBO}	V_{CB}=-40V			-0.1	μA
		V_{CB}=-30V T_C=125°C			-20	
Emitter Cut-off Current(I_C=0)	I_{EBO}	V_{EB}=-5V			-0.1	μA

➢ MOSFET

Absolute maximum rating@25℃

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current	Continuous	I_D	0.10	A
	Pulsed	I_D	0.36	A
Total Power Dissipation	T_A=25℃	P_D	150	mW

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V_{DSS}	I_D =10μA,V_{GS}=0V	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =30V,V_{GS}=0V	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS} =0V,V_{GS}=±20V	-	-	±1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	-	1.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=2.5V, I_D =1mA		6.5	9	Ω
		V_{GS}=2.5V, I_D =10mA		7	9	Ω
		V_{GS}=4V, I_D =10mA	-	4	6	Ω
		V_{GS}=10V, I_D =100mA	-	3	5	Ω

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=0.1A	-	0.2	-	S
Source-Drain Diode Forward Voltage	VFSD (V)	ID=100mA,VGS=0V		0.75	1	V
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS}=25V, f=1MHz	-	-	40	pF
Output Capacitance	C_{DSS}		-	-	10	pF
Reverse Transfer Capacitance	C_{RSS}		-	-	5	pF
SWITCHING PARAMETERS						
Total Gate Charge	Qg	V_{GS}=4.5V, V_{DS}=6V, I_D=0.1A			0.5	nC
Gate-Source Charge	Qgs				0.2	nC
Gate-Drain Charge	Qgd				0.2	nC
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=30V, V_{GS}=10V, R_G=25Ω, RL=150Ω,I_D=0.1A	-	3		ns
Turn-On Rise Time	t_r		-	3.5		ns
Turn-Off Delay Time	$t_{d(off)}$		-	5		ns
Turn-On Fall Time	t_f		-	2.5		ns

