

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.

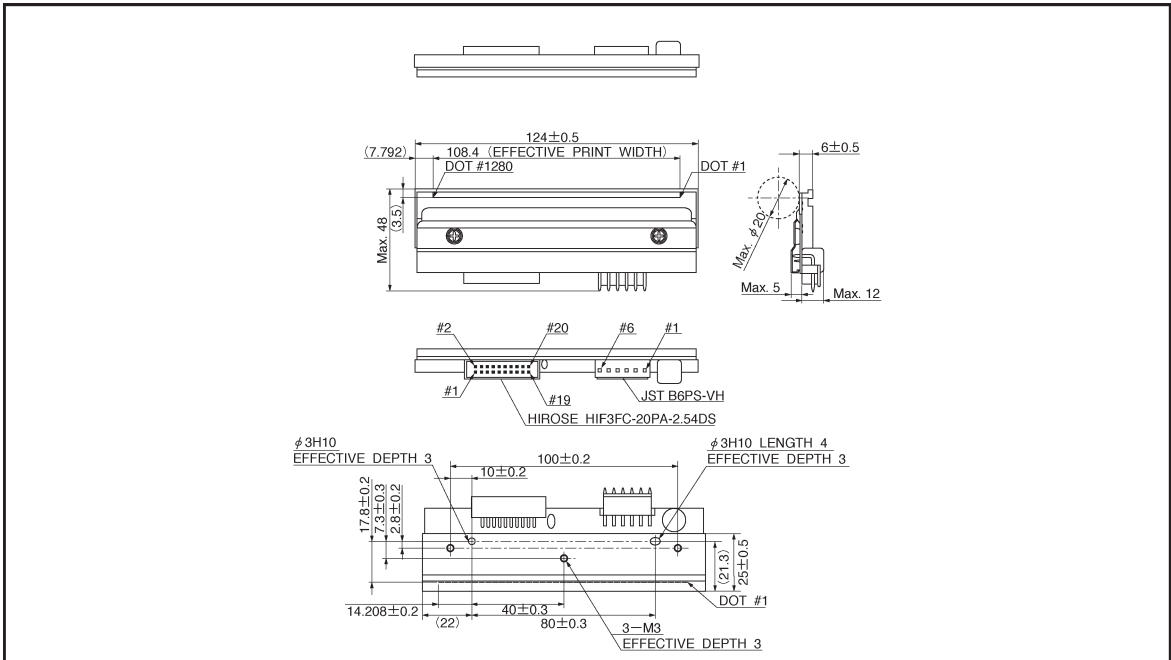
●Applications

- 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 _H | 24 | V |
| Applied power | P _O | 0.602 | W / dot |
| Print cycle | SLT | 0.83 | ms |
| Pulse width | T _{ON} | 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 ⁸ | km / pulses |
| Operating temperature | — | 5~45 | °C |

●Pin assignments

HIROSE

| No. | Circuit | No. | Circuit |
|-----|--------------------------|-----|--------------------------|
| 1 | V _{DD} | 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 _{DD} | 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

