

# High speed thermal printhead (300 dots / inch)

## NB3004-VA10A

The NB3004-VA10A is a flat thin-film thermal printhead capable of printing speeds up to 10 inch / second, and suited for general purpose compact printers as well as label printers.

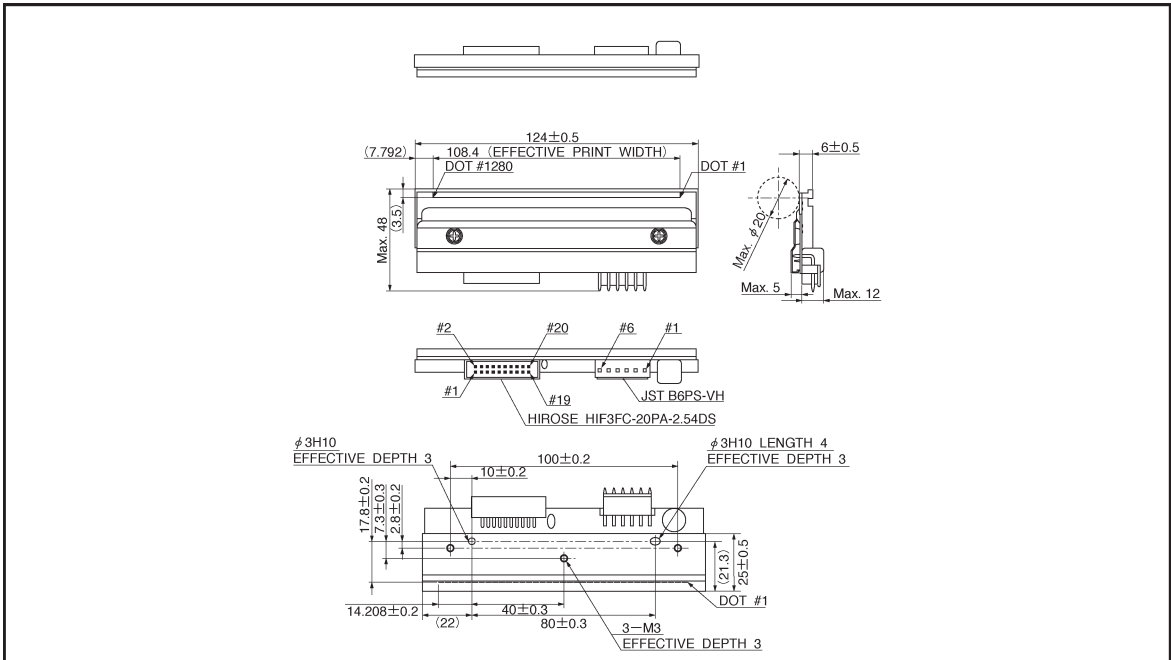
●Applications

- High definition bar code label printers
- High definition ticket printers
- General purpose compact printers

●Features

- 1) High resolution of 300 dots / inch.
- 2) Special glazed components for high speed, high quality printing.
- 3) High speed clock (10MHz) to facilitate external heat history control.
- 4) Using a hard conductive film as a protective film on the heating element offers excellent resistance to electrostatic damage.
- 5) Compatible with the NB2004-VA10A (8 dots / mm) in mechanical specifications, to facilitate the making of a series of printers.

●External dimensions (Units: mm)



Note: No heat history control function inside the thermal printhead. External heat history control is required for high speed printing.

●Characteristics

Parameter	Symbol	Typical	Unit
Effective printing width	—	108.4	mm
Dot pitch	—	0.0847	mm
Total dot number	—	1280	dots
Average resistance value	Rave	850	Ω
Applied voltage	V <sub>H</sub>	24	V
Applied power	P <sub>O</sub>	0.602	W / dot
Print cycle	SLT	0.83	ms
Pulse width	T <sub>ON</sub>	0.191	ms
Maximum number of dots energized simultaneously	—	1280	dots
Maximum clock frequency	—	10	MHz
Maximum roller diameter	—	20	mm
Running life / pulse life	—	50 / 10 <sup>8</sup>	km / pulses
Operating temperature	—	5~45	°C

●Pin assignments

HIROSE

No.	Circuit	No.	Circuit
1	V <sub>DD</sub>	2	BEO
3	GND	4	DI4
5	DI3	6	CLK
7	$\overline{\text{LA}}$	8	GND
9	GND	10	DI2
11	DI1	12	GND
13	V <sub>DD</sub>	14	$\overline{\text{STB2}}$
15	$\overline{\text{STB1}}$	16	TM
17	TM	18	SENS1
19	SENS2	20	SENS3

