High speed thermal printhead (8 dots / mm)
NB2004-VA10A

The NB2004-VA10A is a flat thin-film thermal printhead capable of printing speeds up to 12 inch / second, and suited for general purpose compact printers as well as label printers.

●Applications
Bar code label printers
Ticket printers
General purpose compact printers

●Features
1) Special glazed components for high speed, high quality printing.
2) High speed clock (10MHz) to facilitate external heat history control.
3) Using a hard conductive film as a protective film on the heating element offers excellent resistance to electrostatic damage.
4) Compatible with the NB3004-VA10A (300 dpi) in mechanical specifications, to facilitate the making of a series of printers.

●External dimensions (Units: mm)
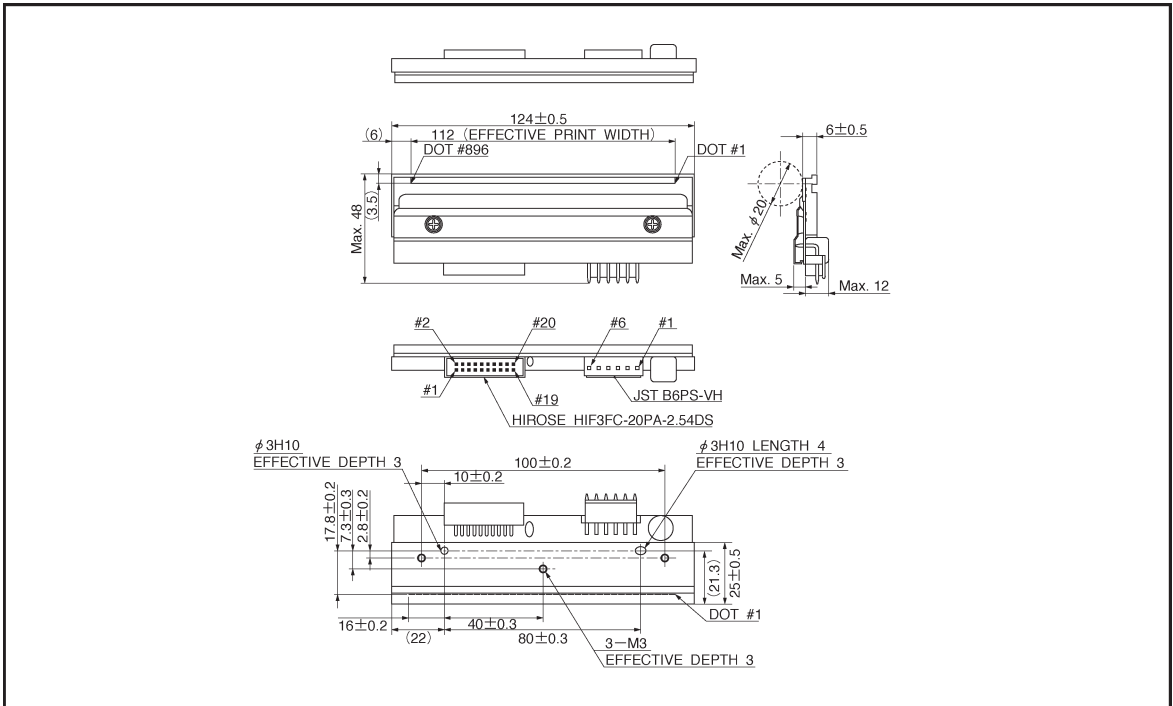
Note: No heat history control function inside the thermal printhead. External heat history control is required for high speed printing.

●Characteristics

Parameter	Symbol	Typical	Unit
Effective printing width	—	112	mm
Dot pitch	—	0.125	mm
Total dot number	—	896	dots
Average resistance value	Rave	550	Ω
Applied voltage	V_H	24	V
Applied power	P_O	0.906	W / dot
Print cycle	SLT	0.98	ms
Pulse width	T_{ON}	0.265	ms
Maximum number of dots energized simultaneously	—	896	dots
Maximum clock frequency	—	10	MHz
Maximum roller diameter	—	20	mm
Running life / pulse life	—	$50 / 10^8$	km / pulses
Operating temperature	—	5〜45	℃

●Pin assignments

HIROSE

No.	Circuit	No.	Circuit
1	V_{DD}	2	BEO
3	GND	4	DI4
5	DI3	6	CLK
7	$\overline{LA}$	8	GND
9	GND	10	DI2
11	DI1	12	GND
13	V_{DD}	14	$\overline{STB2}$
15	$\overline{STB1}$	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

