

Feature

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

PNMT6N1A is composed by two transistors (NPN+PNP).

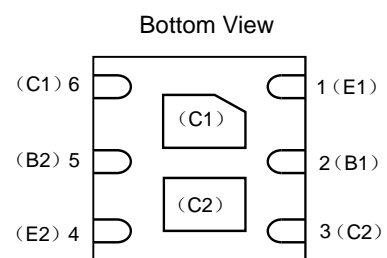
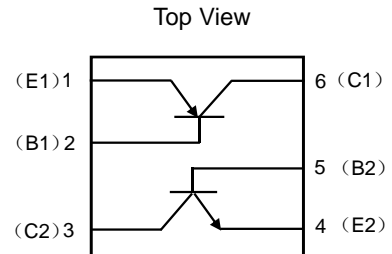
PNP Transistor:

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

NPN Transistor:

- Emitter -Base Breakdown Voltage 10V
- Low Saturation Voltage 80mv
- 0.15A continuous collector current
- NPN switch transistor

- PNP


Absolute maximum rating @25 °C

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
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

Electrical characteristics per line@25°C (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
		$V_{CB}=-30V, T_C=125^\circ C$			-20	
Emitter Cut-off Current($I_C=0$)	I_{EBO}	$V_{EB}=-5V$			-0.1	μA

➤ NPN

Absolute maximum rating@25°C

Parameter	Symbol	Value	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80	V
Emitter -Base Breakdown Voltage	$V_{(BR)EBO}$	10	V
Collector Current	I_C	0.15	A
Total Dissipation @25°C	P_{tot}	0.15	W
Storage Temperature	T_{stg}	-65~150	°C
Max. Operating Junction Temperature	T_j	150	°C

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=50\mu A$	80			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=1mA$	50			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=50\mu A$	10			V
Collector Cut-off Current ($I_E=0$)	I_{CBO}	$V_{CB}=60V$			0.15	μA

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Emitter Cut-off Current($I_{C=0}$)	I_{EBO}	$V_{EB}=7V$			0.1	μA
DC Current Gain	h_{FE}	$I_C=1mA, V_{CE}=6V$	200		350	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50mA, I_B=5mA$	-		0.08	V
Transition frequency	f_T	$V_{CE}=12V, I_E=-2mA, f=100MHz$		220		MHz
Output Capacitance	C_{ob}	$V_{CE}=12V, I_E=0mA, f=1MHz$		1.5	3.5	pF

