

Compact high speed thick film thermal printhead (12 dots / mm)

KD3002-DF10A

Using its expertise in LSI technology, ROHM has developed new high density driver chips for use in the KD3002-DF10A. Capable of being employed for both thermal and thermal transfer printing, with a print speed of 200mm/s, the resulting print heads 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.

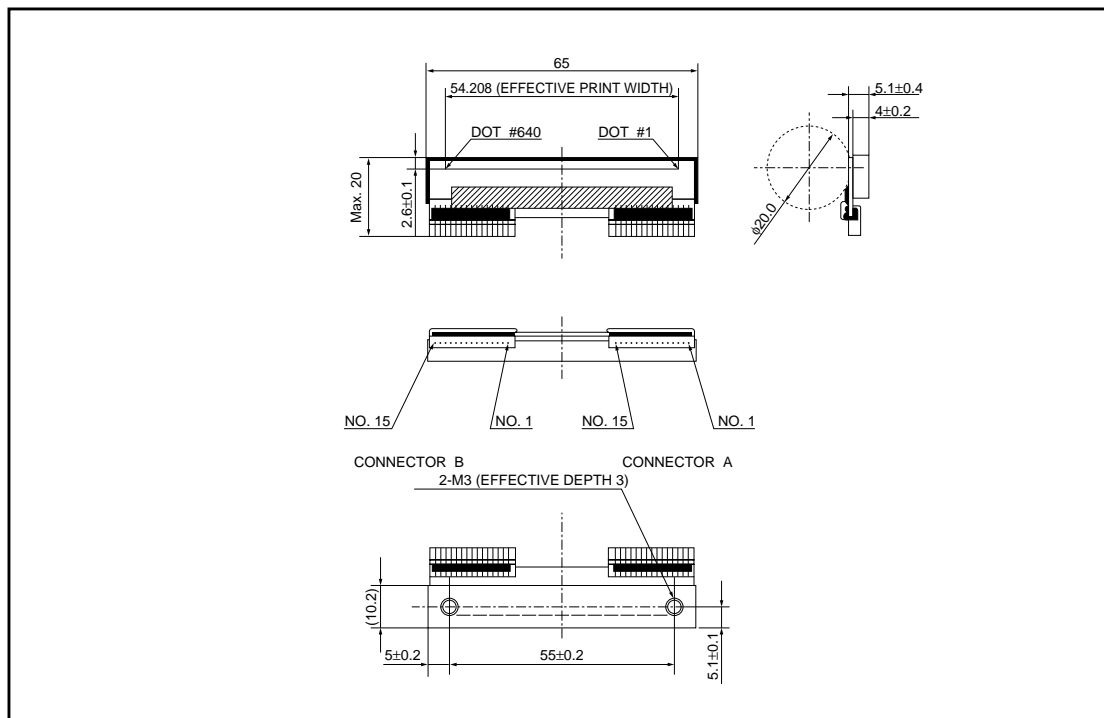
●Applications

Label printers
Ticket printers
Terminal printers

●Features

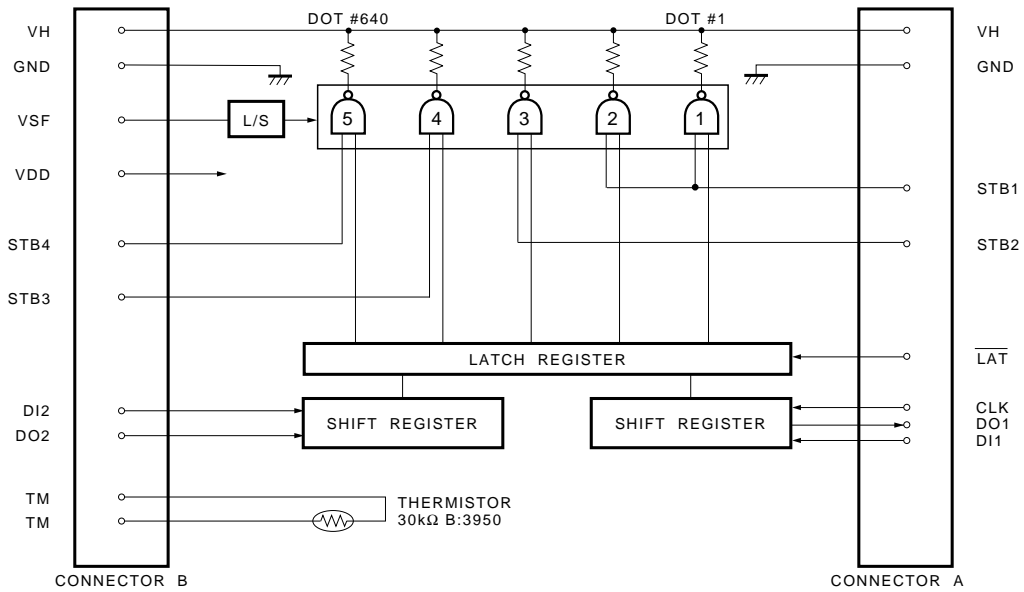
- 1) The use of a special partial glaze and the latest heating element structure, along with new high-density driver chips that can accept big current, has allowed ROHM to achieve print speeds of 200mm/s with using thermal history control, the fastest in its class.
- 2) One rank resistance value of $1000\Omega \pm 3\%$ eliminates the inconvenience of rank selection.
- 3) 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.
