

Feature

This device is Pb-Free, Halogen Free/BFR Free and RoHS compliant.
PNMT6N2C is composed by a transistor and a MOSFET

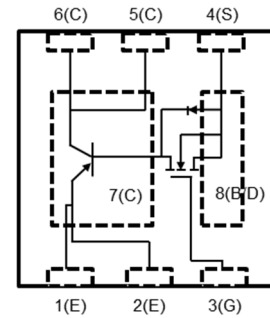
Transistor:

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

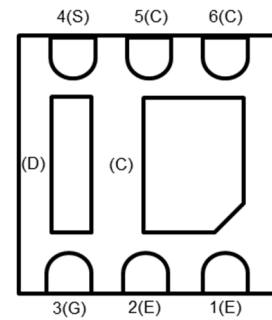
MOSFET:

MOSFET Product Summary		
$V_{DS}(V)$	$R_{DS(on)}(\Omega)$	$I_D(A)$
20	0.2@ $V_{GS}=4.5V$	1

- Transistor



Schematic diagram



Bottom View

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

Parameter	Symbol	Conditions	Value	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10mA$	-30	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -0.1mA$	-40	V
Emitter -Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -0.1mA$	-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
Junction-to-Ambient Thermal Resistance ⁽¹⁾	$R_{\theta JA}$		104	°C/ W

Note 1: Surface mounted on FR-4 Board using 1 square inch pad size, 1oz copper

Absolute maximum rating@25°C

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

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{DSS}	I _D = 1mA, V _{GS} = 0V	20	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V	-	-	±10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.5	-	1.1	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 650mA	-	0.2	0.45	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} = 0V, V _{DS} = 10V, f = 1MHz	-	30	-	pF
Output Capacitance	C _{DSS}		-	13	-	pF
Reverse Transfer Capacitance	C _{RSS}		-	13	-	pF
SWITCHING PARAMETERS						
Turn-On Delay Time	t _{d(on)}	V _{DD} = 10V, V _{GS} = 4.0V, R _G = 10Ω, R _L = 67Ω I _D = 150mA	-	7	-	ns
Turn-Off Delay Time	t _{d(off)}		-	23	-	ns

Absolute maximum rating@25°C

Rating		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 8	V
Drain Current	Continuous	I_D	1	A
	Pulsed	I_D	4	A
Total Power Dissipation	$T_A=25^\circ\text{C}$	P_D	140	mW

Typical Characteristics

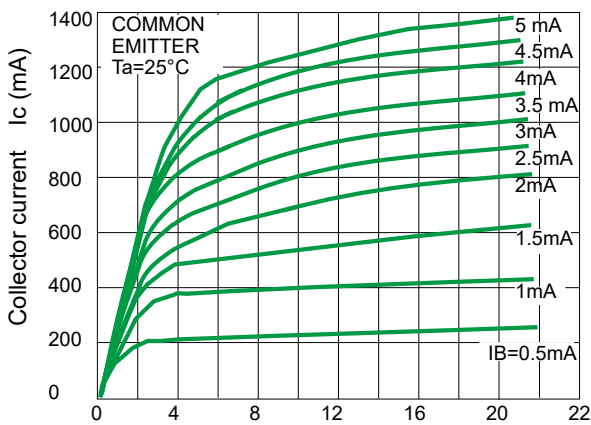


Fig1. Collector-emitter voltage V_{CE} (V)

