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

KD3003-DF10A

Using its expertise in LSI technology, ROHM has developed new high density driver chips for use in the KD3003-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.

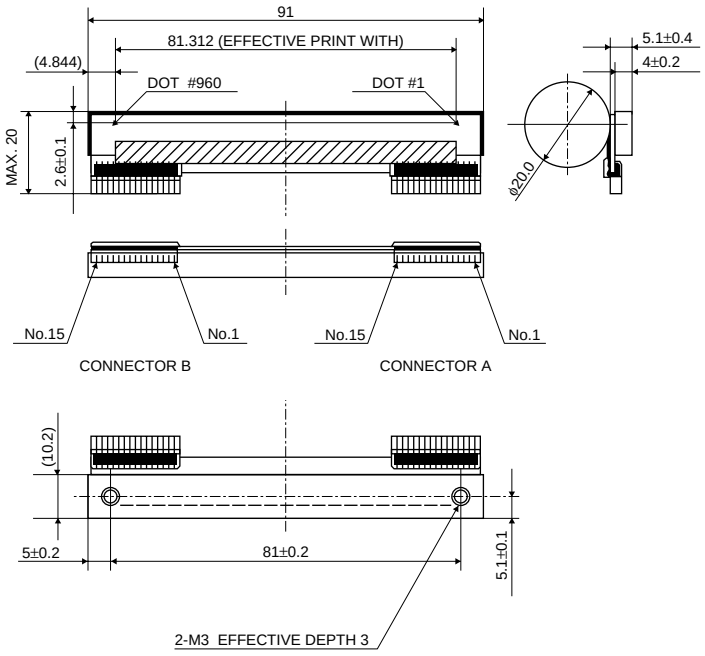
●Applications

Label printers
Ticket printers
Terminal printers

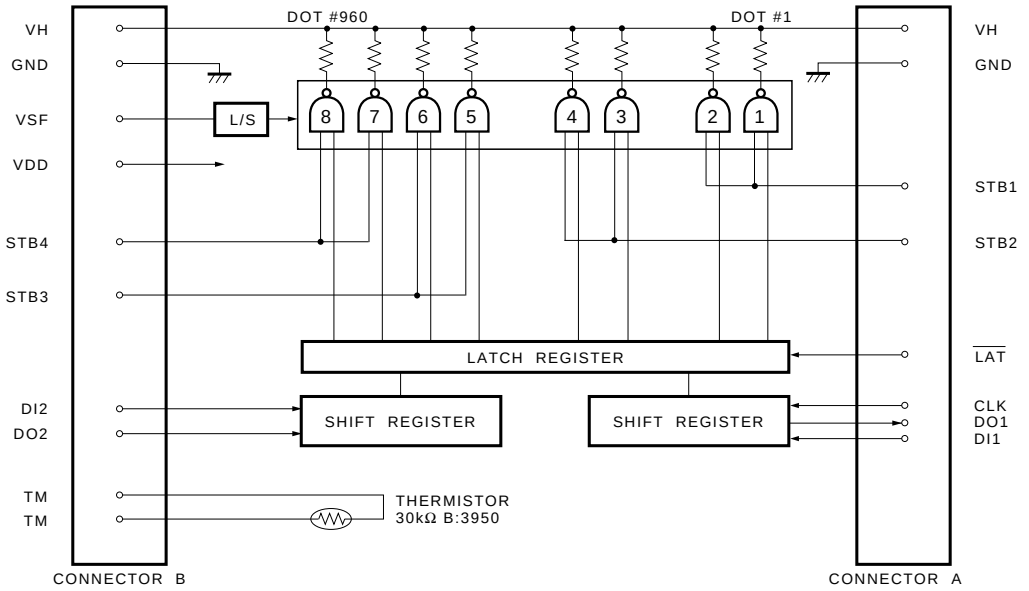
●Features

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 1000Ω ± 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.

