

# Compact low voltage thick film thermal printhead (8dots / mm)

## KF2002-GP10A

A world first, ROHM offers the KF2002-GP10A of thermal printheads that allow operation using a single standard lithium ion battery: required voltage has been reduced to just 2.7V. Compact and lightweight they are ideal printheads for handheld printers and PDAs (personal digital assistants).

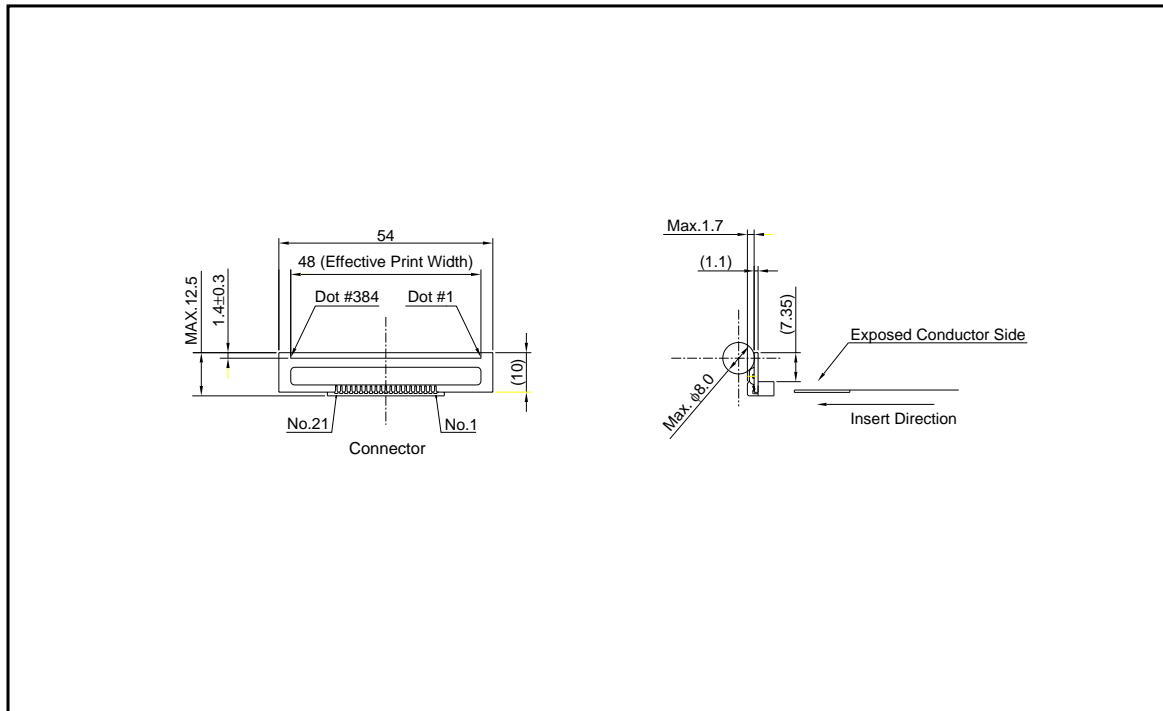
### ●Applications

Mobile printers  
FET-POS printers  
Hand-held printers  
Debit printers

### ●Features

- 1) Using advanced LSI technology, ROHM has developed a dedicated low voltage driver chip. Compared with previous products, power consumption has been reduced by more than 30%. Because the print head circuits draw just 2.7 volts, the printer can be driven using a single lithium ion battery.
- 2) One rank resistance value of  $123\Omega \pm 4\%$  eliminates the inconvenience of rank selection.
- 3) The GP10 series has a resistance value of  $123\Omega$  and can be used in devices designed to operate with a single 3V lithium ion battery.

### ●External dimensions (Units : mm)



Printheads

●Equivalent circuit

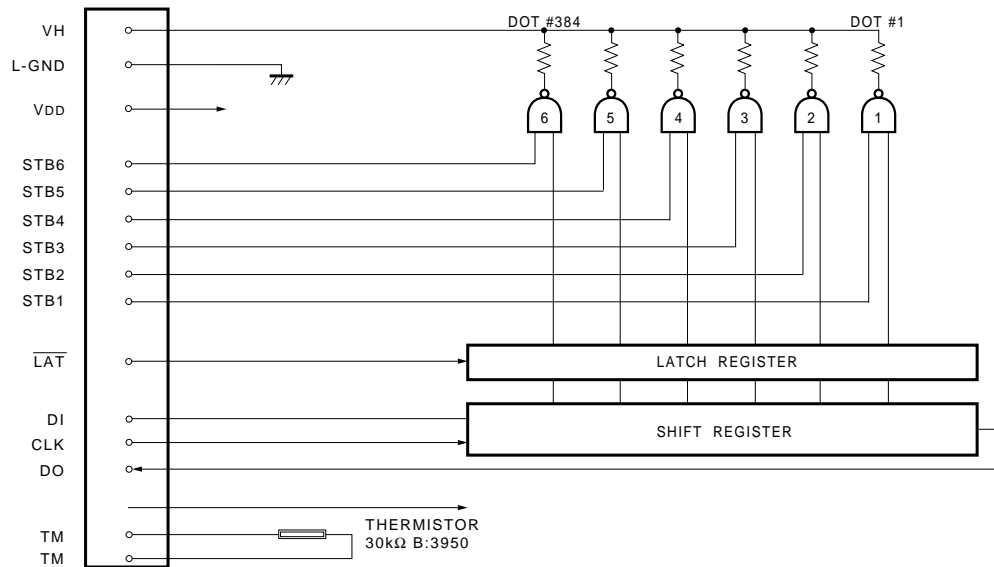


Fig.1

●Pin assignments

No.	Circuit	No.	Circuit
1	VH	12	V <sub>DD</sub>
2	VH	13	STB4
3	DO	14	STB5
4	$\overline{\text{LAT}}$	15	STB6
5	GND	16	GND
6	GND	17	GND
7	STB1	18	CLK
8	STB2	19	DI
9	STB3	20	VH
10	TM	21	VH
11	TM		

Note) The GND terminal 5 and 6 are not connected with the GND terminal 16 and 17.  
 These terminals shall be connected each other at the closest point to the printhead.