ROHM

●Timing chart
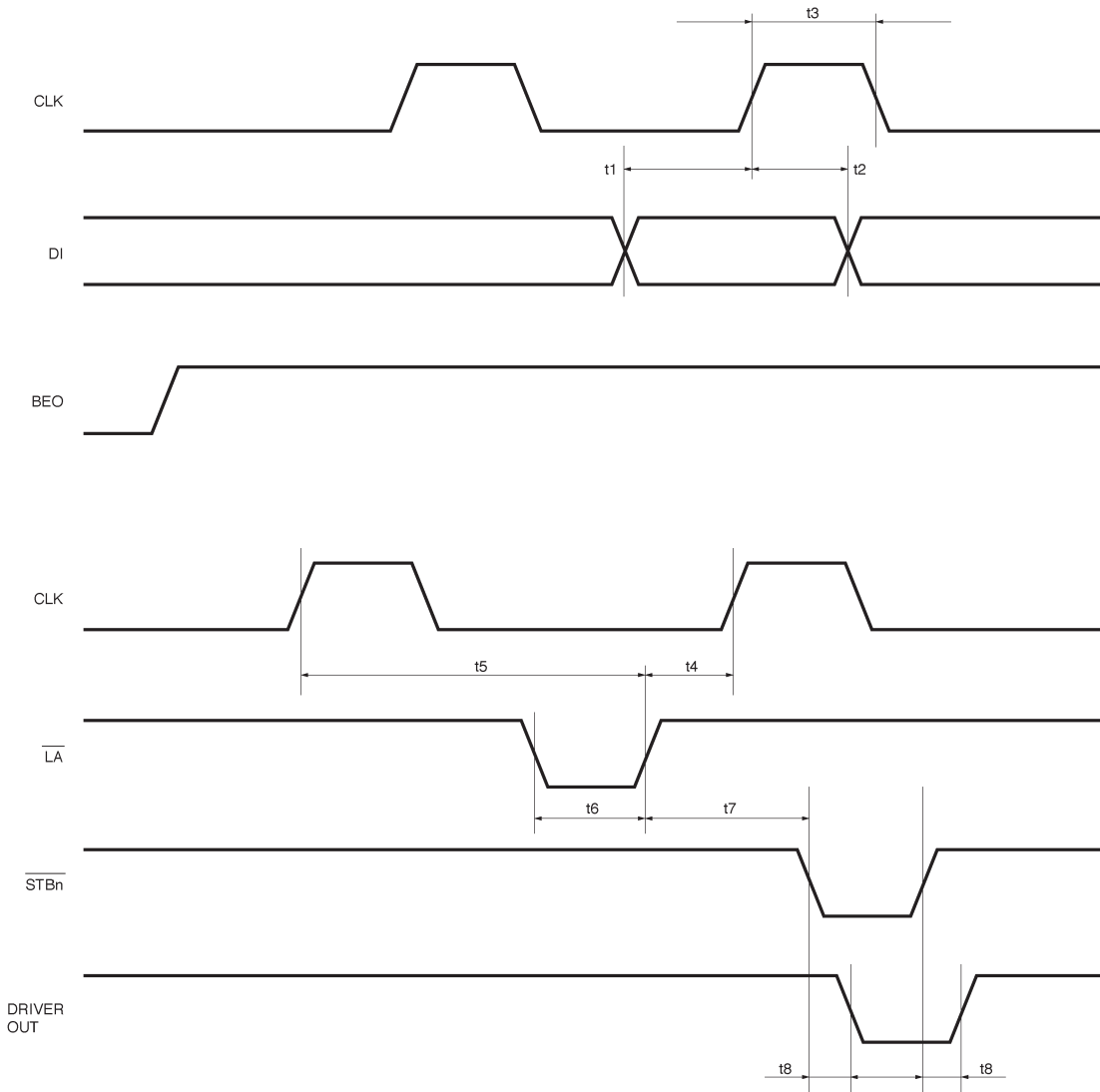
Fig.1

●Equivalent circuit

Fig. 2

DI No.	DOT No.
DI 4	896～641
DI 3	640～449
DI 2	448～193
DI 1	192～　1

$\overline{STB}$ No.	DOT No.
$\overline{STB}$ 2	896～449
$\overline{STB}$ 1	448～　1
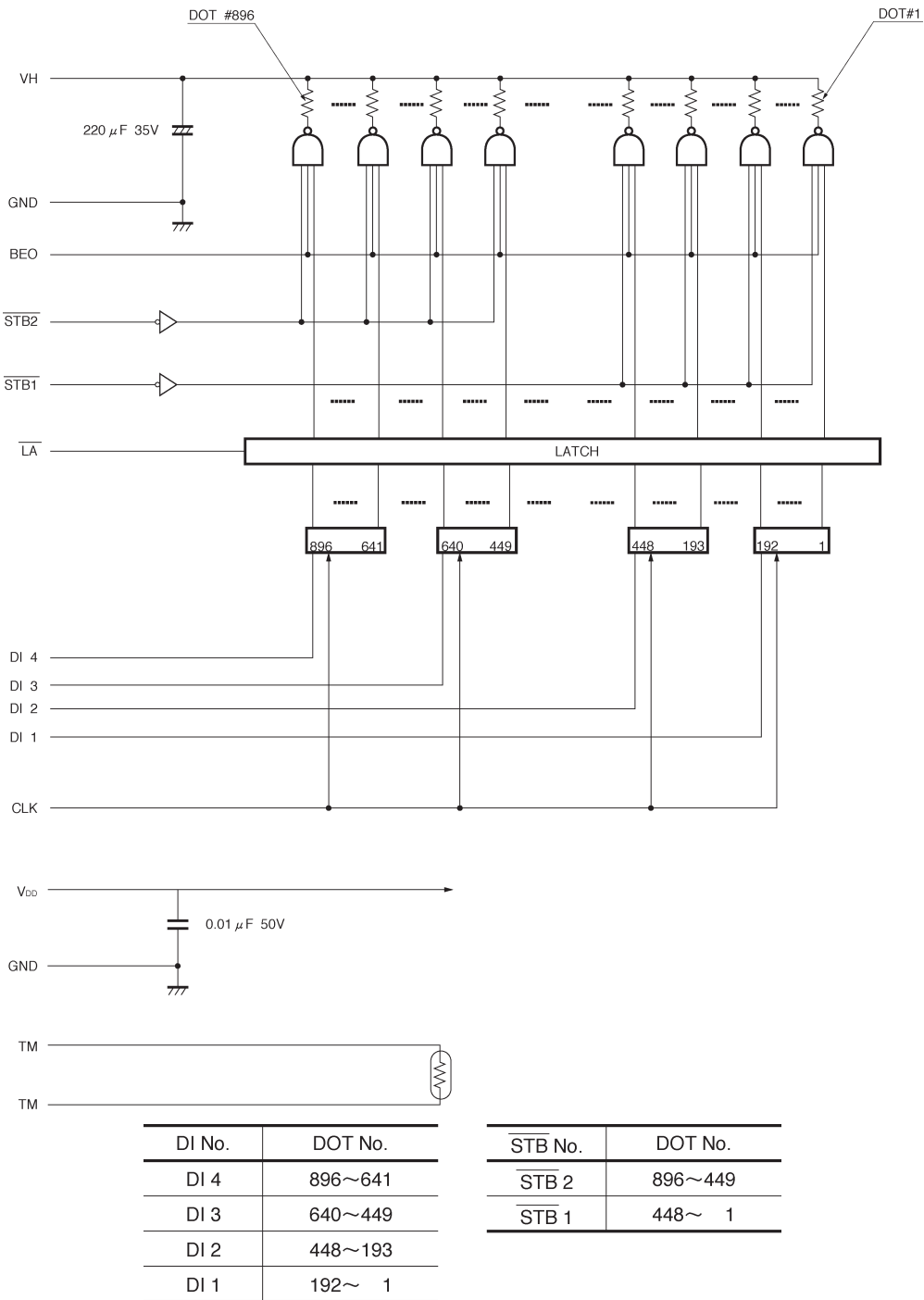
●Supported speeds chart

	Inch / second〔IPS〕										