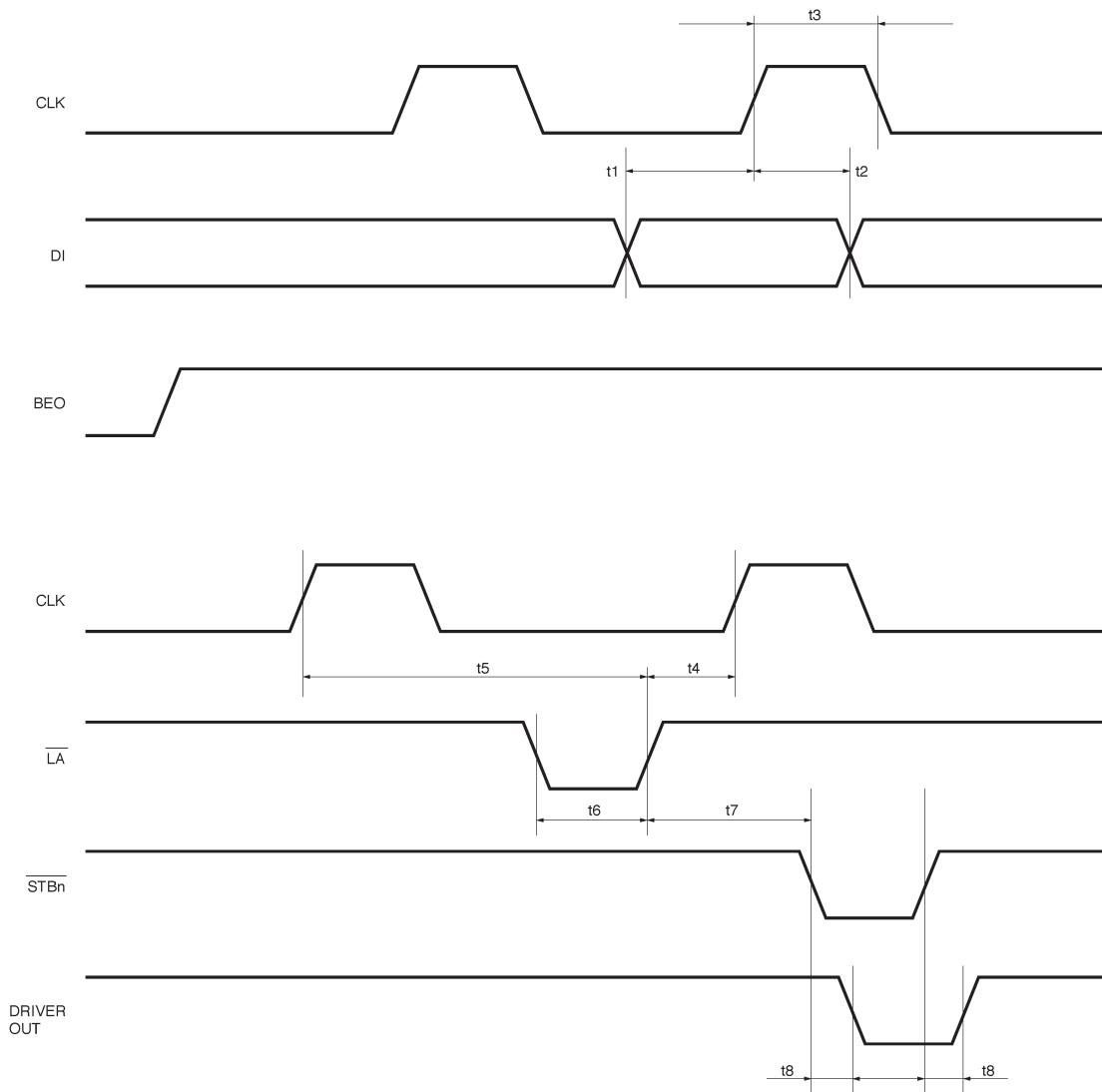
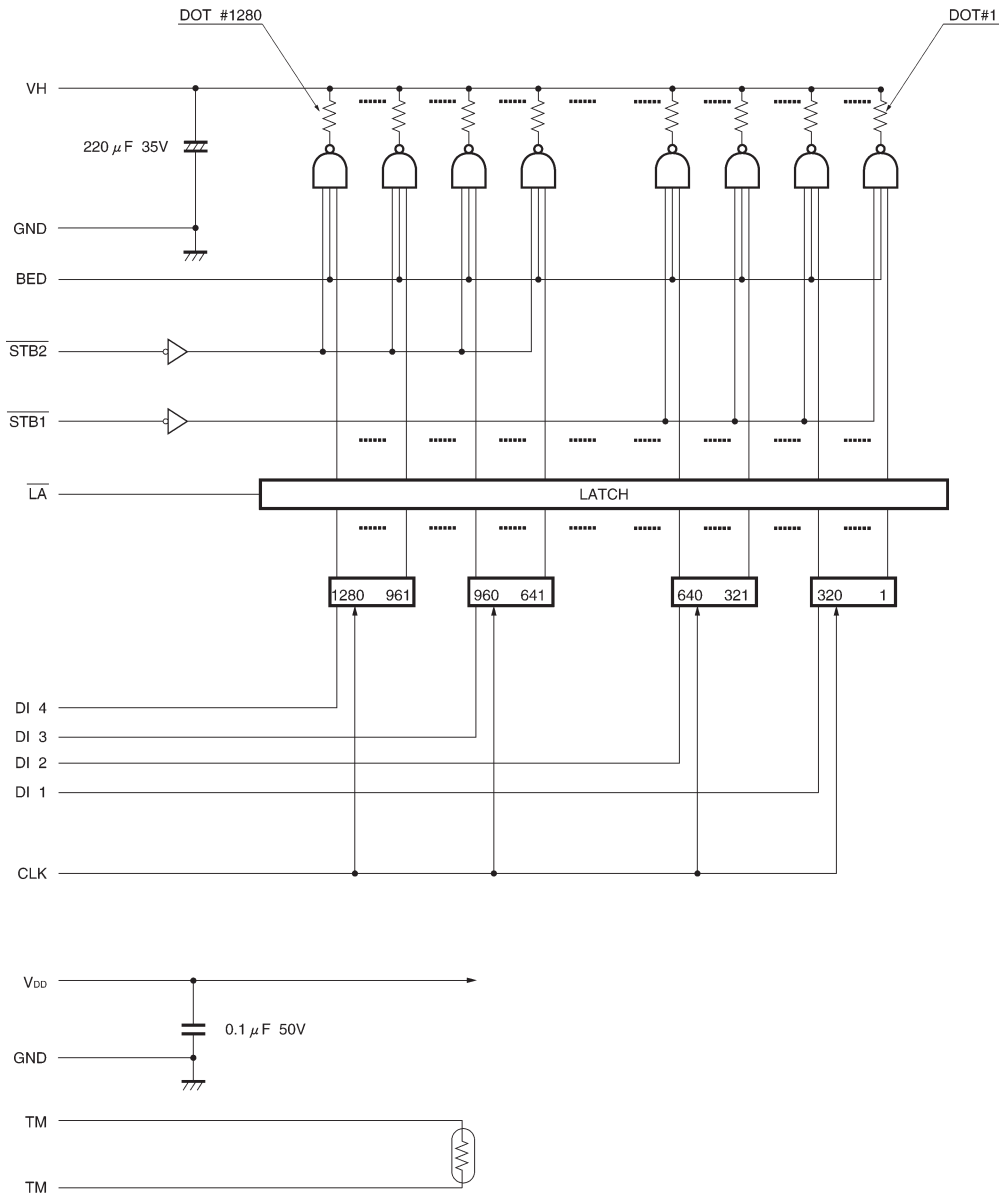