Typical Characteristics

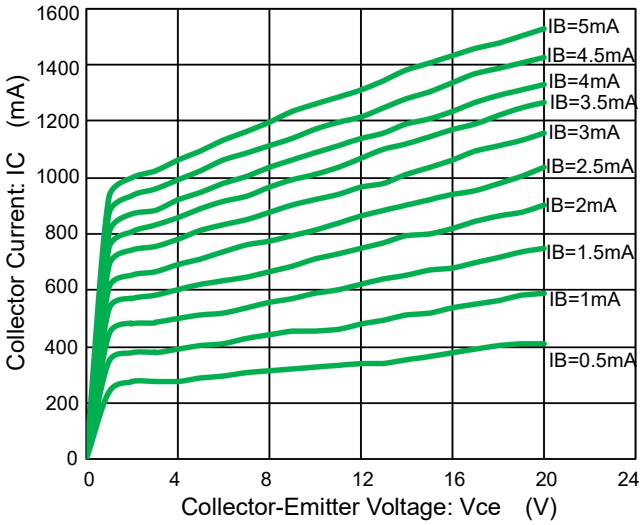


Fig1. Collector Current vs. Collector-Emitter Voltage

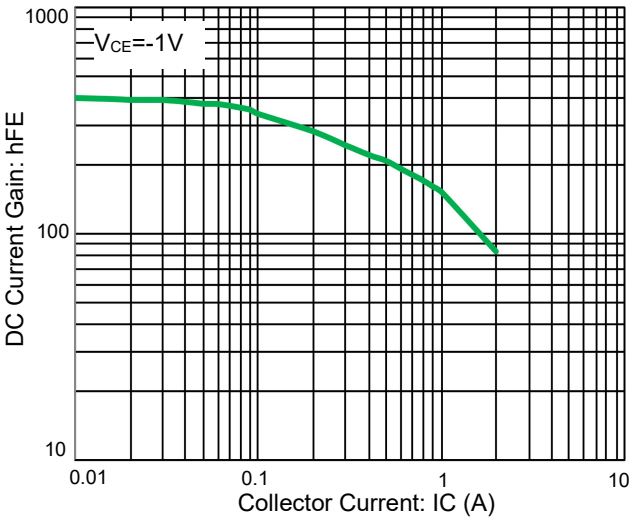


Fig2.DC Current Gain

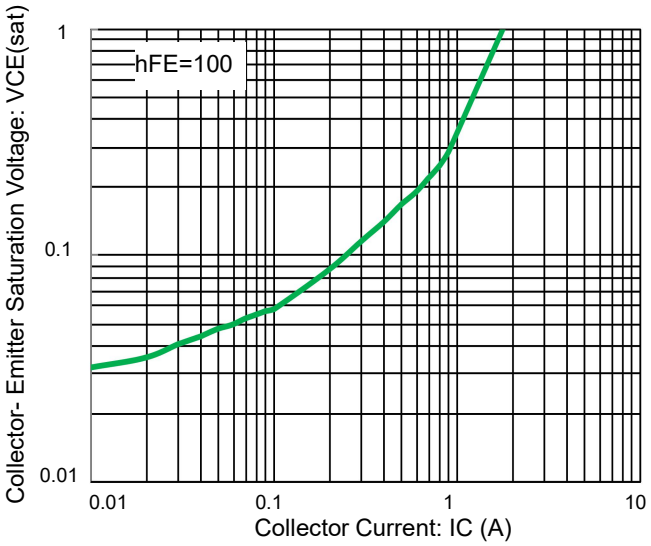


Fig 3.Collector-Emitter Saturation Voltage

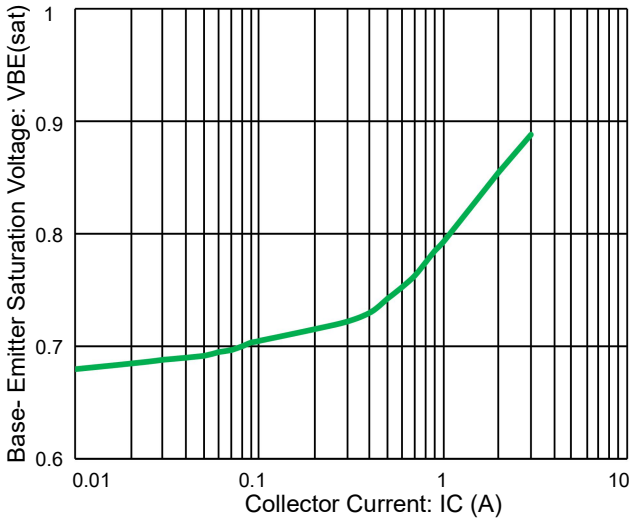


