

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

## KD2003-DG12A

KD2003-DG12A built in new and high density driver IC developed by the cutting edge technologies realizes the highest speed in the same class (250mm/s) at both Thermal Transfer and Direct Thermal.

This Thermal Printhead is suitable for POS, ATM, KIOSK and TICKET industries which require High Speed / High Density and Graphic printing.

By the implementation of highly durable protective coat, it achieves 150km as the standard abrasion life.

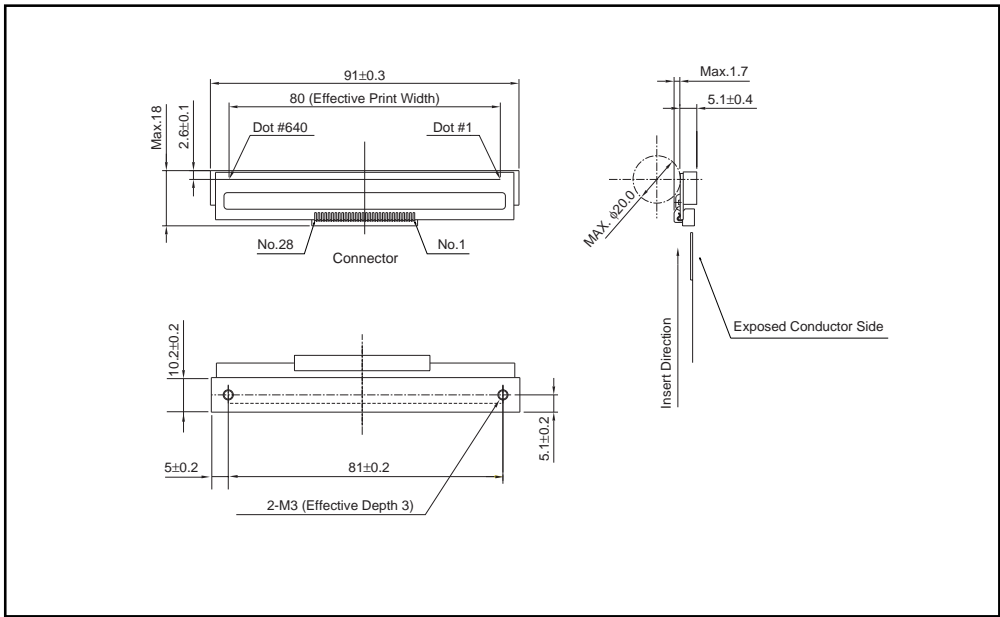
**●Applications**

- Label printers
- Ticket printers
- POS printers
- ATM printers
- KIOSK printers
- Terminal 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, the fastest in its class ( with historical control ).
- 2) One rank resistance value of  $650\Omega \pm 3\%$  eliminates the inconvenience of rank selection.
- 3) The required driving voltage of 3.13 to 5.25V allows wide range of power supply voltage setting. This also allows multiple choice of electronic components for printers.
- 4) With the standard abrasion life of 150km, long life is achieved against the largely abrasive thermal paper.

**●Dimensions (Unit : mm)**



Printheads

●Equivalent circuit

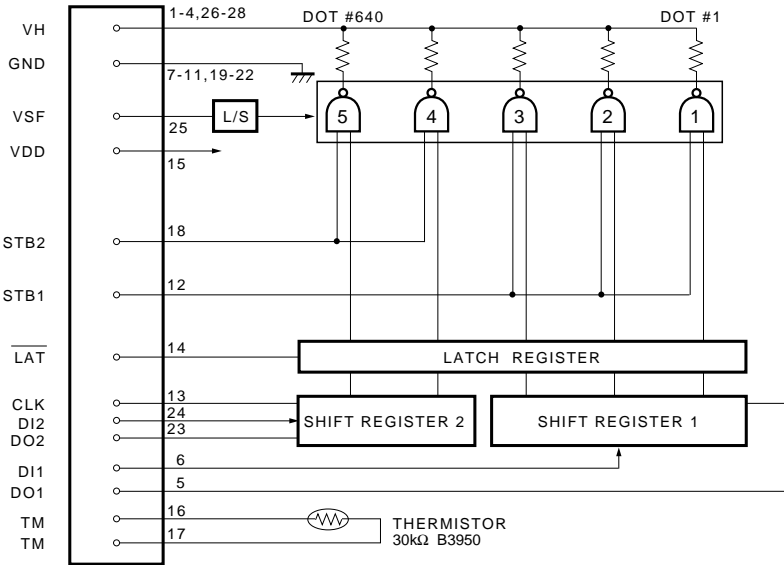


Fig.1

●Pin assignments

No.	Circuit	No.	Circuit
1	VH	15	V <sub>DD</sub>
2	VH	16	TM
3	VH	17	TM
4	VH	18	STB2
5	DO1	19	GND
6	DI1	20	GND
7	GND	21	GND
8	GND	22	GND
9	GND	23	DO2
10	GND	24	DI2
11	GND	25	VSF
12	STB1	26	VH
13	CLK	27	VH
14	LAT	28	VH