JST

No.	Circuit
1	VH
2	VH
3	VH
4	GND
5	GND
6	GND

● Timing chart

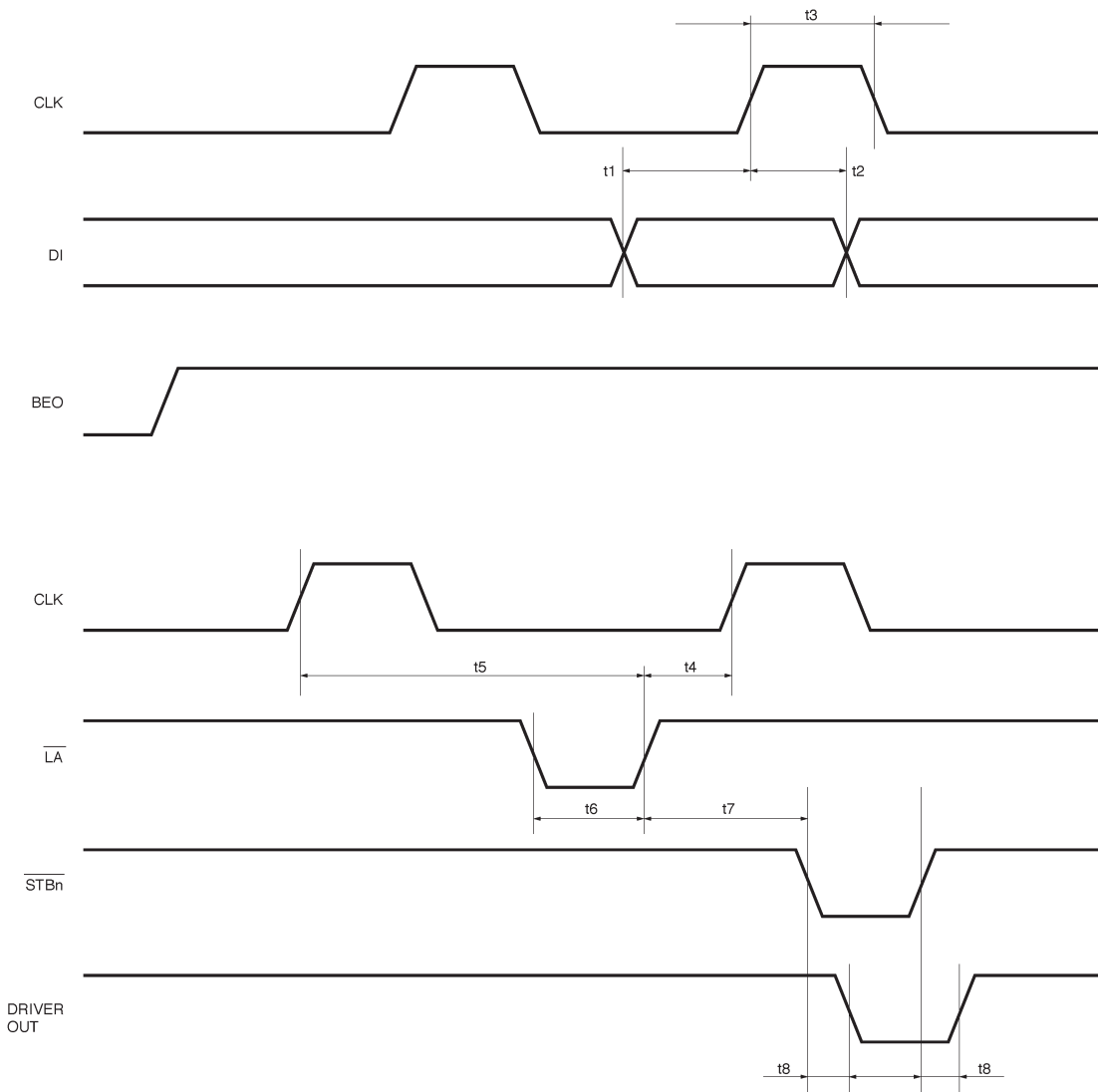
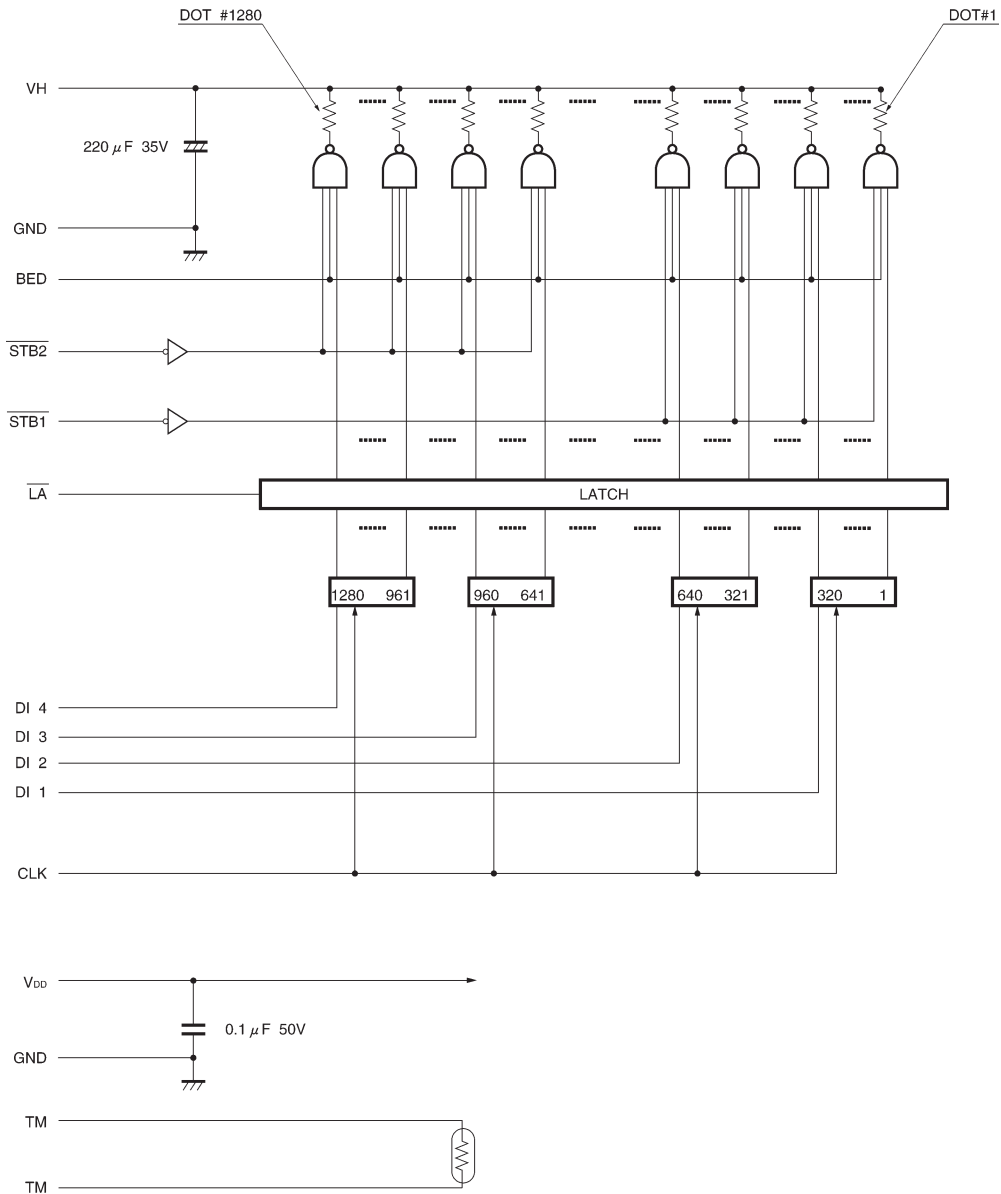


