

# BATTERY DRIVE, FTP-608 Series

## 2" HIGH SPEED THERMAL PRINTER WITH CUTTER

### FTP628 MCL383, Easy Loading Method (ELM)

#### ■ OVERVIEW

The easy loading FTP-608 MCL Series is ultra compact high speed, battery driven thermal printer, printing on 2-inch wide paper (58mm) where platens are removable. Our original platen removal mechanism improved paper loading and maintenance.

The FTP-608 MCL series can be used for a variety of applications, such as portable terminals, POS, ticket issuing terminals, label printers, banking terminals, and measurement and medical equipment.

#### ■ HIGHLIGHTS

- **Easy loading type**  
Our unique platen removal mechanism improved paper loading and maintenance. Easy to remove paper jam.
- **Ultra compact**  
Height 33.0 mm, width 87.6 mm, depth 66.3 mm for the 2 inch model.
- **Multi-Function Diecast Frame**  
Functions as heat sink for motor and high antistatic resistance to ESD, and high shock and vibration resistance.
- **High speed printing**  
It can print at 80 mm/s (640 dotlines/s) maximum by using Fujitsu's unique head drive control.
- **High resolution printing**  
8 dots/mm of resolution printing is possible.



NOT FOR NEW DESIGN

## ■ PART NUMBERS

Item		Part Number
Printer mechanism		FTP-628MCL383#01, full cut FTP-628MCL383#02, partial cut
LSI for driving		TBA
Interface Board	Parallel	TBA
	Serial	TBA

## ■ SPECIFICATIONS

Item	Specifications
Part number	FTP-628MCL383#01 / #02
Printing method	Thermal-line dot method
Dot structure	384 dots/line
Dot pitch (Horizontal)	0.125 mm (8 dots/mm)—Dot density
Dot pitch (Vertical)	0.125 mm (8 dots/mm)—Line feed pitch
Effective printing area	48 mm
Number of columns	ANK 32 columns/line (maximum 12x 24 dot font)
Paper width	58 mm <sup>±0.5</sup>
Paper thickness	60 to 100 μ m (some paper in this range may not be used because of paper characteristics)
Printing Speed	Maximum 80mm/sec. (640 dot lines/sec.)
Character types	Alphanumeric, katakana: 159 types International and special characters: 195 types JIS Kanji level 1, level 2, non-Kanji (supported only when Kanji CG is mounted): about 6800 types
Character, dimensions (H×W), number of columns ANK, Kanji	12 × 24 dots, (1.5 × 3.0mm), 32 columns: ANK 24 × 24 dots, (3.0 × 3.0mm), 16 columns:  8 × 16 dots, (1.0 × 2.0 mm), 48 columns: ANK 16 × 16 dots, (2.0 × 2.0 mm), 24 columns: ANK, Kanji

## ■ SPECIFICATIONS

Item		Specification
		FTP-638MCL383#01/ #02
Interface		Conforms to RS232C / Centronics
Operating Voltage	For print head	4.2 VDC to 8.5 V, peak current 1.1A (2 inch), 2.4A (3 inch) Printing ratio: 12.5%, printing speed 50mm/sec.
	For motor	4.2 VDC to 8.5 V, 1 A maximum
	For logic	5 VDC $\pm$ 5%, 0.5 A maximum
	For Cutter	5 VDC $\pm$ 5% 3 A maximum
External dimensions		87.6 x 66.3.0 x 33 mm (WxDxH)
Weight		Approximately 240g
Head life		Pulse resistance: 100 million pulses/dot (under our standard conditions). Abrasion resistance: paper traveling distance 50km (print ratio: 25% or less)
Cutter life		500,000 cuts
Operating environment	Operating temperature	+5° C to +40° C (printing density assurance range, operation is possible at 0° C to +50° C)
	Operating humidity	20 to 85% RH (no condensation)
	Storage temperature	-40° C to +70° C (paper not included)
	Storage humidity	5 to 95% RH (no condensation)
Detection function	Head temperature detection	Detected by thermistor
	Paper out/mark detection	Detected by photo-interrupter
Recommended thermal sensitive paper		High sensitive paper: TF50KS-E4 (Nippon Paper)
		Standard paper: TK50KS-E (Nippon Paper) PD150R (Oji Paper) FTP-020P0107 (58mm) FTP-030P0107 (80mm)
		Medium life storage paper: TK60KS-F1 (Nippon Paper) FTP-020P0102 (58mm) FTP-030P0102 (80mm) PD170R (Oji Paper) AFP220VBB-1 (Mitsubishi Paper)
		Long life storage paper: PD160R-N (Oji Paper) AFP-235 (Mitsubishi Paper) TP50KJ-R (Nippon Paper) HA112AA (Nippon Paper)

