

Printheads

Near edge thermal printhead (8 dots / mm) NE2002-VA10A

The NE2002-VA10A is a near edge thin-film thermal printhead, where the printing medium passes straight through at printing speeds up to 10 inch / second. It is suited for high-speed label printers.

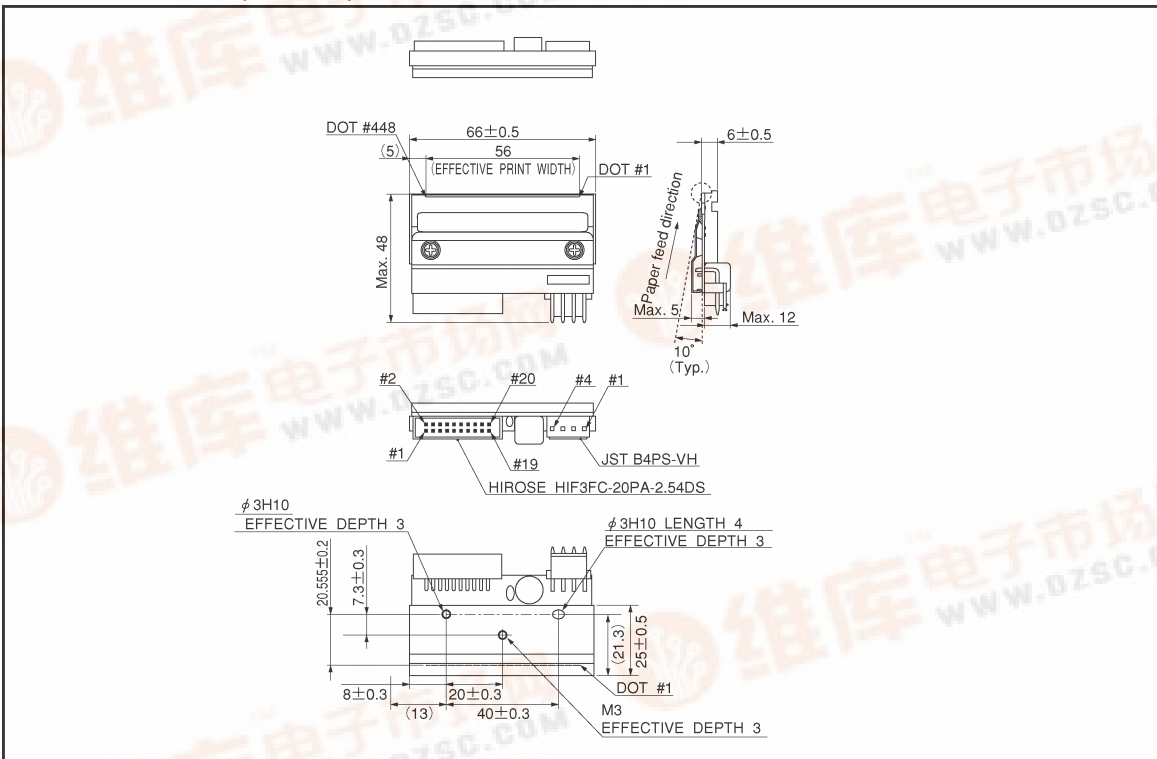
●Applications

Bar code label printers
Card printers
Ticket printers
General purpose compact printers

●Features

- 1) Inclined toward the printing surface to provide excellent printing quality even for cards and thick paper.
- 2) Prints directly on printing medium that cannot be bent.
- 3) Using a hard conductive film as a protective film on the heating element offers excellent resistance to electrostatic damage.
- 4) Being low-profile when installed enables smaller printers.
- 5) Compatible with the NE3002-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.