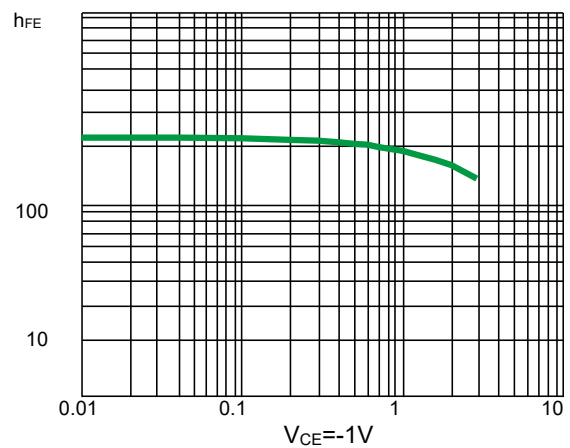


Fig2. DC Current Gain

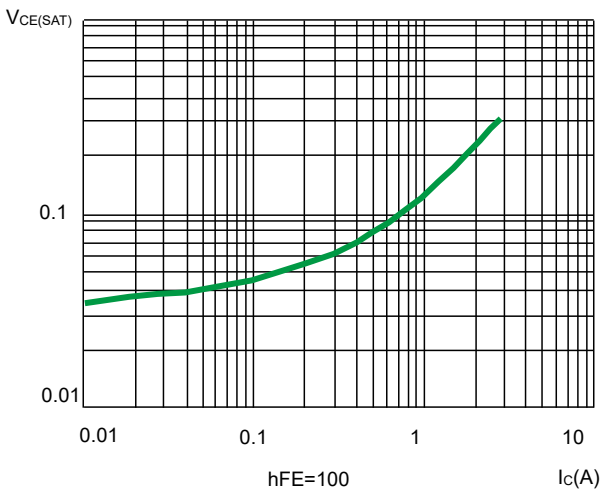


Fig 3. Collector-Emitter Saturation Voltage

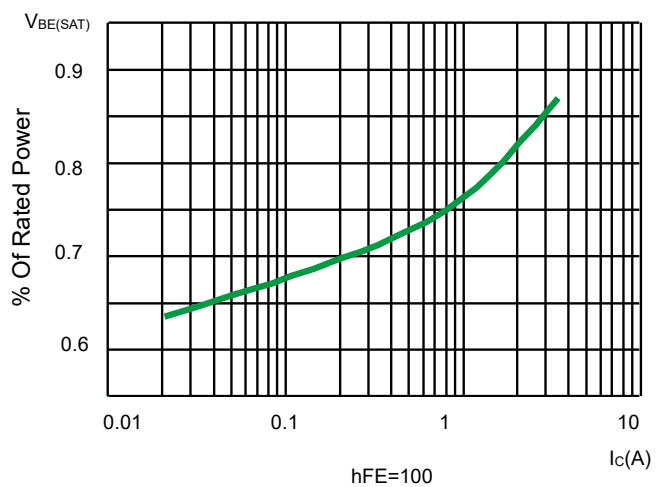


Fig4. Base-Emitter Saturation Voltage

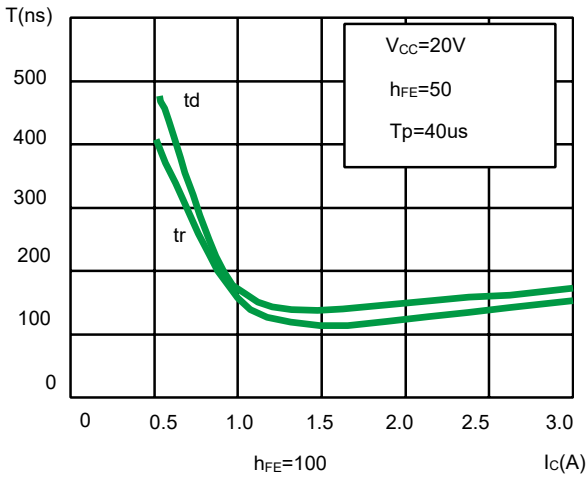


Fig 5. Switching Times Resistive Load

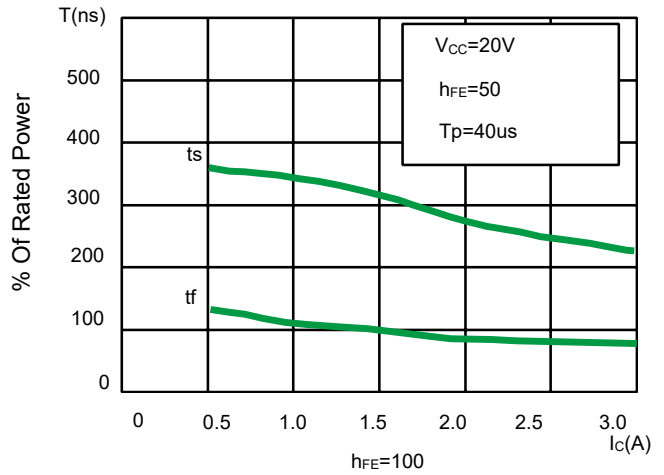


Fig 6. Switching Times Resistive Load