Typical Characteristics

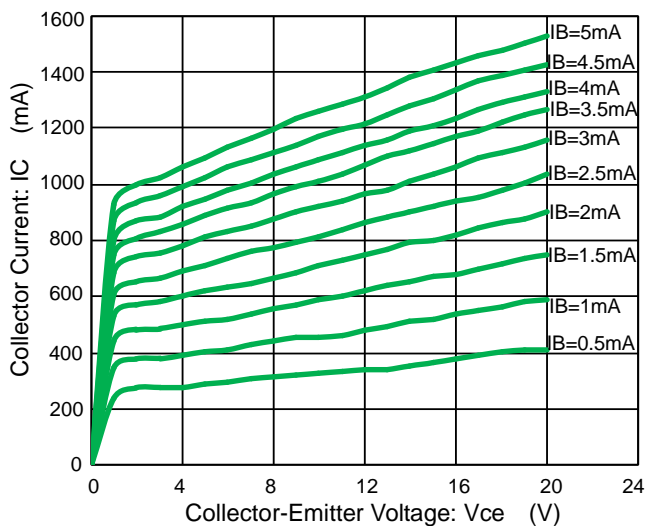


Fig 1. Collector Current vs. Collector-Emittor Voltage

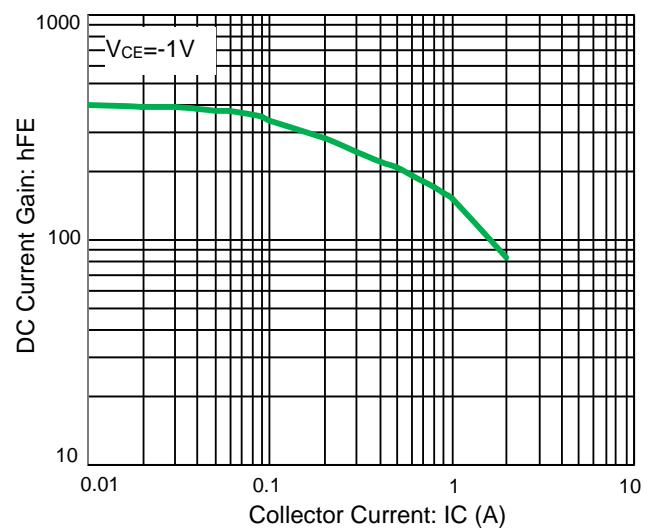


Fig 2. DC Current Gain

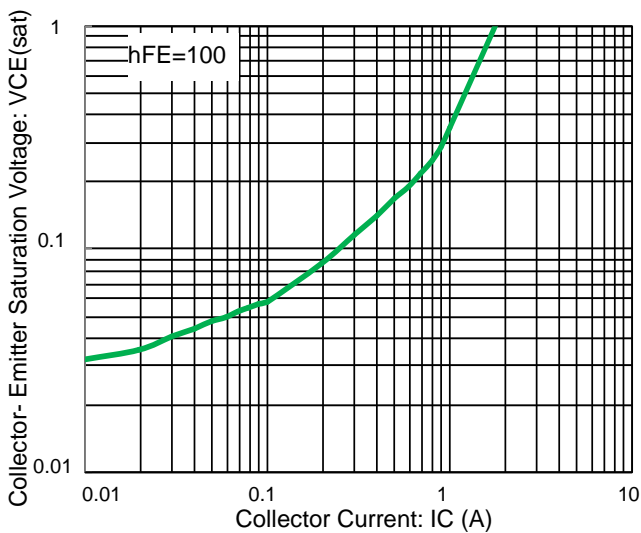


Fig 3. C-E saturation Voltage vs. Collector Current

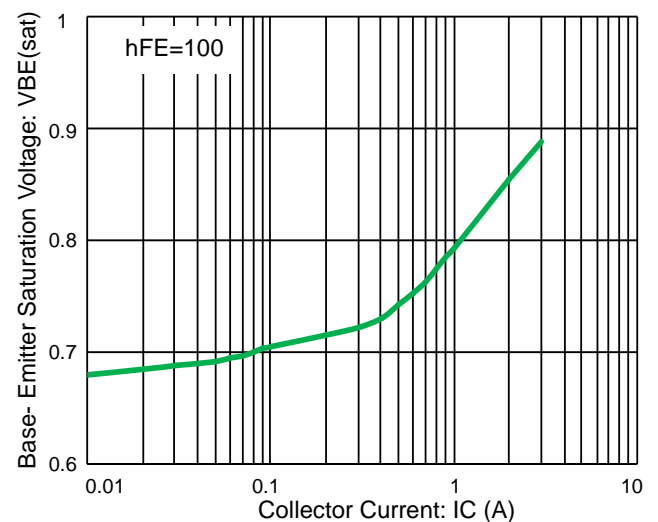


Fig 4. B-E Saturation Voltage vs. Collector Current

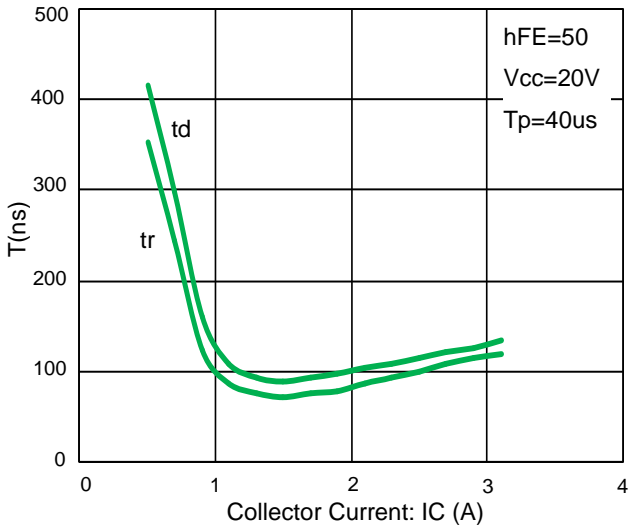


Fig 5. Switching Times Resistive Load

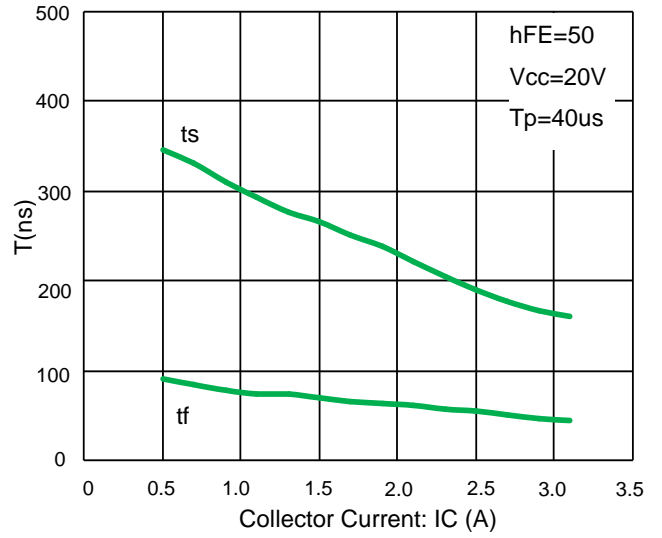