Printheads

NE2002-VA10A

●Characteristics

Parameter	Symbol	Typical	Unit
Effective printing width	—	56	mm
Dot pitch	—	0.125	mm
Total dot number	—	448	dots
Average resistance value	Rave	850	Ω
Applied voltage	V _H	24	V
Applied power	P _O	0.59	W / dot
Print cycle	SLT	1.5	ms
Pulse width	T _{ON}	0.36	ms
Maximum number of dots energized simultaneously	—	448	dots
Maximum clock frequency	—	10	MHz
Maximum roller diameter	—	—	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	DI
5	N.C.	6	CLK
7	LA	8	GND
9	GND	10	N.C.
11	N.C.	12	GND
13	V _{DD}	14	STB2
15	STB1	16	TM
17	TM	18	SENS1
19	SENS2	20	SENS3

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

● Timing chart

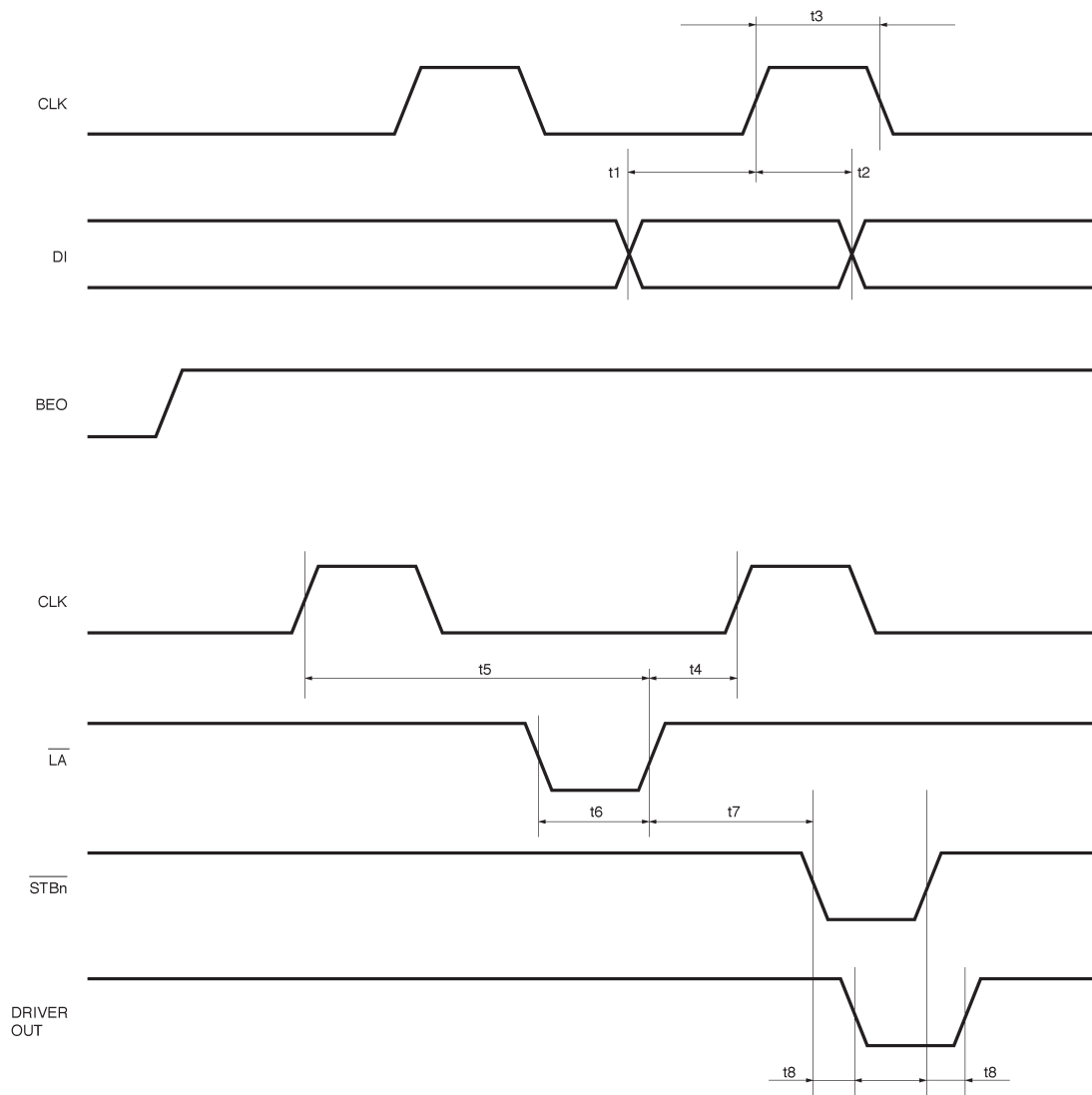


Fig.1

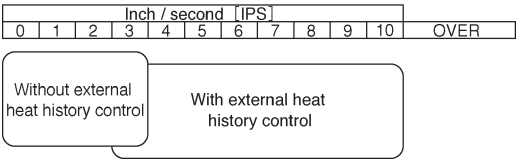
The schematic diagram illustrates a 4-bit parallel adder circuit. It consists of the following components and connections:

- 74181 ALU:** A 4-bit parallel adder-subtractor. Its inputs are:
 - COM:** Connected to a common bus with pull-up resistors labeled "DOT #448" and "DOT #1".
 - GND:** Grounded.
 - BED:** Connected to the common bus.
 - STB2:** Inverted input, connected to the common bus.