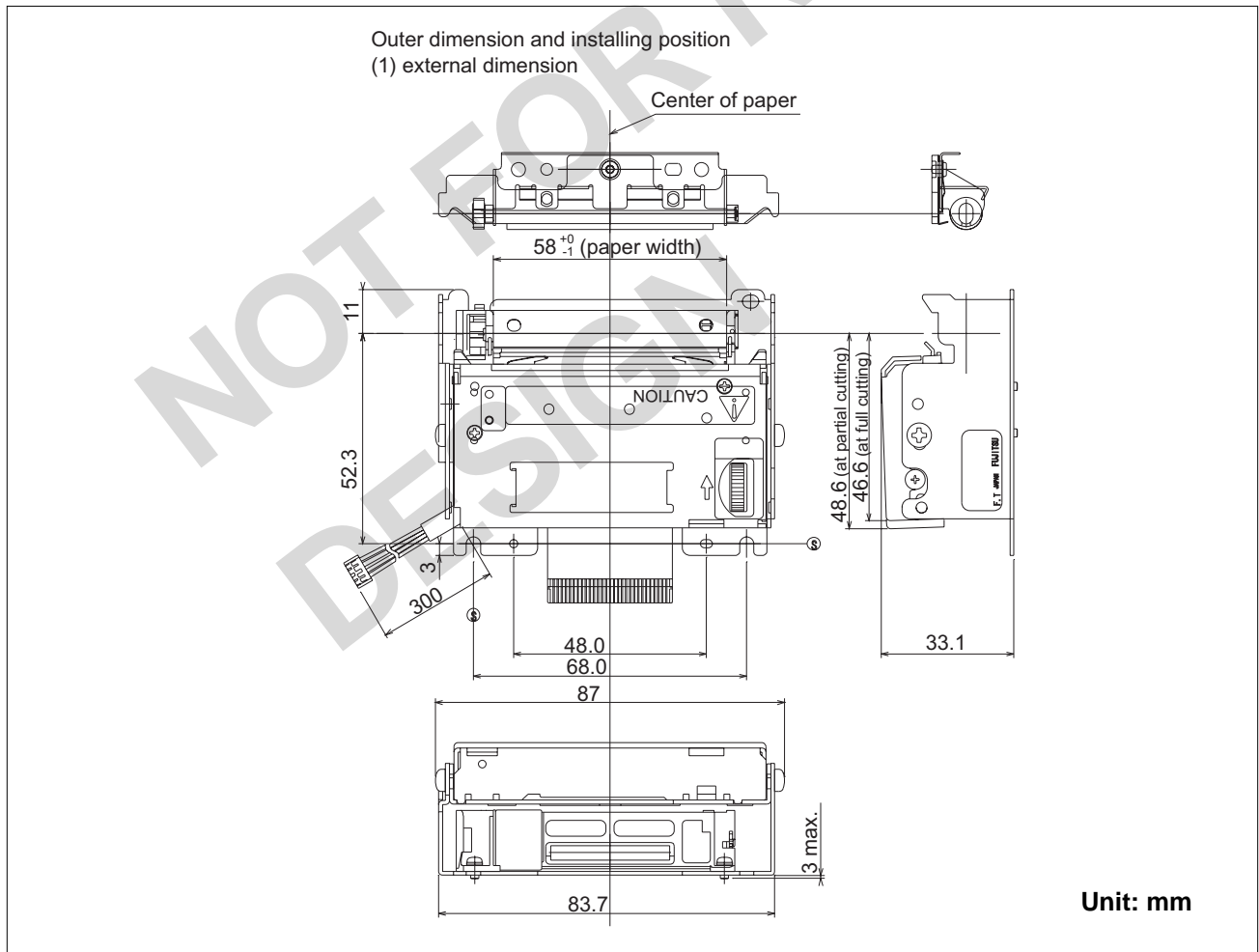
\*+5°C to +40°C printing density assurance rance (-25 to 70°C capability)

## FUNCTION

Item	Item
1. Test print function	8. Cutter trouble detect
2. Paper out detection	9. Motor power saving function
3. Paper near end detection	10. Mark detection function
4. Platen open detect	11. MCU operation abnormality detection
5. Thermal head temperature abnormality detection	12. Power ON/OFF sequence protection
6. Blow-out fuse detection	13. Motor over-current protection
7. Head voltage abnormality detection	14. Hardware timer