Fig 6. Switching Times Resistive Load

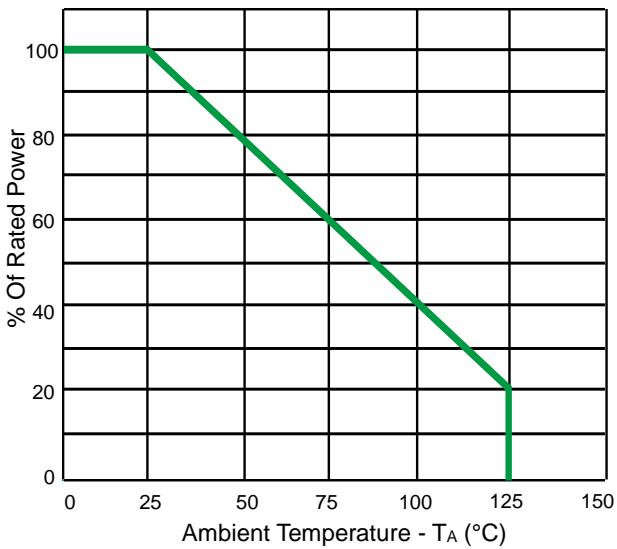


Fig 7. Power Derating Curve

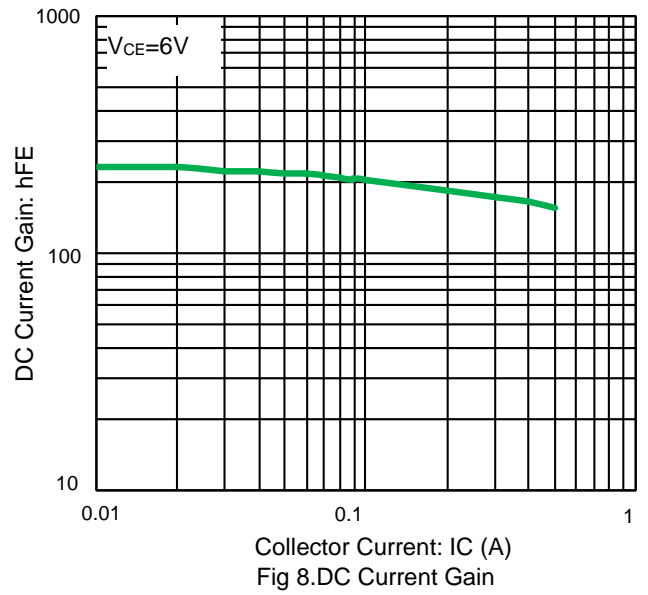


Fig 8. DC Current Gain

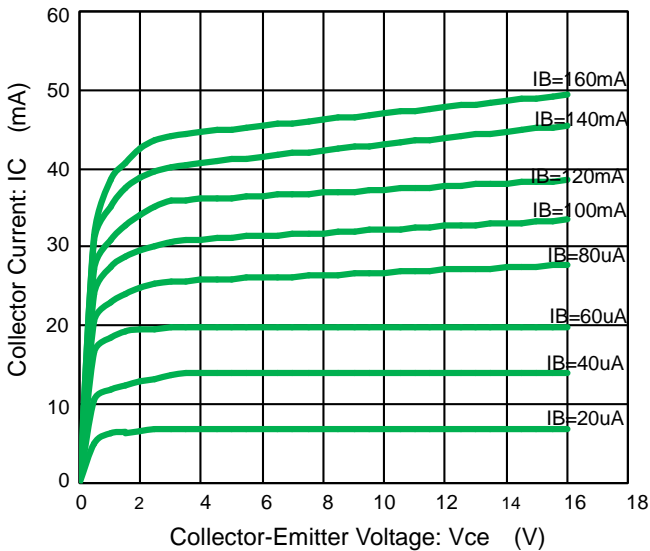


Fig 9. Collector Current vs. Collector-Emitter Voltage

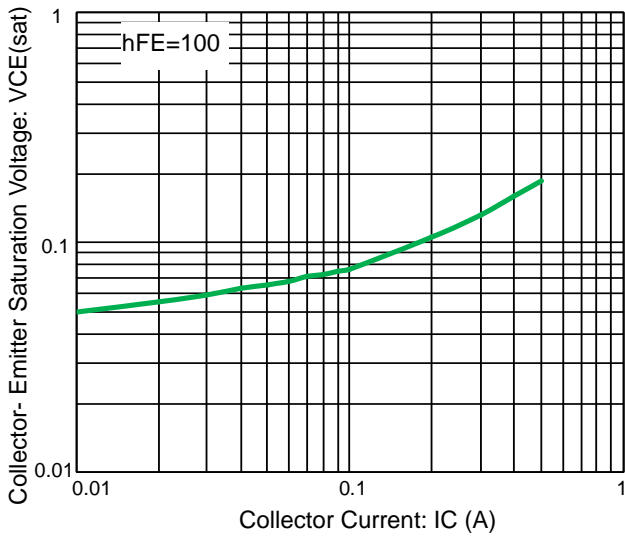


Fig 10. C-E saturation Voltage vs. Collector Current

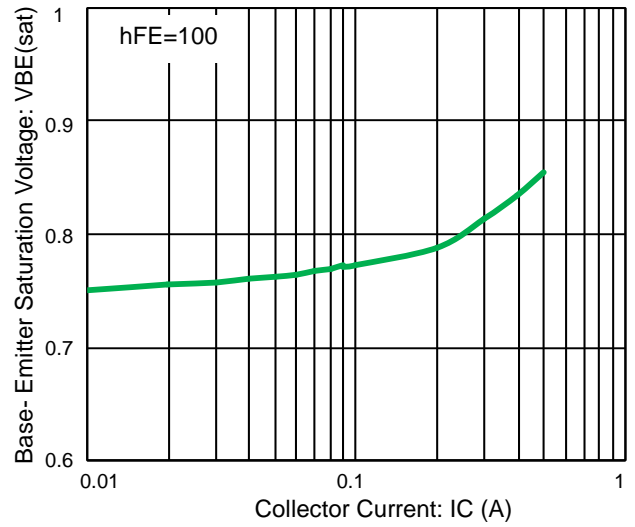


Fig 11. B-E Saturation Voltage vs. Collector Current

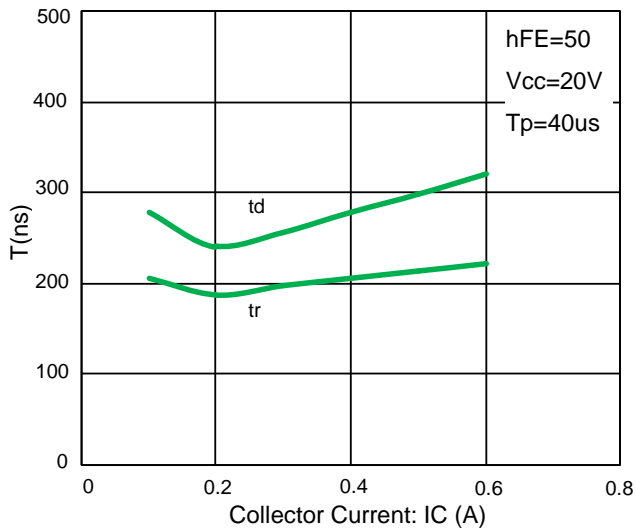