●Dimensions (Unit : mm)



●**Equivalent circuit**



STB No.	Dot No.	dots / STB
1	1 ~ 192	192
2	193 ~ 448	256
3	449 ~ 704	256
4	705 ~ 960	256

DI No.	Dot No.	dots / STB
1	1 ~ 448	448
2	449 ~ 960	512

Fig.1

●Pin assignments

CONNECTOR A

No.	Circuit
1	VH
2	VH
3	VH
4	VH
5	DI1
6	DO1
7	$\overline{LAT}$
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

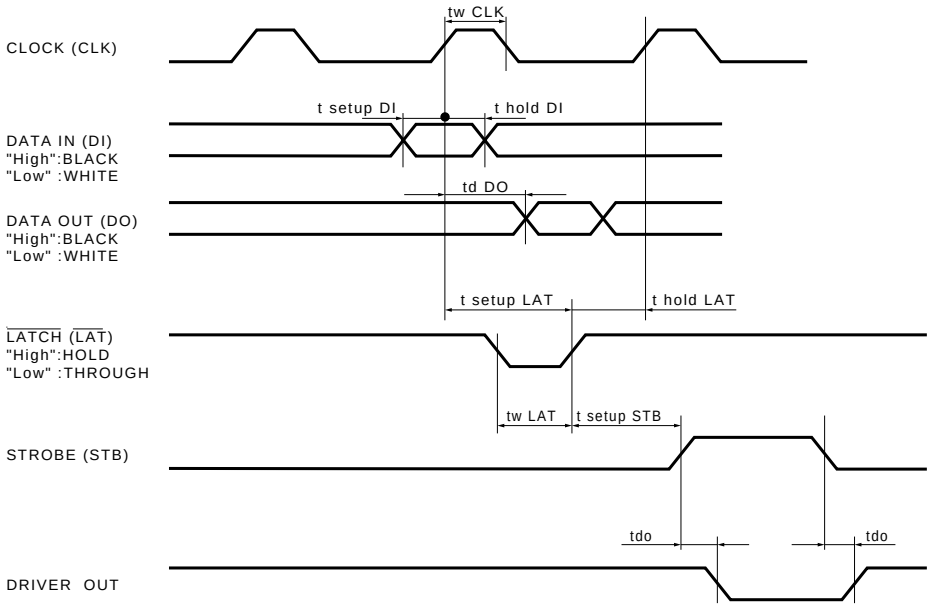


Fig.2

●Characteristics

Parameter	Symbol	Typical	Unit
Effective printing width	–	81.312	mm
Dot pitch	–	0.0847	mm
Total dot number	–	960	dots
Average resistance value	Rave	1000	Ω
Applied voltage	V_H	24	V
Applied power	P_O	0.51	W/dot
Print cycle	SLT	0.82	ms
Pulse width	T_{ON}	0.26	ms
Maximum number of dots energized simultaneously	–	512	dots
Maximum clock frequency	–	16	MHz
Maximum roller diameter	–	ϕ18.0	mm
Running life / pulse life	–	$50/5\times10^7$	km/pulses
Operating temperature	–	5 to 45	°C

●Electrical characteristic curves

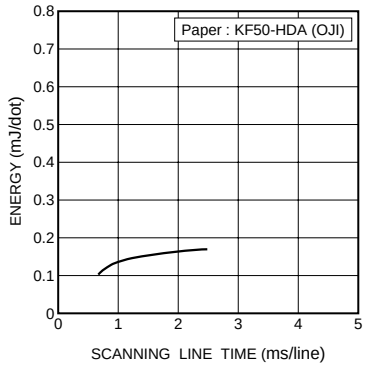


Fig.3 Adaptive speed chart

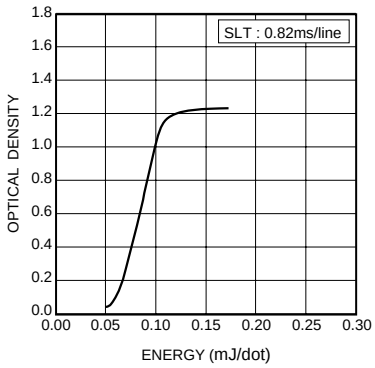


Fig.4 Representative density curve

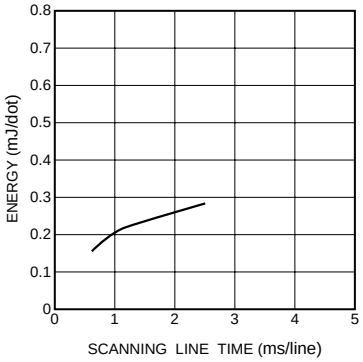


Fig.5 Maximum energy curve

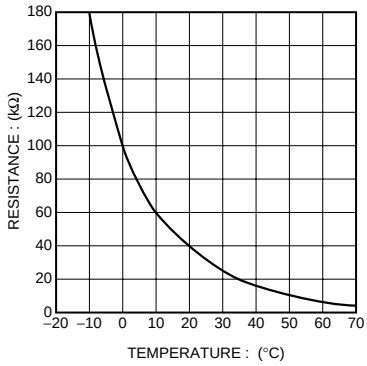


Fig.6 Thermistor curve

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