 - STB1:** Inverted input, connected to the common bus.
 - LA:** Latch enable input, connected to the common bus.
- 74180 Majority Gates:** Four 3-input majority gates. Each gate has three inputs connected to the common bus, labeled "DOT #448" and "DOT #1". The outputs of these gates are connected to the inputs of the 74181 ALU.
- DI (Data Input):** Connected to the inputs of the 74181 ALU.
- CLK (CP):** Clock input, connected to the clock input of the 74181 ALU.
- Power Supply:** A $220\ \mu\text{F}$ 35V capacitor is connected between COM and GND. A $0.01\ \mu\text{F}$ 50V capacitor is connected between VDD and GND.
- Output:** The output of the 74181 ALU is connected to the TM (Test Mode) input of the 74180 majority gates.

DI No.	DOT No.	STB No.	DOT No.
DI	448~1	STB 2	448~193
		STB 1	192~ 1

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●Supported speeds chart



●Electrical characteristic curves

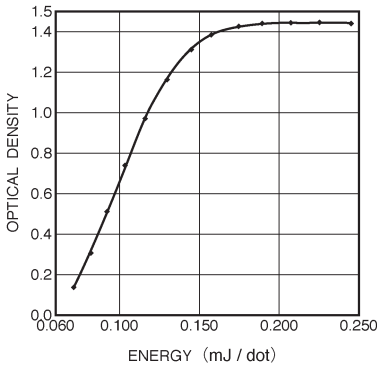


Fig. 3 Representative density curve

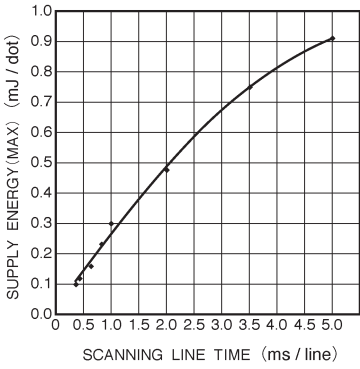


Fig. 4 Maximum energy curve

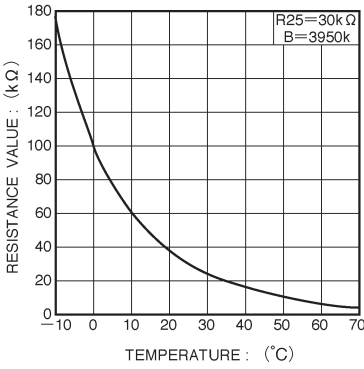


Fig. 5 Thermistor curve