Fig4. Base-Emitter Saturation Voltage

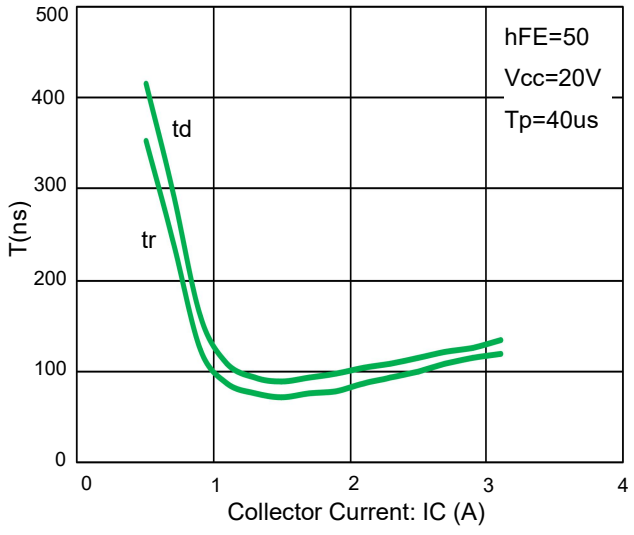


Fig 5.Switching Times Resistive Load

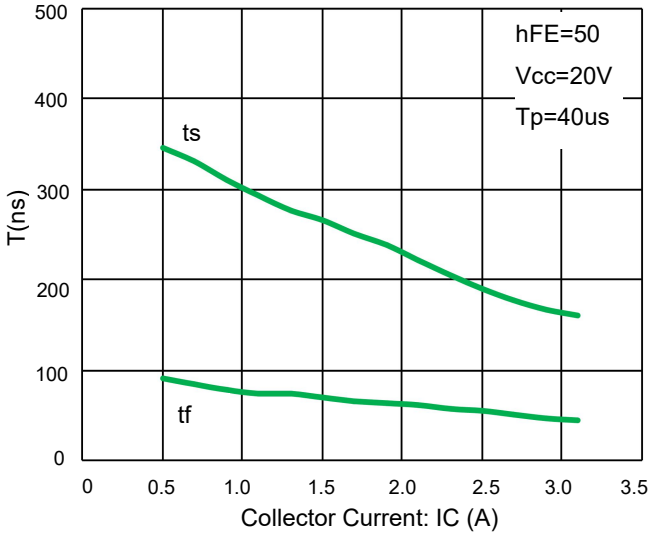


Fig 6. Switching Times Resistive Load

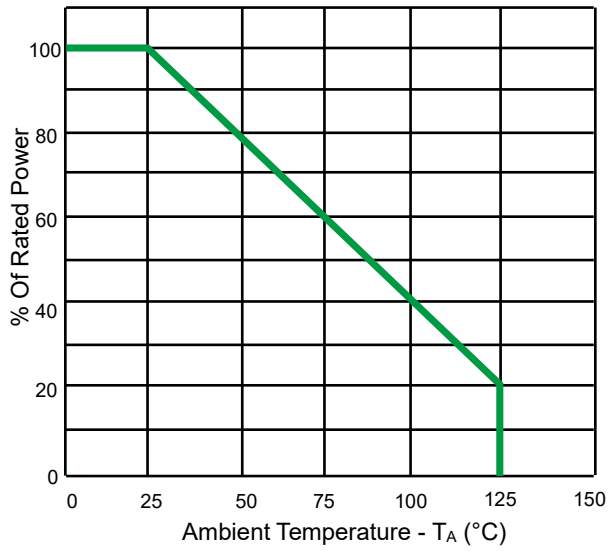


Fig 7. Power Derating Curve

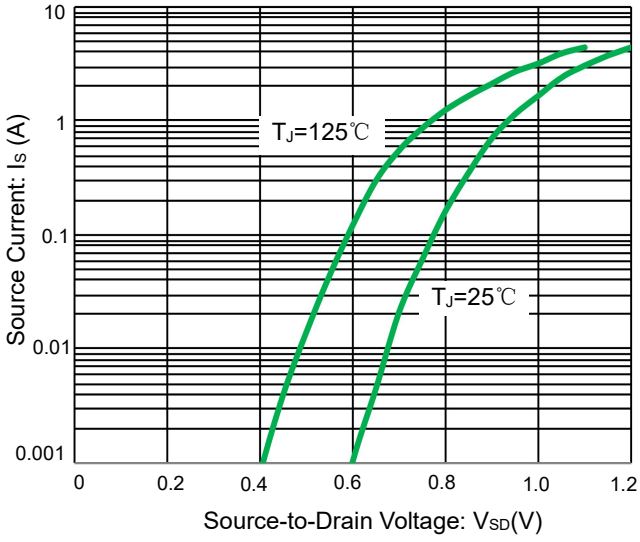