## DIMENSIONS

### Printer mechanism



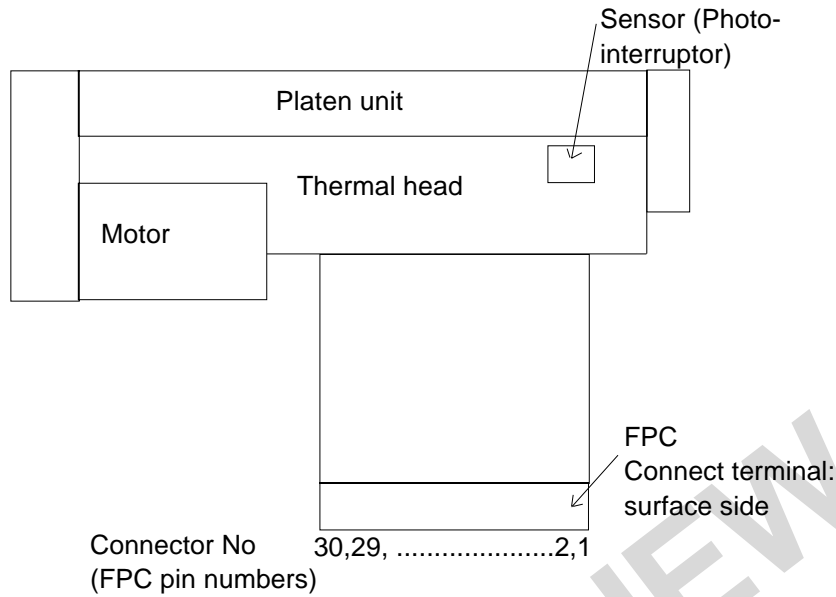
## ■ PRINTER CONNECTOR (FLEXIBLE PT BOARD) PIN ARRAYS

### FTP-628 MCL383

Thermal head, control circuit side connector: 52610-3090 Molex or equivalent product

No	Signal	I/O	Contents
1	PHK	—	Cathode for photo interruptor
2	VSEN	I	paper sensor power
3	PHE	O	Emittor for photo interruptor
4	SW1	I	Platen release switch
5	SW2	I	Platen release switch
6	VH	I	Head drive power
7	VH	I	
8	DIN	I	Data in
9	CLK	I	Synchronous clock for communication
10	GND	—	Ground power supply for thermal head
11	GND	—	
12	STB6	I	Thermal head energizing control signal
13	STB5	I	
14	STB4	I	
15	VDD	I	Logic power
16	TH	O	Thermally sensitive resistor input termnial 1
17	TH	O	Thermally sensitive resistor input termnial 2
18	STB3	I	Thermal head energizing control signal
19	STB2	I	
20	STB1	I	
21	GND	—	Ground power supply for thermal head
22	GND	—	
23	LAT	I	Data latch
24	DO	O	Data out
25	VH	I	Power supply for thermal head
26	VH	I	
27	MT/A	I	Stepping motor excitation signal
28	MT/A	I	
29	MT/B	I	
30	MT/B	I	

Do not plug or unplug the FPC when power is on.



## Cutter (CN5)

Connector on control circuit side: B4B-PH (J.S.T. or equivalent)

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	SW1	I	Cutter position detect switch1	2	SW2	-	Home position detect switch 2
3	M+	I/O	Stepping motor coil excitation M+	4	M-	I/O	Stepping motor coil excitation M-

### Fujitsu Components International Headquarter Offices

#### Japan

Fujitsu Component Limited  
Gotanda-Chuo Building  
3-5, Higashigotanda 2-chome, Shinagawa-ku  
Tokyo 141, Japan  
Tel: (81-3) 5449-7010  
Fax: (81-3) 5449-2626  
Email: [promothq@ft.ed.fujitsu.com](mailto:promothq@ft.ed.fujitsu.com)  
Web: [www.fcl.fujitsu.com](http://www.fcl.fujitsu.com)

#### North and South America

Fujitsu Components America, Inc.  
250 E. Caribbean Drive  
Sunnyvale, CA 94089 U.S.A.  
Tel: (1-408) 745-4900  
Fax: (1-408) 745-4970  
Email: [marcom@fcai.fujitsu.com](mailto:marcom@fcai.fujitsu.com)  
Web: [www.fcai.fujitsu.com](http://www.fcai.fujitsu.com)

#### Europe

Fujitsu Components Europe B.V.  
Diamantlaan 25  
2132 WV Hoofddorp  
Netherlands  
Tel: (31-23) 5560910  
Fax: (31-23) 5560950  
Email: [info@fceu.fujitsu.com](mailto:info@fceu.fujitsu.com)  
Web: [www.fceu.fujitsu.com](http://www.fceu.fujitsu.com)

#### Asia Pacific

Fujitsu Components Asia Ltd.  
102E Pasir Panjang Road  
#04-01 Citilink Warehouse Complex  
Singapore 118529  
Tel: (65) 6375-8560  
Fax: (65) 6273-3021  
Email: [fcai@fcal.fujitsu.com](mailto:fcai@fcal.fujitsu.com)  
[www.fcal.fujitsu.com](http://www.fcal.fujitsu.com)