Fig 12. Switching Times Resistive Load

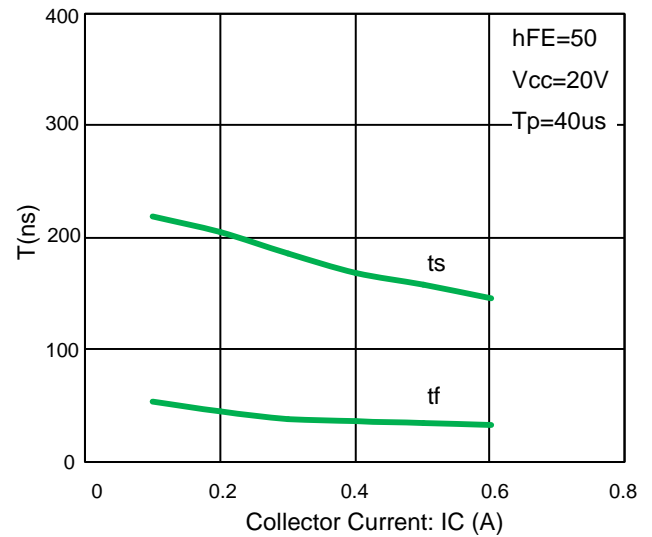
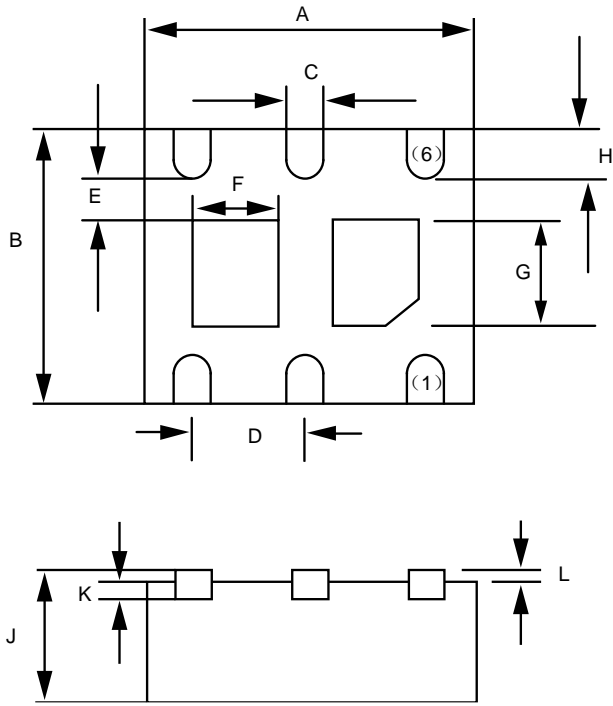
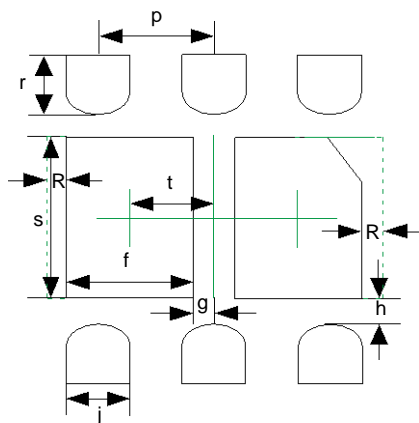


Fig 13. Switching Times Resistive Load

Product dimension DFN-6L(2*2)



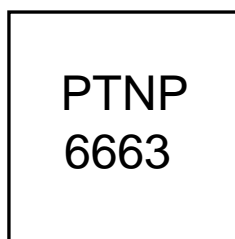
Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.924	2.076	0.076	0.082
B	1.924	2.076	0.076	0.082
C	0.250	0.350	0.010	0.014
D	0.650 (typ.)		0.026 (typ.)	
E	0.200 MIN.		0.008 MIN.	
F	0.520	0.720	0.020	0.028
G	0.900	1.100	0.035	0.043
H	0.174	0.326	0.007	0.013
J	0.550	0.650	0.021	0.027
K	0.206 REF		0.206 REF	
L	0.203 REF		0.203 REF	



If there is enough place in PCB. It can be mounted with copper along the dotted line in order to optimize thermal design.

Dim	Millimeters	
	MIN	MAX
p	0.60	0.70
r	0.40	0.50
s	1.05	1.15
t	0.42	0.52
f	0.67	0.77
g	0.06	0.16
h	0.1	0.2
j	0.35	0.45
R	0.1	0.2


Marking information



Ordering information

Device	Package	Reel	Shipping
PNMT6N1A	DFN-6L (2*2)	7"	3000 / Tape & Reel


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