0	1	2	3	4	5	6	7	8	9	10	OVER

Without external heat history control

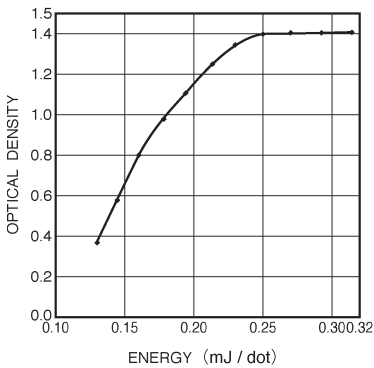With external heat history control
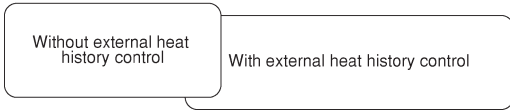
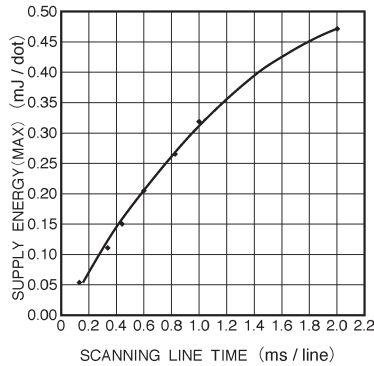●Electrical characteristic curves

Fig. 3 Representative density curve

Fig. 4 Maximum energy curve

Fig. 5 Thermistor curve