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

## KF2003-GF41A

Using its expertise in LSI technology, ROHM has developed new high density driver chips for use in the KF2003-GF41A. Capable of being employed for both thermal and thermal transfer printing, with a print speed of 200mm/s, the resulting printheads are the fastest in their class. The high-speed and high-density printing answers the needs of ATM, kiosk and ticket printing devices, which are increasingly being called upon to produce graphical output.

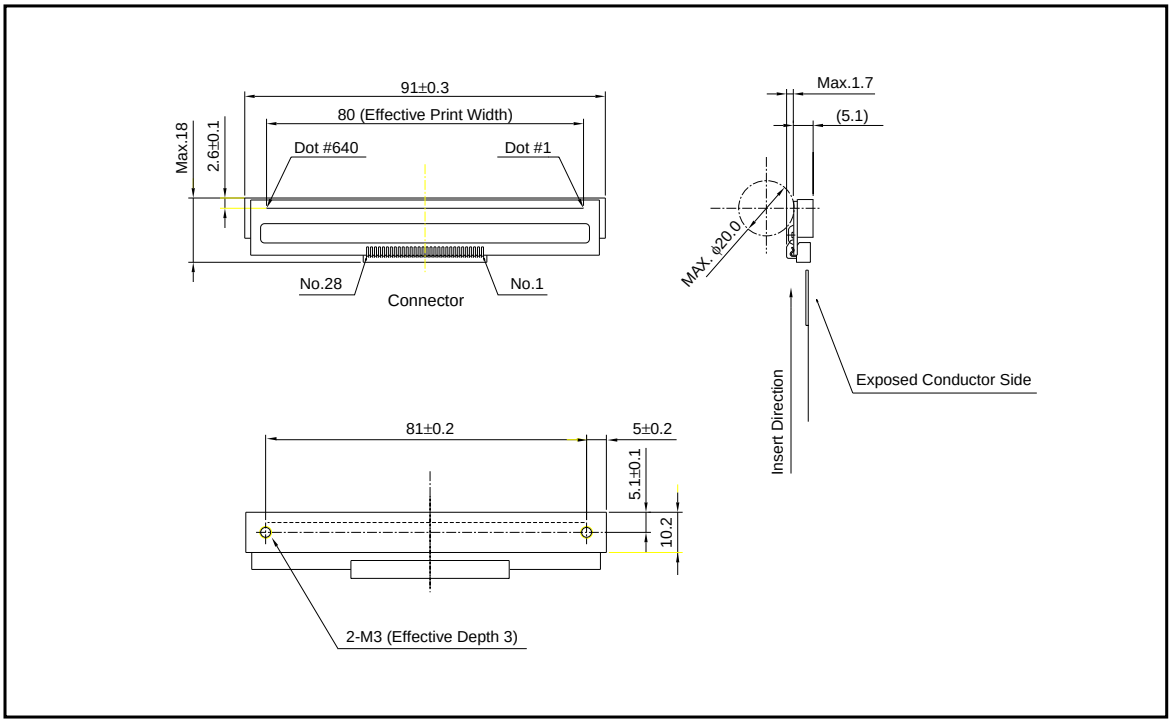
**●Applications**

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 200mm/s, the fastest in its class.
2) One rank resistance value of 650Ω ± 3% eliminates the inconvenience of rank selection.
3) 2-inch, 3-inch and 4-inch series are available.

**●External dimensions** (Units : mm)



●**Equivalent circuit**

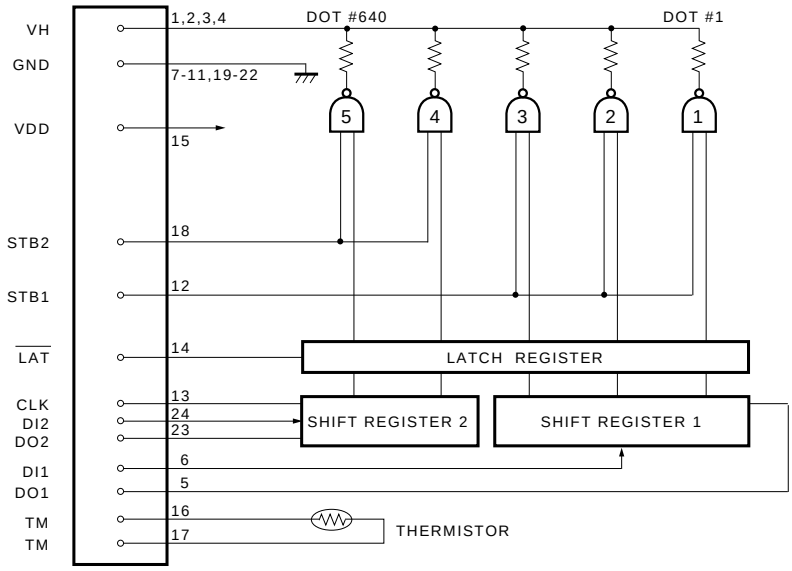



Fig.1

●**Pin assignments**

| No. | Circuit |
|---|---|
| 1 | VH |
| 2 | VH |
| 3 | VH |
| 4 | VH |
| 5 | DO1 |
| 6 | DI1 |
| 7 | GND |
| 8 | GND |
| 9 | GND |
| 10 | GND |
| 11 | GND |
| 12 | STB1 |
| 13 | CLK |
| 14 | $\overline{LAT}$ |

| No. | Circuit |
|---|---|
| 15 | $V_{DD}$ |
| 16 | TM |
| 17 | TM |
| 18 | STB2 |
| 19 | GND |
| 20 | GND |
| 21 | GND |
| 22 | GND |
| 23 | DO2 |
| 24 | DI2 |
| 25 | VH |
| 26 | VH |
| 27 | VH |
| 28 | VH |

