Near Edge High Speed Thermal Printhead (12 dots/mm)

NE3005-MA10A

The NE3005-MA10A is a near edge thin film thermal printhead where the printing medium passes straight through. This printhead is equipped with a heat history control function, suited for high speed label printers.

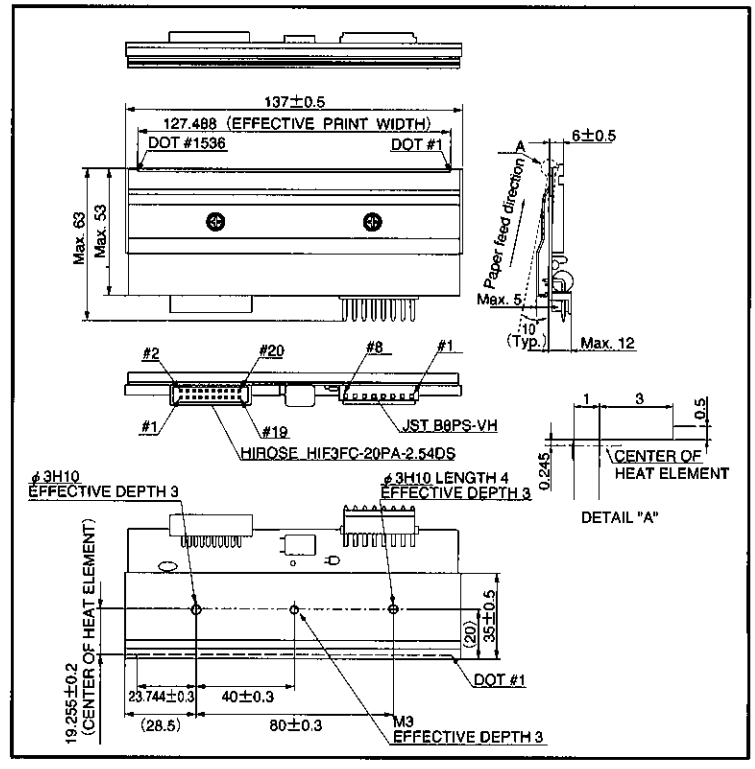
●Applications

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

●Features

1) High resolution of 12 dots/mm.
2) Inclined toward the printing surface to provide excellent printing quality even for cards and thick paper.
3) Prints directly on printing medium that cannot be bent.
4) Our heat history control circuit reduces the load on the printer to control heat history.
5) Using a hard conductive film as a protective film on the heating element offers excellent resistance to electrostatic damage.

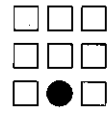
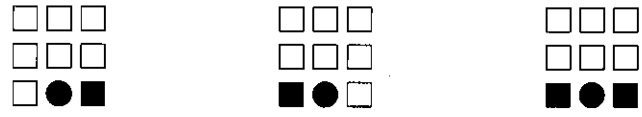
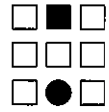
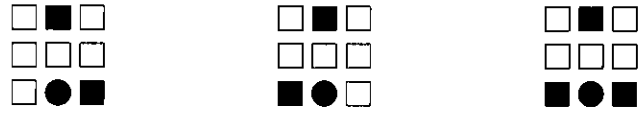
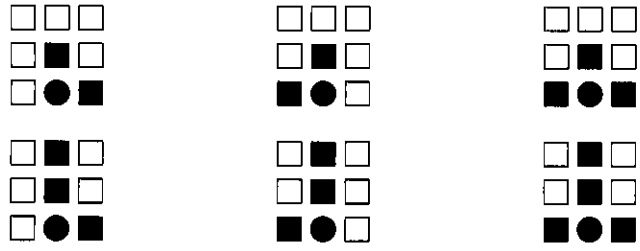
●External dimensions (Unit: mm)



●Characteristics

Parameter	Symbol	Typical						Unit
Effective printing width		127.5						mm
Dot pitch		0.083						mm
Total dot number		1536						dots
Average resistance value	Rave	1208						Ω
Applied voltage	V_H	24						V
Applied power	P_O	0.4						W/dot
Print cycle	SLT	0.62						ms
Applied energy	LEVEL	1	2	3	4	5	6	
	Eo	0.13	0.13	0.08	0.06	0.06	0.06	mJ/dot
Pulse width	Ton	0.32	0.32	0.20	0.15	0.15	0.15	ms
Maximum number of dots energized simultaneously		1536						dots
Maximum clock frequency		5						MHz
Maximum roller diameter		0~∞						mm
Running life/pulse life		500/1 billion						km/pulses
Operating temperature		60						℃

●Level map

	Print Pattern	On Time	SLT=0.62ms
Level 1		Ton a	0.32 ms
Level 2		Ton b	0.32 ms
Level 3		Ton c	0.2 ms
Level 4		Ton d	0.15 ms
Level 5		Ton e	0.15 ms
Level 6		Ton f	0.15 ms

□: Heated dot.
■: Non-heated dot.
●: Dot to be printed.