Fig 8. Body diode forward voltage

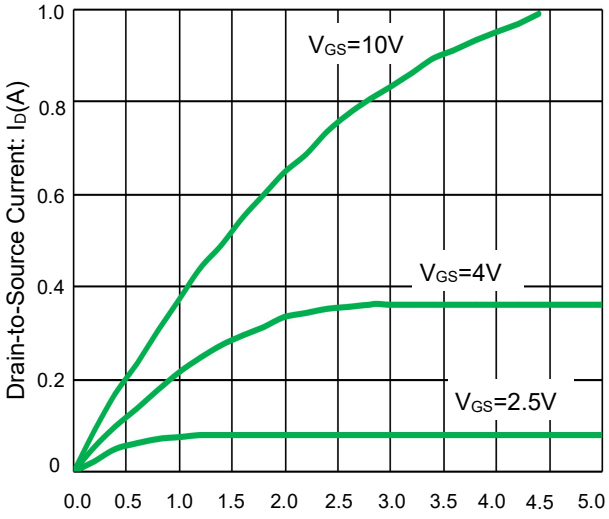


Fig 9. On-Region Characteristics

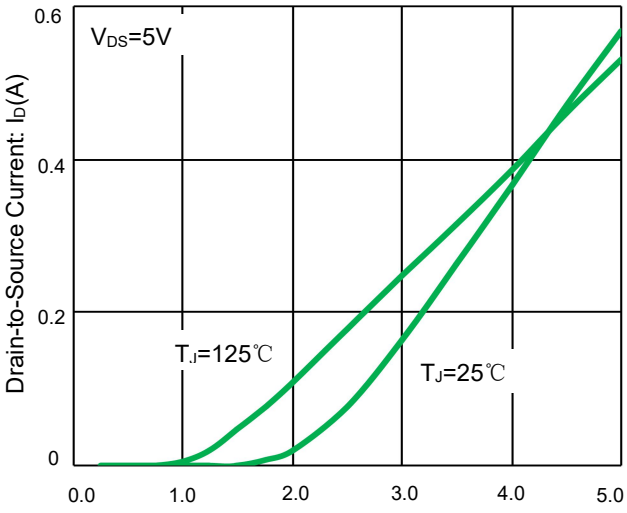


Fig 10. Transfer Characteristics

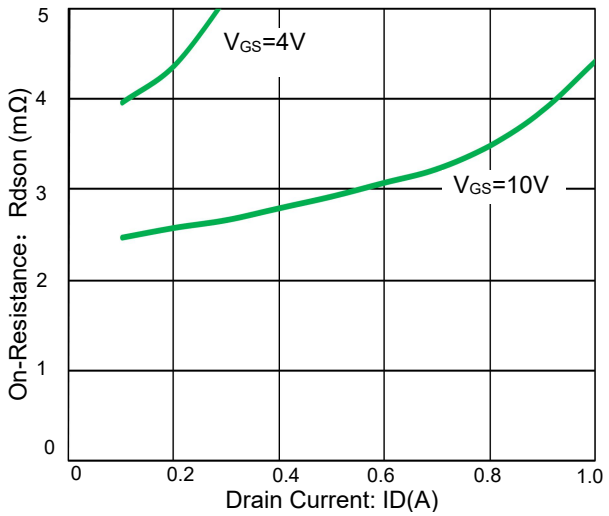


Fig 11. On-Resistance v.s. Drain Current and Gate Voltage

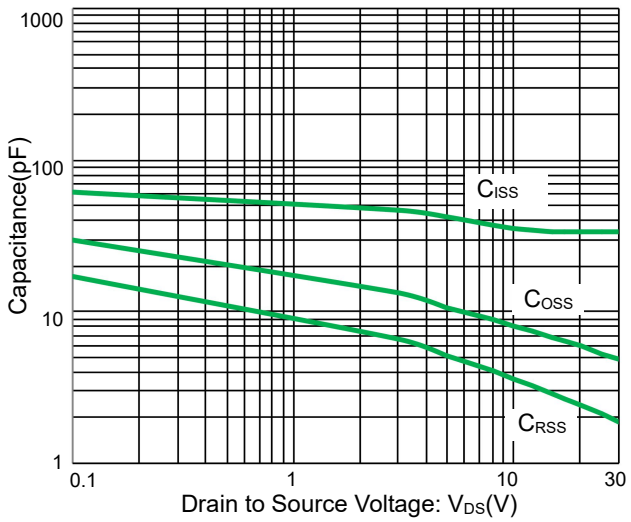