- 4) 2-inch, 3-inch, 4-inch and 8-inch series are available.

●External dimensions (Unit : mm)



Printheads

●Equivalent circuit



| STB No. | Dot No. | dots / STB |
|---------|-----------|------------|
| 1 | 1 ~ 256 | 256 |
| 2 | 257 ~ 384 | 128 |
| 3 | 385 ~ 512 | 128 |
| 4 | 513 ~ 640 | 128 |

| DI No. | Dot No. | dots / STB |
|--------|-----------|------------|
| 1 | 1 ~ 384 | 384 |
| 2 | 385 ~ 640 | 256 |

Fig.1

Printheads

●Pin assignments

| CONNECTOR A | |
|-------------|---------|
| No. | Circuit |
| 1 | VH |
| 2 | VH |
| 3 | VH |
| 4 | VH |
| 5 | DI1 |
| 6 | DO1 |
| 7 | LAT |
| 8 | CLK |
| 9 | STB1 |
| 10 | STB2 |
| 11 | GND |
| 12 | GND |
| 13 | GND |
| 14 | GND |
| 15 | GND |

| CONNECTOR B | |
|-------------|-----------------|
| No. | Circuit |
| 1 | GND |
| 2 | GND |
| 3 | GND |
| 4 | GND |
| 5 | STB3 |
| 6 | STB4 |
| 7 | V _{DD} |
| 8 | TM |
| 9 | TM |
| 10 | DO2 |
| 11 | DI2 |
| 12 | VSF |
| 13 | VH |
| 14 | VH |
| 15 | VH |