This table shows a simple example. In actuality, the history of the previous level and the level before of the adjacent dots are included.

●Pin configuration

HIROSE

No.	Circuit	No.	Circuit
1	GND	2	NC
3	NC	4	NC
5	Vdd	6	Vdd
7	INC	8	SET
9	E−OUT	10	OR−ON
11	CLK	12	DI
13	START	14	LOAD
15	RESET	16	DO
17	STB2	18	STB1
19	TM	20	TM

JST

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

Added functions

SET : This sets all data at "HIGH". (Usable for preheating)

OR-ON : Set this at "HIGH" when considering the adjoining of the previous columns; otherwise set this at "LOW".

E-OUT : This outputs "HIGH" when a data transmission error occurs inside the head.

INC : This supports the increment function from level 1 to level 6. One level is incremented for one pulse. (See Fig. 2)

RESET : This sets all data at "LOW". This clears data when printing is resumed after a pause. (See Fig. 2)

Note : Signals of SET, INC, START, and RESET detect the falling edge; the START signal transmits data to the driver IC at the falling edge and latches at the rising edge.

For two-part split printing, enter INC after 34 μ seconds of START7. (See Fig. 2)

●Timing chart

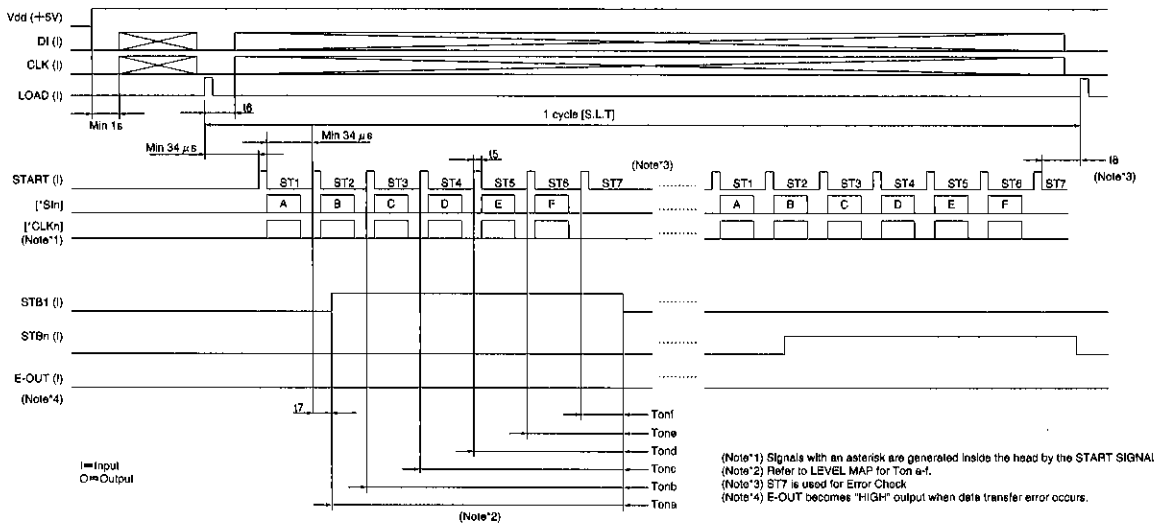


Fig.1

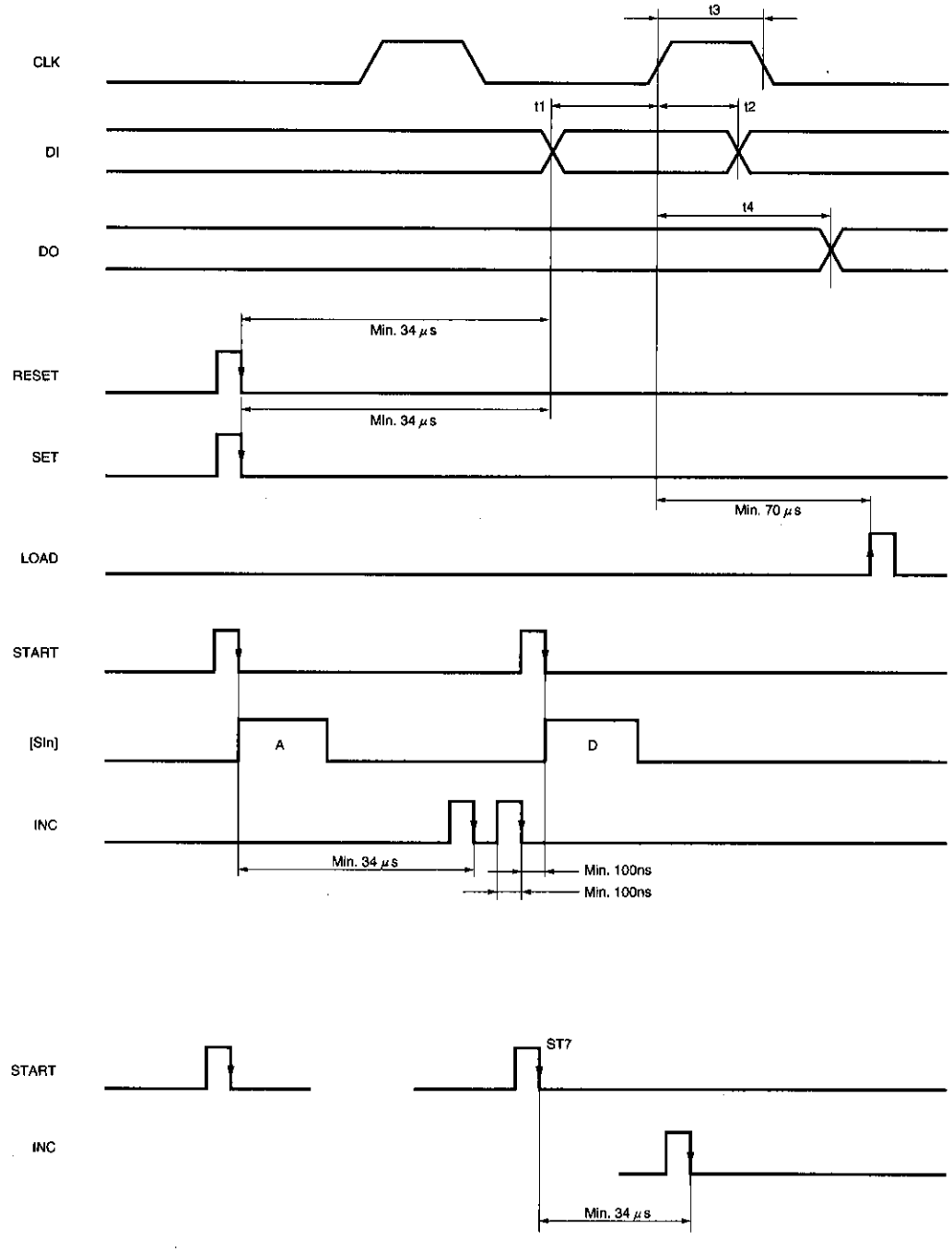

t3
CLK
t1
t2
DI
t4
DO
Min. 34 μs
RESET
Min. 34 μs
SET
Min. 70 μs
LOAD
START
[SIn]
A
D
INC
Min. 34 μs
Min. 100ns
Min. 100ns
START
ST7
INC
Min. 34 μs