Fig.1

●Equivalent circuit

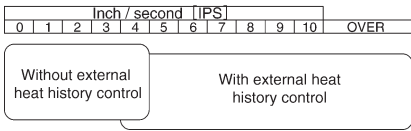


| DI No. | DOT No. |
|--------|----------|
| DI 4 | 1280~961 |
| DI 3 | 960~641 |
| DI 2 | 640~321 |
| DI 1 | 320~ 1 |

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

Fig. 2

●Supported speeds chart



●Electrical characteristic curves

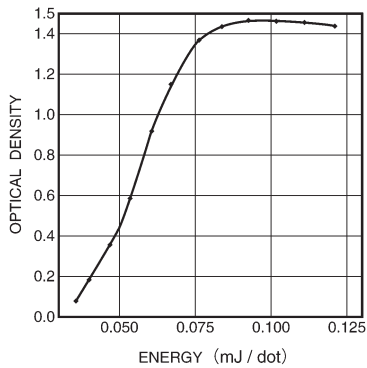


Fig. 3 Representative density curve

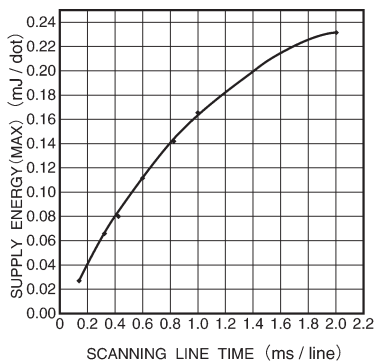


Fig. 4 Maximum energy curve

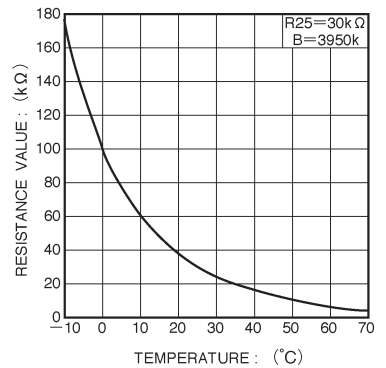


Fig. 5 Thermistor curve