●**Timing chart**

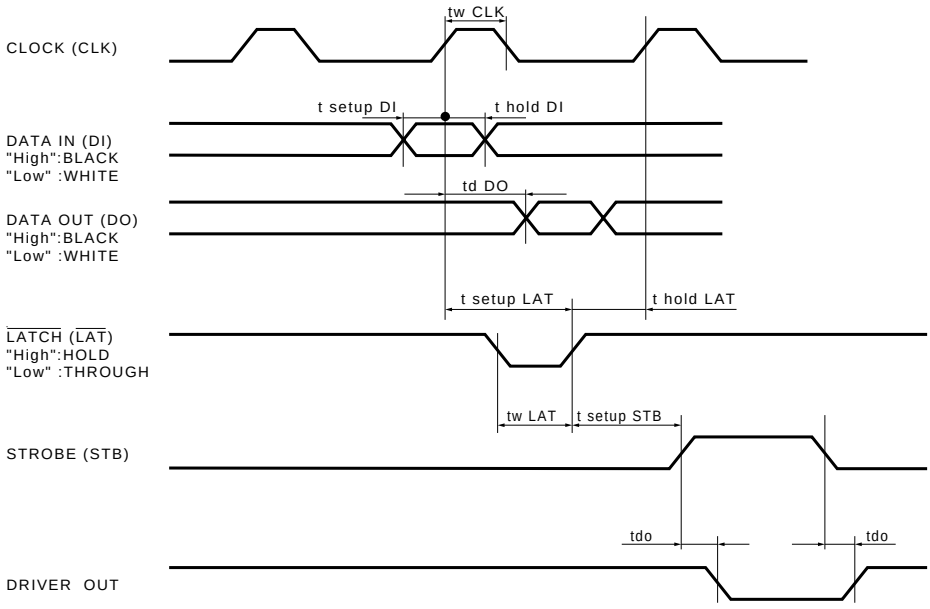



Fig.2

●**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 | $P_O$ | 0.76 | W/dot |
| Print cycle | SLT | 0.625 | ms |
| Pulse width | $T_{ON}$ | 0.234 | ms |
| Maximum number of dots energized simultaneously | – | 640 | dots |
| Maximum clock frequency | – | 8 | MHz |
| Maximum roller diameter | – | ϕ20.0 | mm |
| Running life / pulse life | – | $50/5\times10^7$ | km/pulses |
| Operating temperature | – | 5~45 | °C |

●**Electrical characteristic curves**

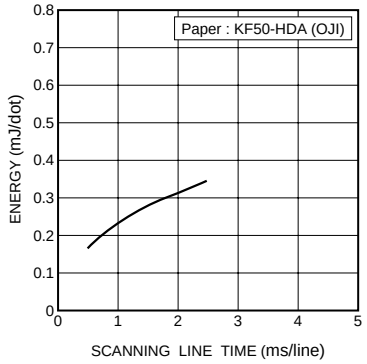



Fig.3 Adaptive speed chart

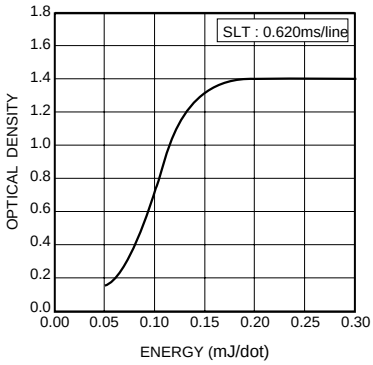



Fig.4 Representative density curve

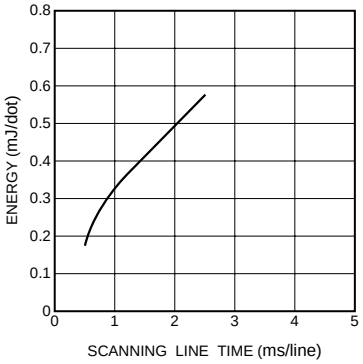



Fig.5 Maximum energy curve

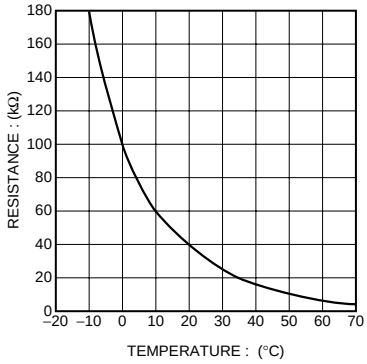



Fig.6 Thermistor curve

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