

Compact medium speed thick film thermal printhead (8 dots / mm)

KD2003-DF10A

Using its expertise in LSI technology, ROHM has developed new high density driver chips for use in the KD2003-DF10A. Capable of being employed for both thermal and thermal transfer printing, with a print speed of 250mm/s, the resulting print heads are the fastest in their class. This high-speed and high-density printing answers the needs of POS, ATM, KIOSK and ticket printing devices, which are increasingly being called upon to produce graphical output.

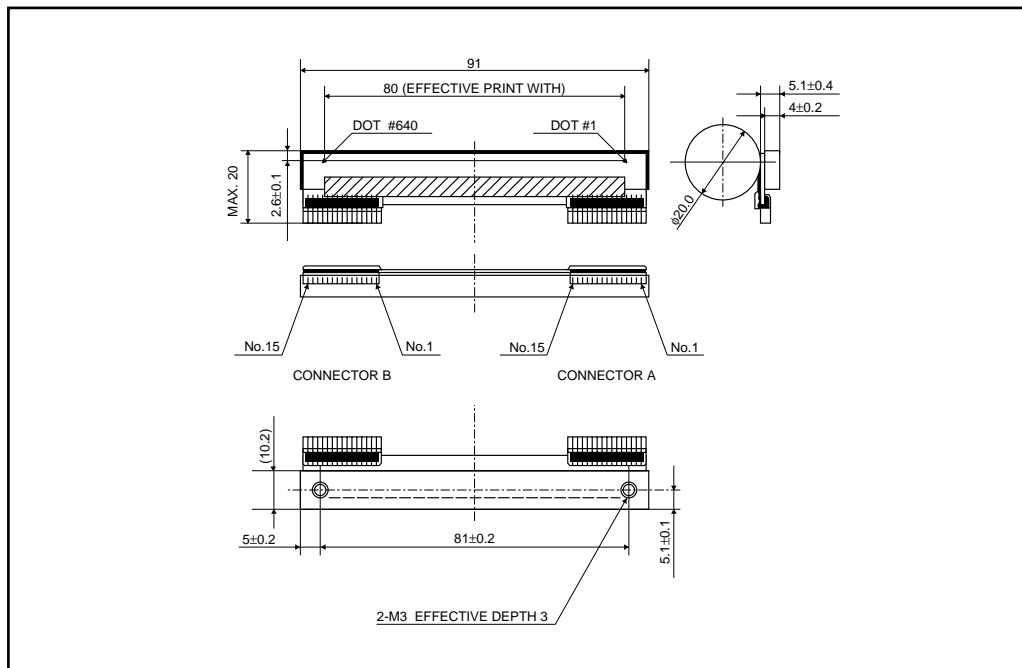
●Applications

POS printers
ATM printers
KIOSK printers
Ticket printers

●Features

- 1) The use of a special partial glaze and the latest heating element structure, along with new high-density driver chips that can accept big current, has allowed ROHM to achieve print speeds of 250mm/s with using thermal history control, the fastest in its class.
- 2) Standard printheads in the line up are capable of 203 or 300 dpi. They achieve the high resolution needed for graphics and other complex print patterns.
- 3) One rank resistance value of $650\Omega \pm 3\%$ eliminates the inconvenience of rank selection.
- 4) The required driving voltage of 3.15 to 5.25V allows wide range of power supply voltage setting. This also allows multiple choice of electronic components for printers.
- 5) 2-inch, 3-inch and 4-inch series are available.

●External dimensions (Unit : mm)



Printheads

●Equivalent circuit

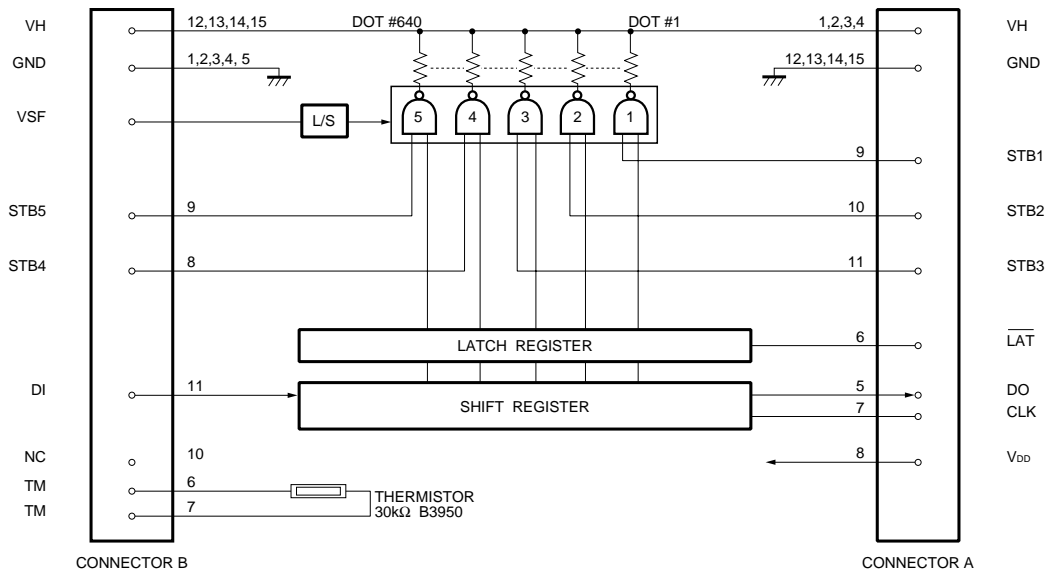


Fig.1

●Pin assignments

CONNECTOR A	
No.	Circuit
1	VH
2	VH
3	VH
4	VH
5	DO
6	$\overline{\text{LAT}}$
7	CLK
8	V _{DD}
9	STB1
10	STB2
11	STB3
12	GND
13	GND
14	GND
15	GND