●Timing chart

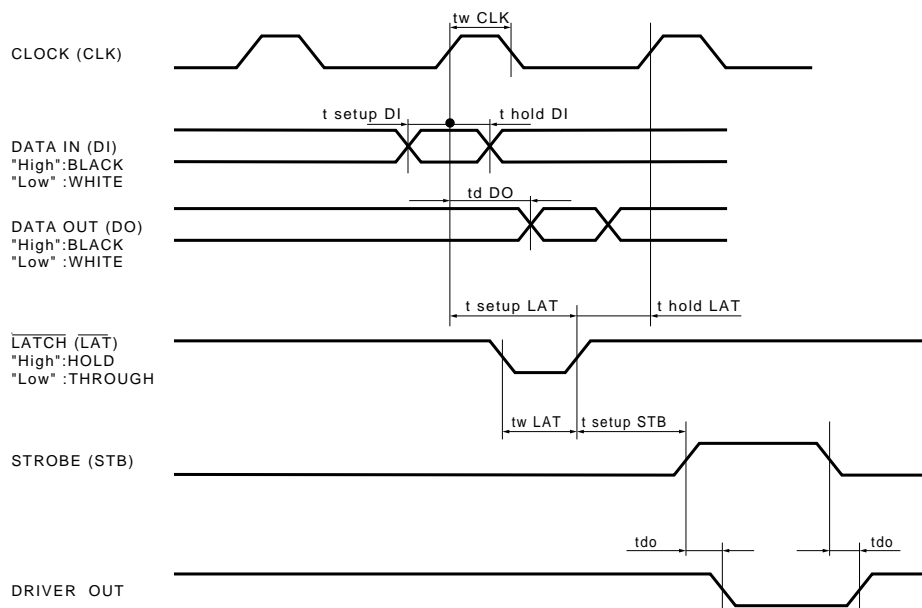


Fig.2

Printheads

●Characteristics

| Parameter | Symbol | Typical | Unit |
|---|-----------------|----------------------|-----------|
| Effective printing width | – | 54.208 | mm |
| Dot pitch | – | 0.0847 | mm |
| Total dot number | – | 640 | dots |
| Average resistance value | Rave | 1000 | Ω |
| Applied voltage | V _H | 24 | V |
| Applied power | P _O | 0.53 | W/dot |
| Print cycle | SLT | 0.82 | ms |
| Pulse width | T _{ON} | 0.25 | ms |
| Maximum number of dots energized simultaneously | – | 640 | dots |
| Maximum clock frequency | – | 16 | MHz |
| Maximum roller diameter | – | φ20.0 | mm |
| Running life / pulse life | – | 50/5×10 ⁷ | km/pulses |
| Operating temperature | – | 5 to 45 | °C |

●Electrical characteristic curves

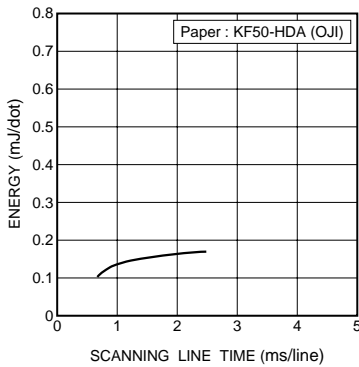


Fig.3 Adaptive speed chart

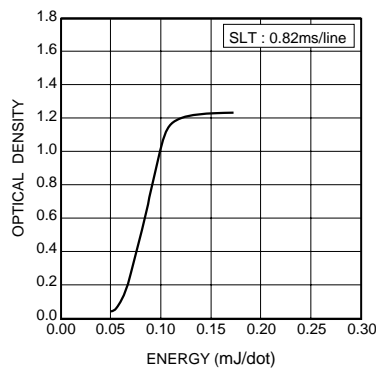


Fig.4 Representative density curve

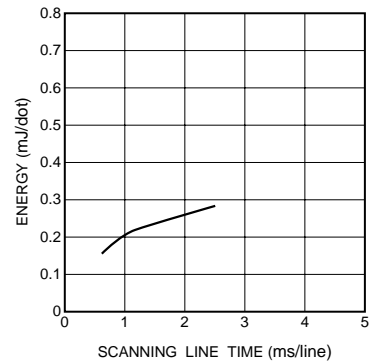


Fig.5 Maximum energy curve

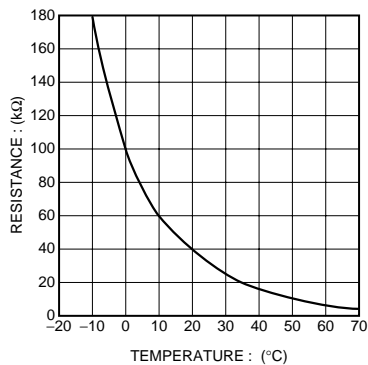


Fig.6 Thermistor curve

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