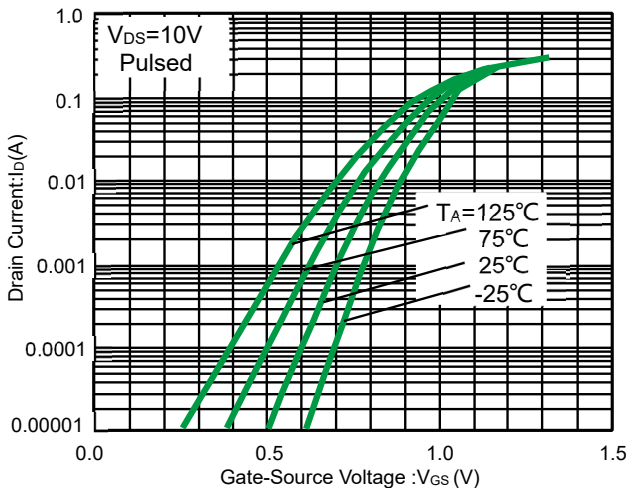


Fig 7. Typical transfer Characteristics

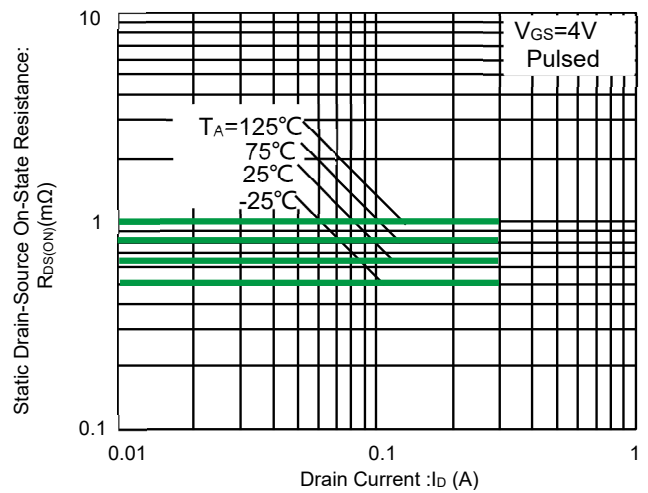


Fig 8. Static drain-source on-state resistance Vs. drain current(1)

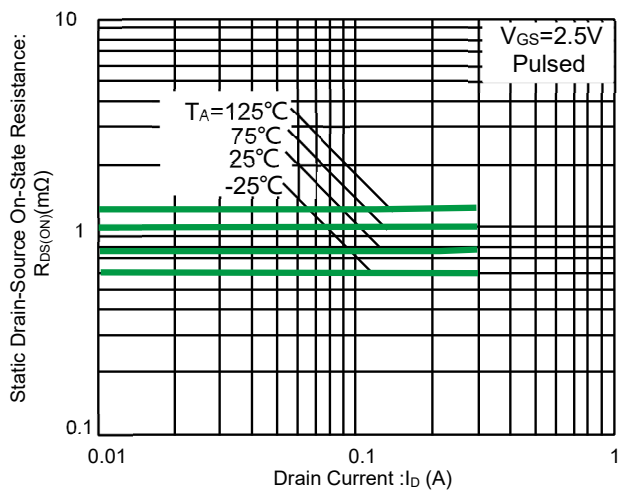


Fig 9. Static drain-source on-state resistance Vs. drain current(2)

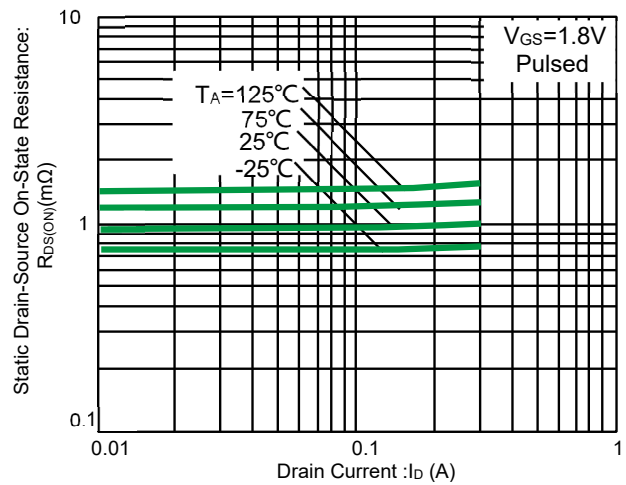


Fig 10. Static drain-source on-state resistance Vs. drain current(3)