Fig 12. Capacitance Characteristic

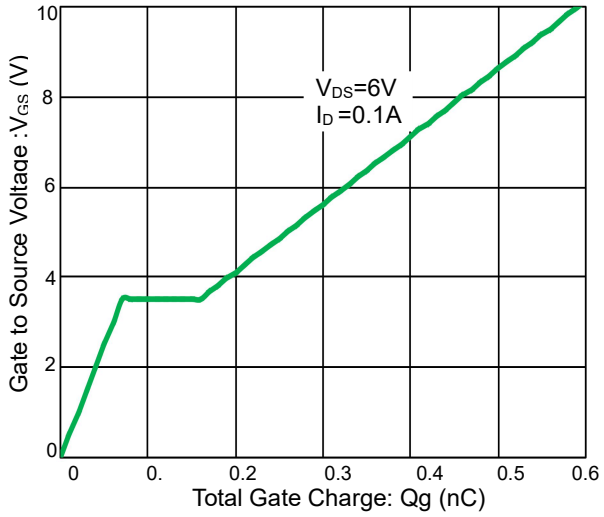


Fig 13. Gate Charge Characteristics

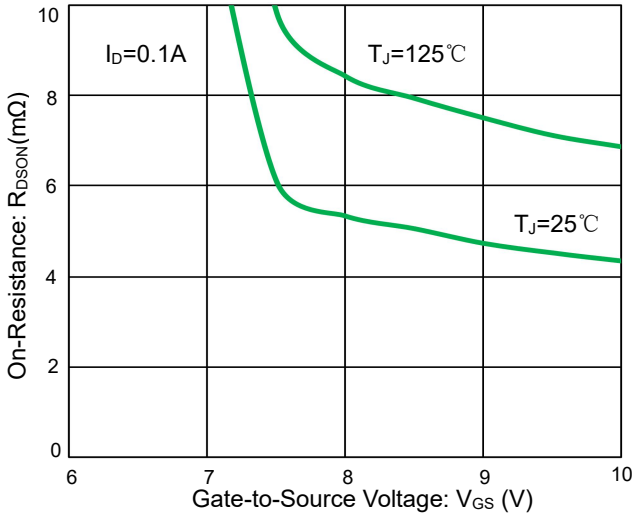


Fig 14. On-Resistance vs. Gate-to-Source Voltage

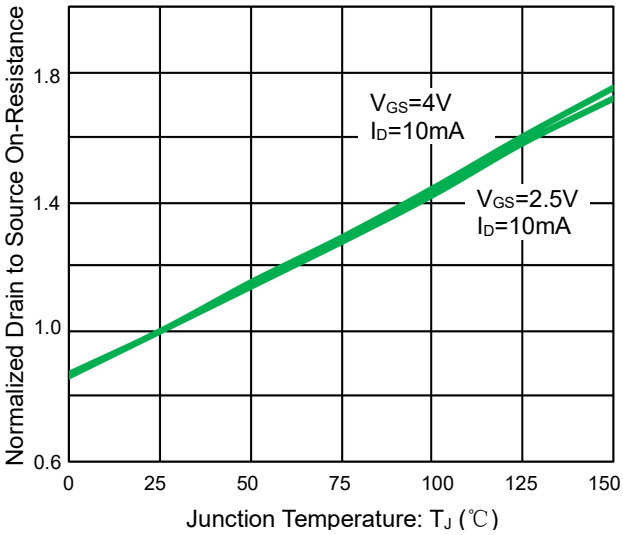
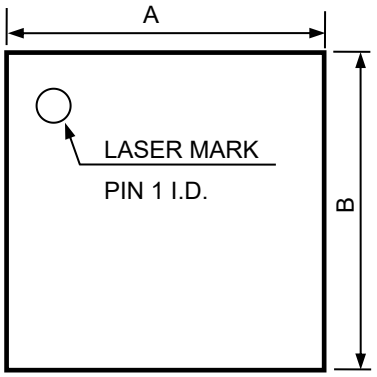
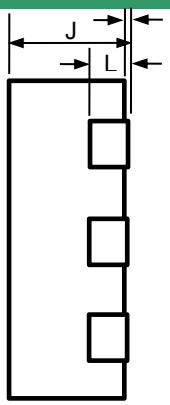