## Printheads

### ●Timing chart

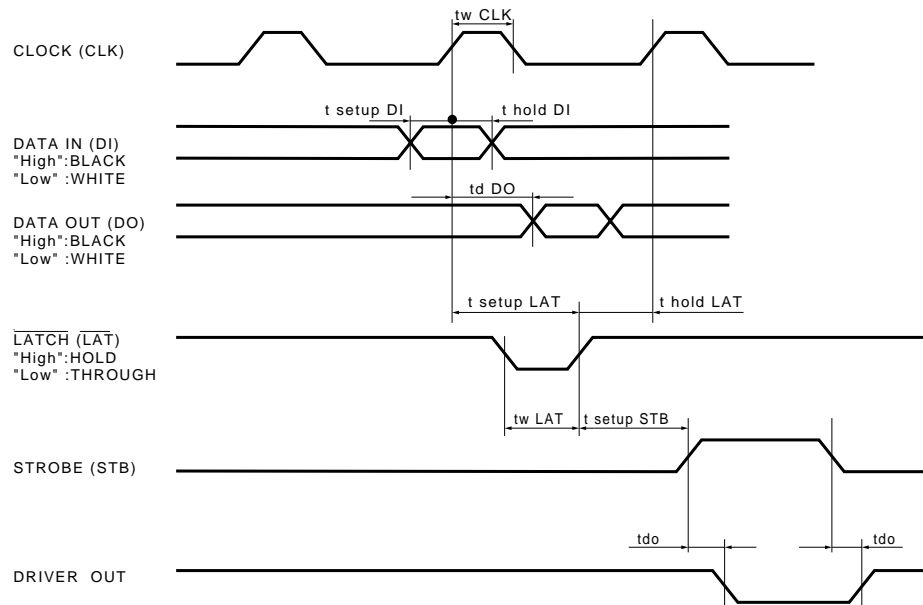


Fig.2

### ●Characteristics

Parameter	Symbol	Typical	Unit
Effective printing width	—	48	mm
Dot pitch	—	0.125	mm
Total dot number	—	384	dots
Average resistance value	Rave	123	$\Omega$
Applied voltage	V <sub>H</sub>	3.6	V
Applied power	P <sub>o</sub>	0.07	W/dot
Print cycle	SLT	2.5	ms
Pulse width	T <sub>ON</sub>	2.01	ms
Maximum number of dots energized simultaneously	—	64	dots
Maximum clock frequency	—	8	MHz
Maximum roller diameter	—	$\phi 8.0$	mm
Running life / pulse life	—	50/1 $\times 10^6$	km/pulses
Operating temperature	—	0-50	$^{\circ}\text{C}$

Printheads

●Electrical characteristic curves

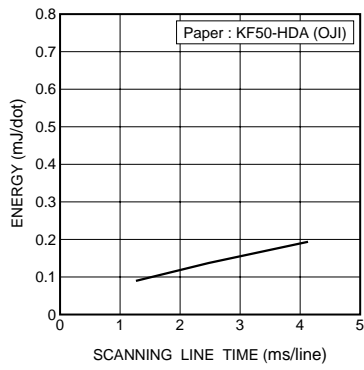


Fig.3 Adaptive speed chart

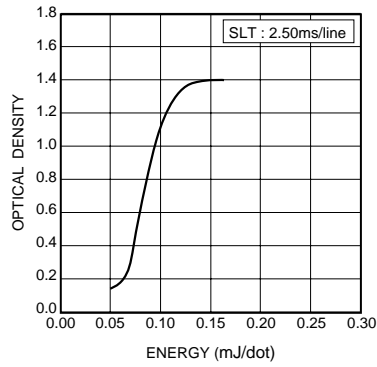


Fig.4 Representative density curve

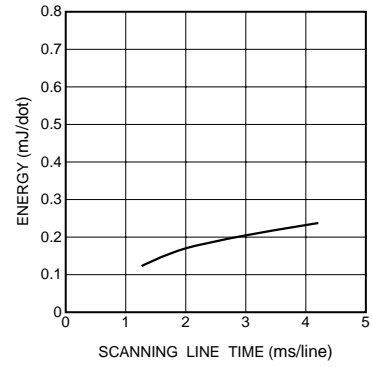


Fig.5 Maximum energy curve

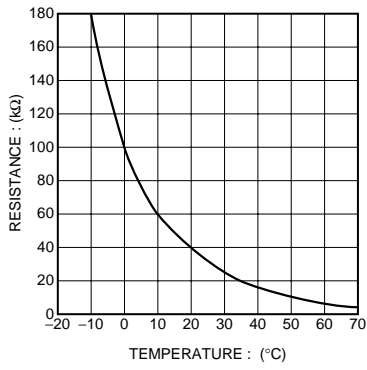


Fig.6 Thermistor curve