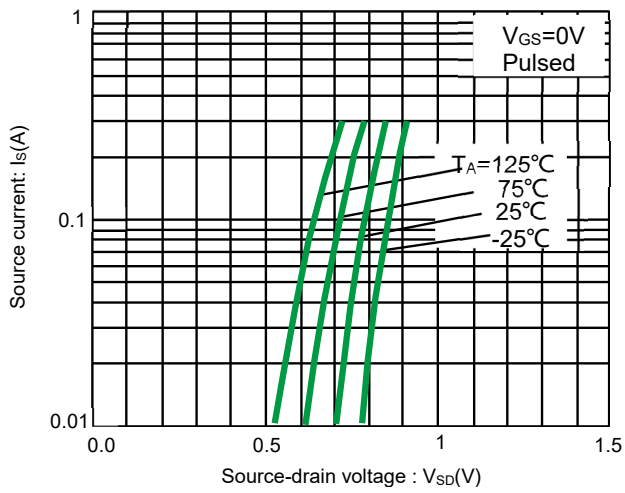


Fig 11. Source current vs. source-drain voltage

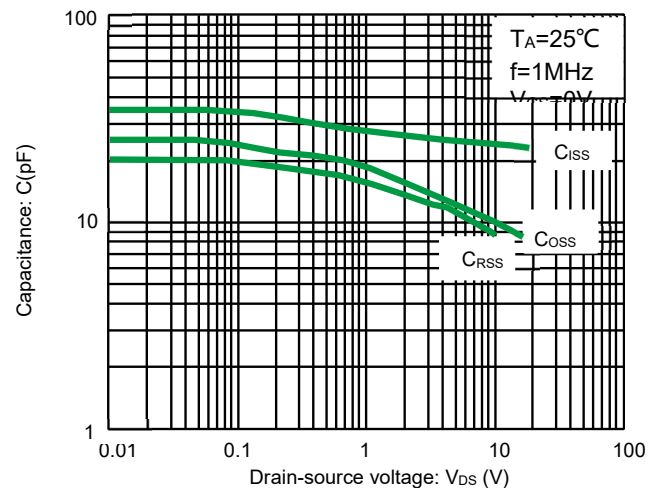


Fig 12. Typical capacitance vs. drain-source voltage

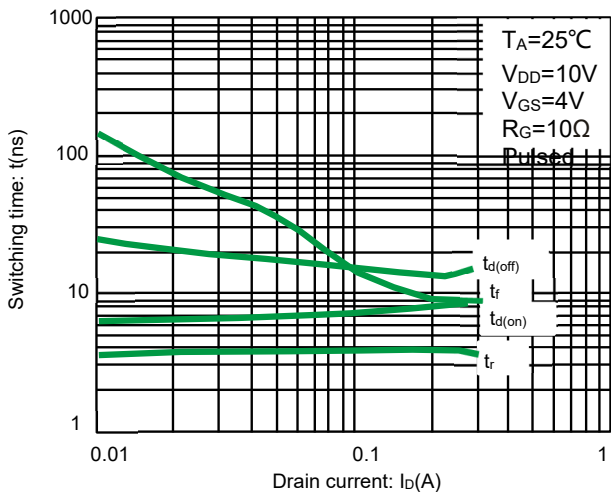
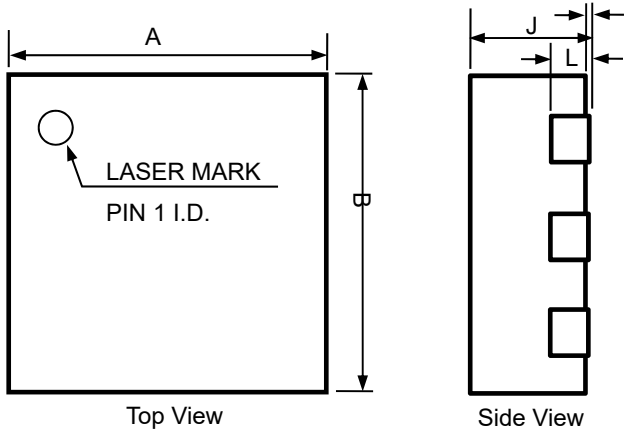
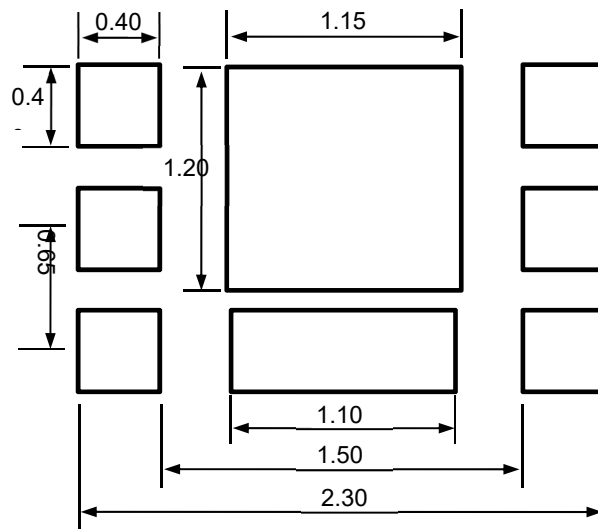
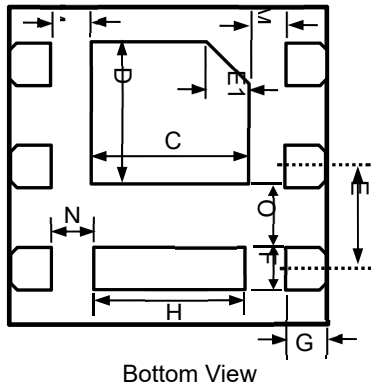