Fig 15. Normalized On-Resistance vs. Junction Temperature

Product dimension DFN(2*2)-6L

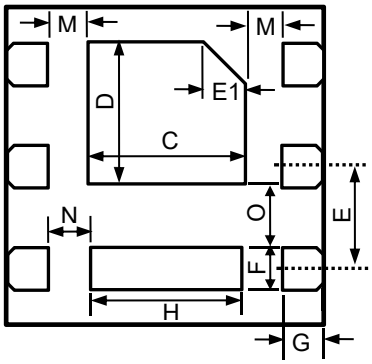


Top View

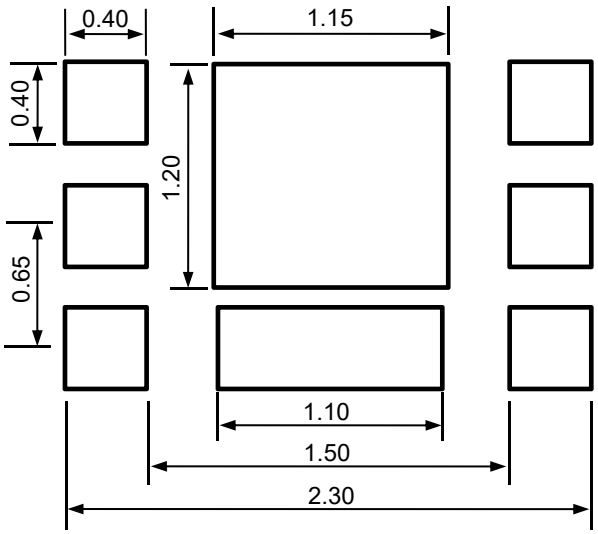


Side View

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



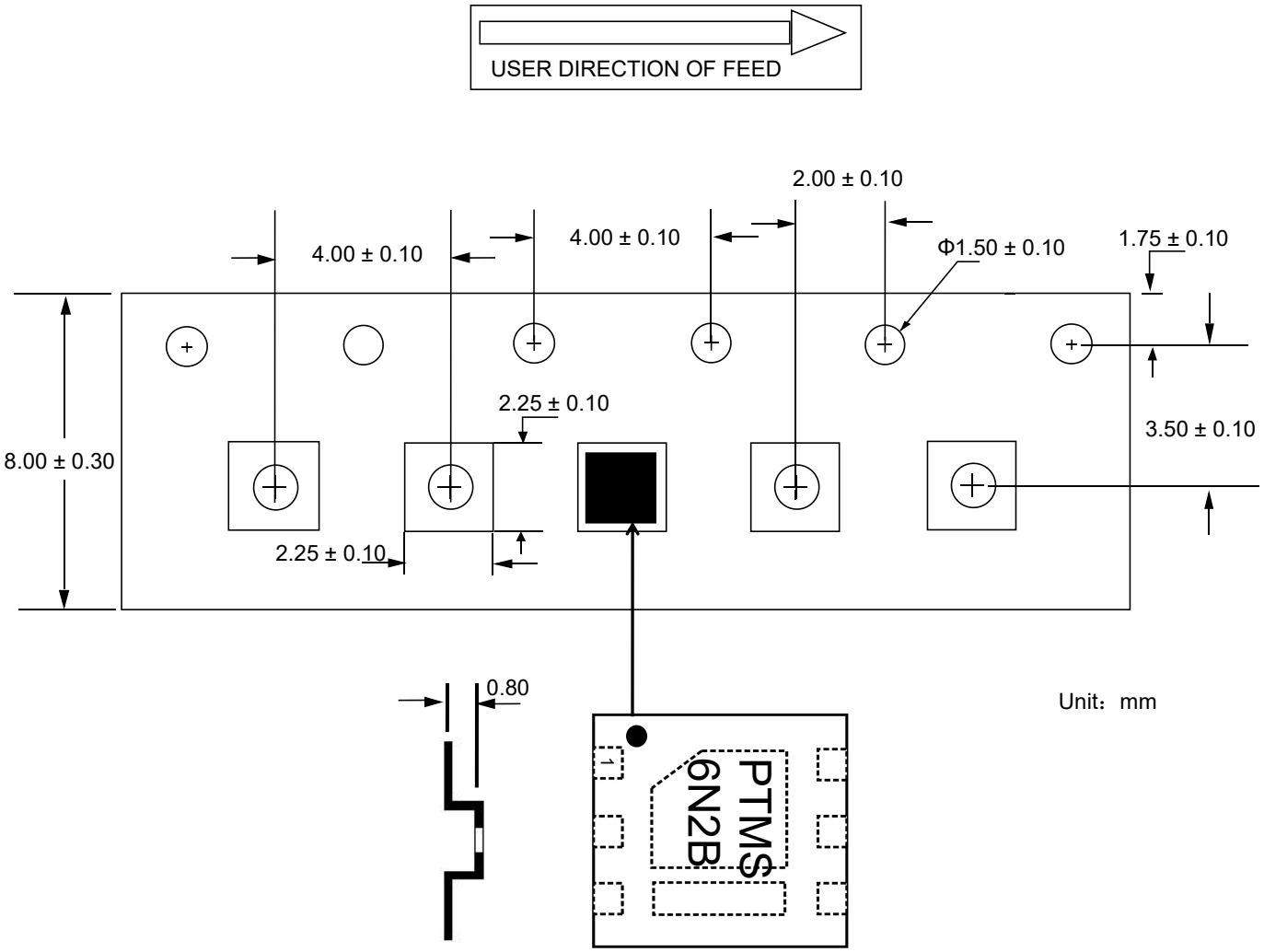
Suggested PCB Layout

Marking information

Ordering information

Device	Package	Reel	Shipping
PNMT6N2B	DFN2*2-6L	7"	3000 / Tape & Reel

Load with information



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