CONNECTOR B	
No.	Circuit
1	GND
2	GND
3	GND
4	GND
5	GND
6	TM
7	TM
8	STB4
9	STB5
10	N.C.
11	DI
12	VSF
13	VH
14	VH
15	VH

Printheads

●Timing chart

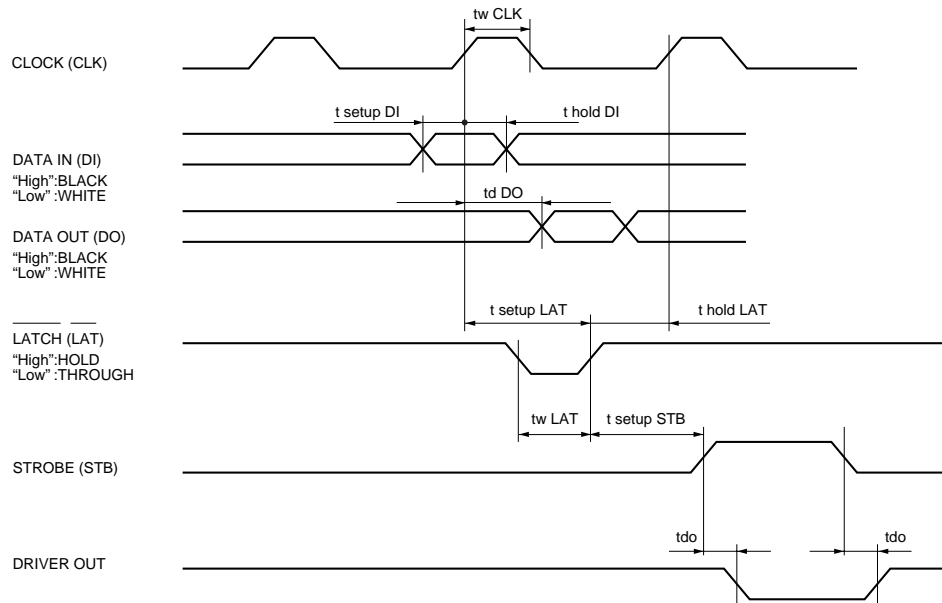


Fig.2

●Characteristics

Parameter	Symbol	Typical	Unit
Effective printing width	—	80	mm
Dot pitch	—	0.125	mm
Total dot number	—	640	dots
Average resistance value	Rave	650	Ω
Applied voltage	V _H	24	V
Applied power	P _O	0.78	W/dot
Print cycle	SLT	0.5	ms
Pulse width	T _{ON}	0.19	ms
Maximum number of dots energized simultaneously	—	384	dots
Maximum clock frequency	—	16	MHz
Maximum roller diameter	—	$\phi 20$	mm
Running life / pulse life	—	50/5 $\times 10^7$	km/pulses
Operating temperature	—	5 to 45	$^{\circ}\text{C}$

Printheads

●Electrical characteristic curves

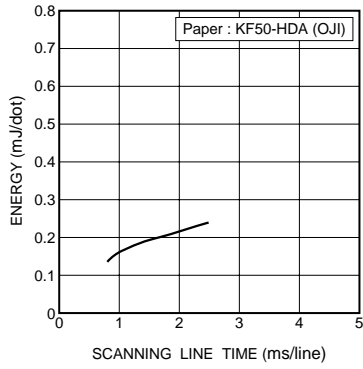


Fig.3 Adaptive speed chart

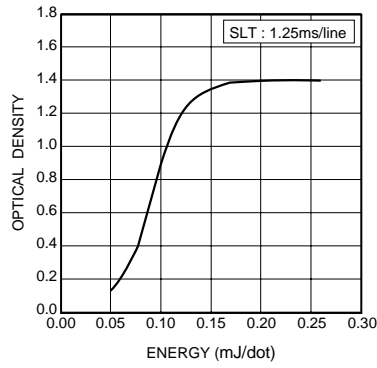


Fig.4 Representative density curve

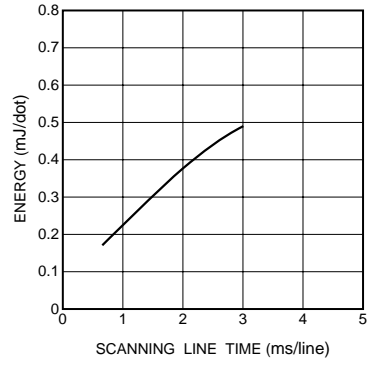


Fig.5 Maximum energy curve

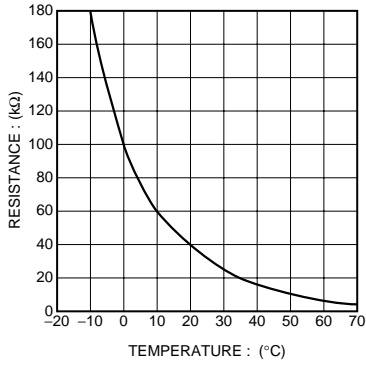


Fig.6 Thermistor curve

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