Fig 13. Switching characteristics

Product dimension DFN2020-6L

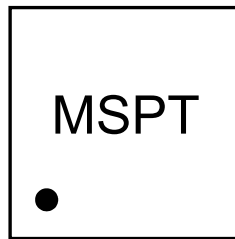


Dim	Millimeters	
	MIN	MAX
A	1.90	2.10
B	1.90	2.10
C	0.70	1.10
D	0.80	1.00
E	0.55	0.75
E1	0.25 Ref.	
F	0.25	0.35
G	0.20	0.35
H	0.50	1.00
J	0.60	0.80
K	0.00	0.05
L	0.20 Ref.	
M	0.15	--
N	0.20	--
O	0.25	--



Suggested PCB Layout

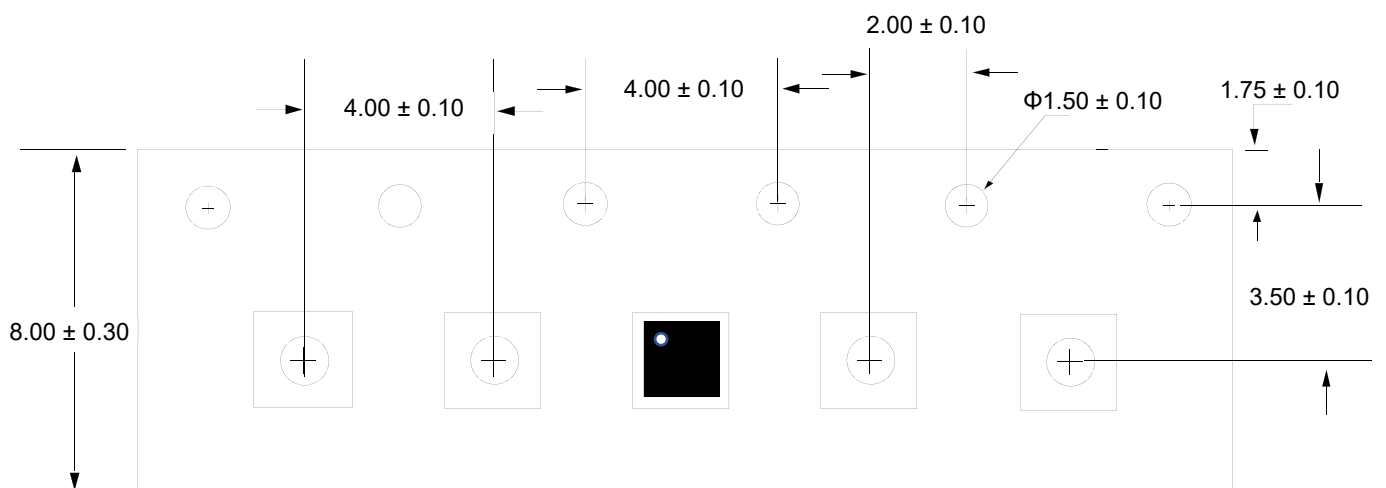
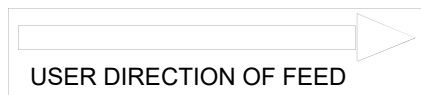
Marking information



Ordering information


Device	Package	Reel	Shipping
PNMT6N2C	DFN2020-6L	7"	3000 / Tape & Reel

Load with information



Unit: mm


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