## Printheads

### ●Timing chart

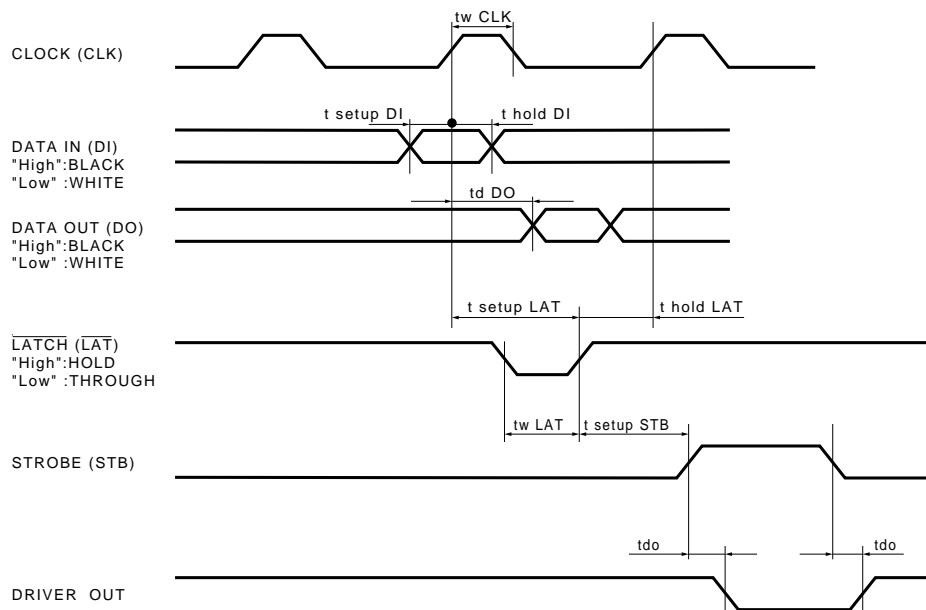


Fig.2

### ●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	$\Omega$
Applied voltage	$V_H$	24	V
Applied power	$P_O$	0.74	W/dot
Print cycle	SLT	0.5	ms
Pulse width	$T_{ON}$	0.2	ms
Maximum number of dots energized simultaneously	–	640	dots
Maximum clock frequency	–	16	MHz
Maximum roller diameter	–	$\phi 20.0$	mm
Running life / pulse life	–	$150/1 \times 10^8$	km/pulses
Operating temperature	–	5 to 45	$^{\circ}\text{C}$

Printheads

●Electrical characteristic curves

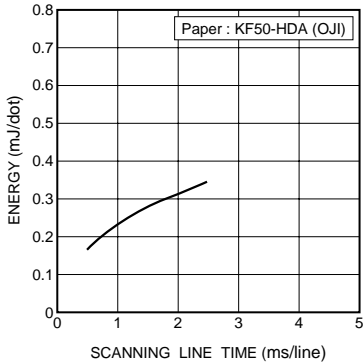


Fig.3 Adaptive speed chart

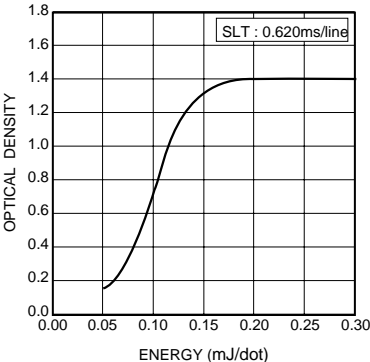


Fig.4 Representative density curve

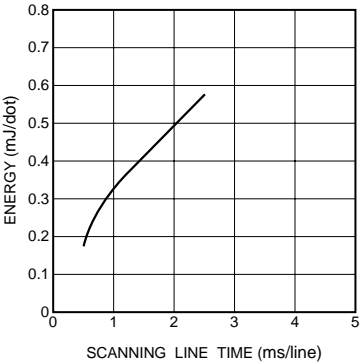


Fig.5 Maximum energy curve

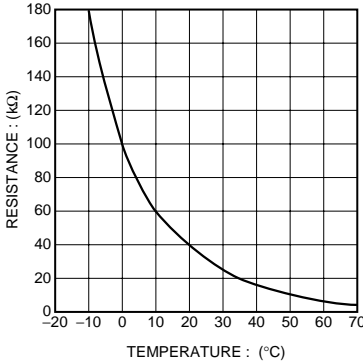


Fig.6 Thermistor curve

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