Fig.1

●Equivalent circuit

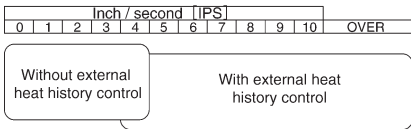


DI No.	DOT No.
DI 4	1280~961
DI 3	960~641
DI 2	640~321
DI 1	320~ 1

STB No.	DOT No.
STB 2	1280~641
STB 1	640~ 1

Fig. 2

●Supported speeds chart



●Electrical characteristic curves

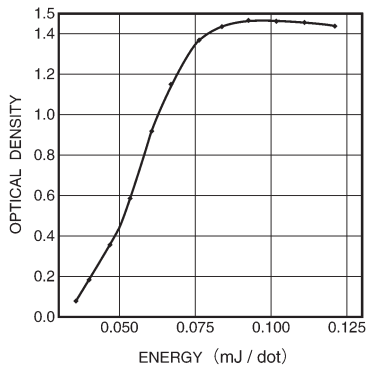


Fig. 3 Representative density curve

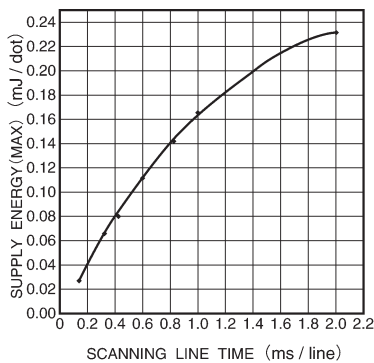


Fig. 4 Maximum energy curve

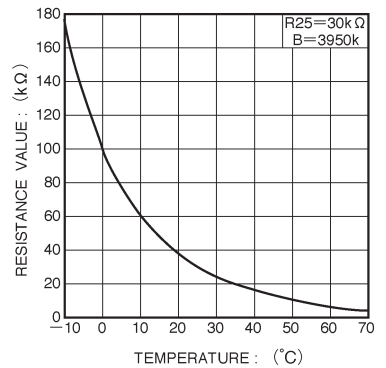


Fig. 5 Thermistor curve