Fig.2

●Equivalent circuit

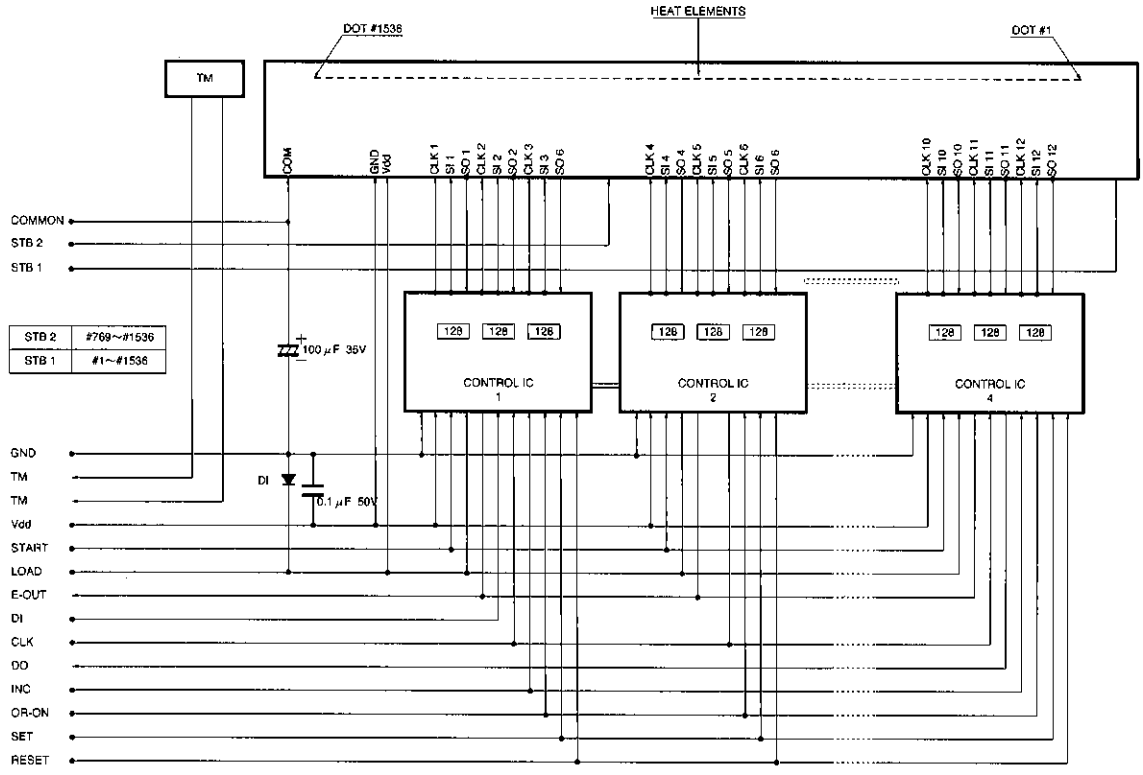


Fig. 3 Circuit diagram

●Data sheet

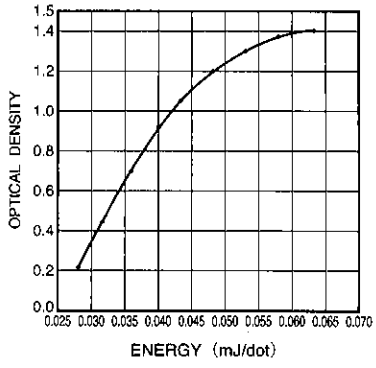


Fig. 4 Representative density curve

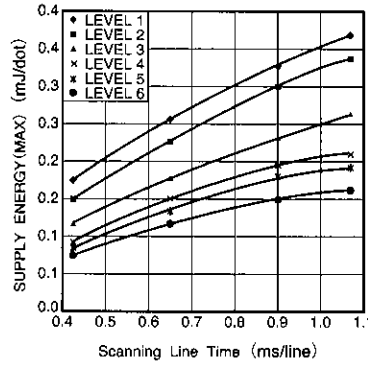


Fig. 5 Maximum energy curve

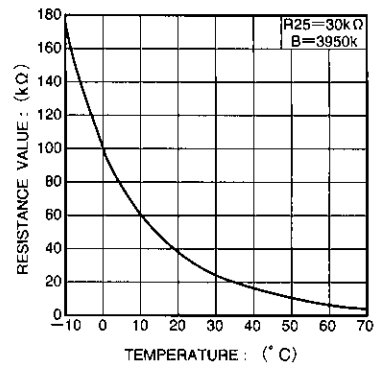


Fig. 6 Thermistor curve

Notes

- The contents described in this catalogue are correct as of March 1997.
- No unauthorized transmission or reproduction of this book, either in whole or in part, is permitted.
- The contents of this book are subject to change without notice. Always verify before use that the contents are the latest specifications. If, by any chance, a defect should arise in the equipment as a result of use without verification of the specifications, ROHM CO., LTD., can bear no responsibility whatsoever.
- Application circuit diagrams and circuit constants contained in this data book are shown as examples of standard use and operation. When designing for mass production, please pay careful attention to peripheral conditions.
- Any and all data, including, but not limited to application circuit diagrams, information, and various data, described in this catalogue are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO., LTD., disclaims any warranty that any use of such device shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes absolutely no liability in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices; other than for the buyer's right to use such devices itself, resell or otherwise dispose of the same; no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by ROHM CO., LTD., is granted to any such buyer.

The products listed in this catalogue are designed to be used with ordinary electronic equipment or devices (such as audio-visual equipment, office-automation equipment, communications devices, electrical appliances, and electronic toys). Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers, or other safety devices) please be sure to consult with our sales representatives in advance.

- Notes when exporting
  - It is essential to obtain export permission when exporting any of the above products when it falls under the category of strategic material (or labor) as determined by foreign exchange or foreign trade control laws.
  - Please be sure to consult with our sales representatives to ascertain whether any product is classified as a strategic material.