FUJITSU

BATTERY DRIVE, FTP-608 Series
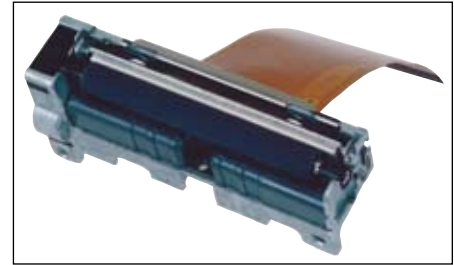
2" HIGH SPEED THERMAL PRINTER

FTP-628 MCL701/751

Vertical Easy Loading Method

■ 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.

FTP-628MCL701

■ HIGHLIGHTS

- **Easy loading type**
  Our original platen removal mechanism improved paper loading and maintenance.

- **Ultra compact**
  701: Height 31.5 mm, width 67.5 mm, depth 20.5 mm
  751: Height 32.5 mm, width 67.5 mm, depth 19.8 mm

- **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.

- **RoHS compliant**

FTP-628MCL751

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■ PART NUMBERS

Item		Part Number
Printer mechanism		FTP-628MCL701 (without platen open detect switch) no I/F board
		FTP-628MCL751 (Serial and USB Interface board available)
LSI for driving		FTP-628CU601R
Interface board	USB	FTP-628DSL642R
	Serial	FTP-628DSL643R
Interface cables	USB	FTP-629Y301
	Serial	FTP-628Y302
Power cables	Logic, head, motor	FTP-628Y402

■ SPECIFICATIONS

Item		Specifications
Part number		FTP-628MCL701/751
Printing method		Thermal line dot method
Dot structure		384 dots/line
Dot pitch (horizontal)		0.125mm (8dots/mm) - Dot density
Dot ptich (vertical)		0.125mm (8dots/mm) - Line feed pitch
Effective printing area		48 mm
Number of columns		ANK 32 columns/line (maximum 12 x 24 dot font)
Paper width		58 mm +0/-1
Paper thickness		60 to 100μm (some paper may not be used because of characteristics)
Printing speed		Maximum 80mm/sec. (640 dot lines/sec.) 8.5V
Interface		FTP-628DSL600 series
Character types	Alphanumeric, katakana:	159 types
	International and special characters:	195 types
	OCRI	103 types
	OCRIII	23 types
	OCRIV	103 types
	Extended numeric	11 types
	JIS Kanji level 1, level 2, non-Kanji (supported only when Kanji CG is mounted)	about 6,800 types
Character, dimensions (WxH), number of columns	Half size	12 x 24 dots, (1.5 x 3.0 mm), 32 columns: ANK
	Full size	24 x 24 dots, (3.0 x 3.0 mm), 16 columns: ANK, Kanji
	Half size	8 x 16 dots, (1.0 x 1.0 mm), 48 columns: ANK
	Full size	16 x 16 dots, (2.0 x 2.0 mm), 24 columns: ANK, Kanji
	OCR I	24 x 40 dots, 16 columns
	OCR III	24 x 48 dots, 16 columns
	OCRIV	36 x 60 dots, 10 columns
	Extended numeric	24 x 48 dots, 16 columns

■ SPECIFICATIONS

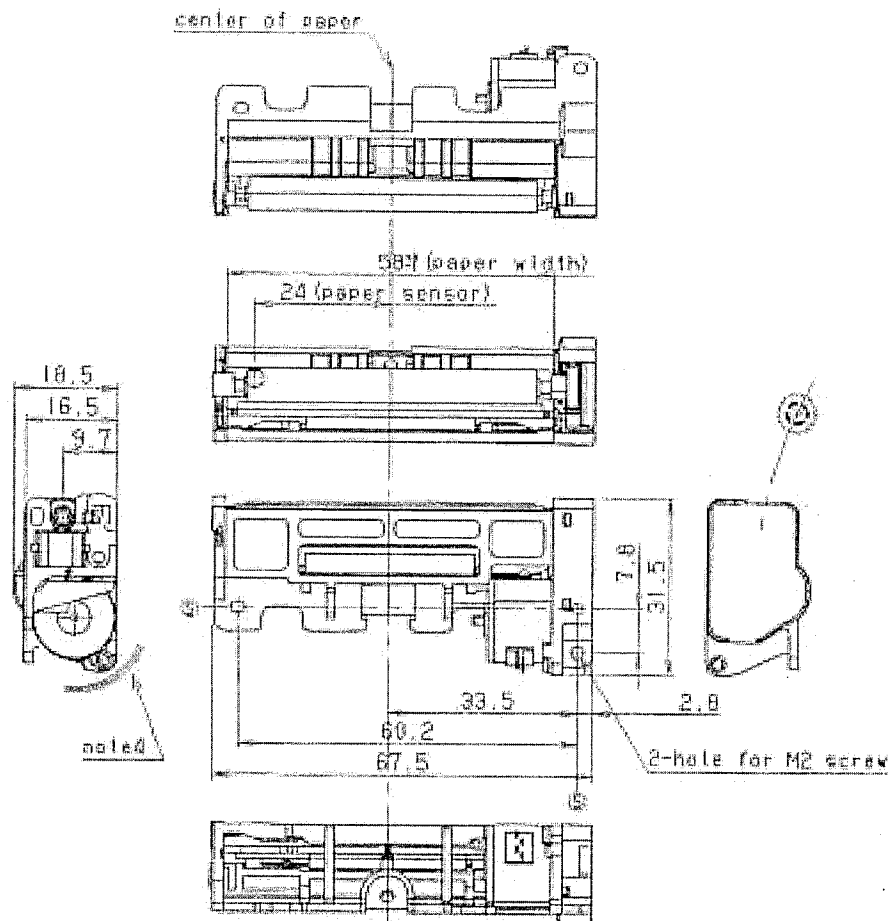| Item			Specification
			FTP-628MCL701/751
Item			Conforms to RS232C/USB
Operating Voltage	For print head		4.2 VDC to 8.5 V, average current 0.87A (0.98), peak value Printing ratio: 12.5%, printing speed 500mm/sec. at 7.2V
	For motor		4.2 VDC to 8.5 V, 1 A maximum
	For logic		3.0 to 5.25 VDC, 0.1 A maximum
Dimensions	Printer mechanism	701	67.5 x 20 x 31.5 mm (WxDxH)
		751	67.5 x 19.8 x 32.5 mm (WxDxH)
	Interface board		70 x 52 x 20 mm (WxDxH)
Weight	Printer mechanism	701	Approximately 40g
		751	Approximately 46g
	Interface board		Approximately 22g
Head life			Pulse resistance: 100 million pulses/dot (under our standard conditions). Abrasion resistance: paper traveling distance 50km (print ratio: 25% or less)
Operating environment	Operating temperature*		0ºC to +50ºC
	Operating humidity		20 to 85% RH (no condensation)
	Storage temperature		-20ºC to +60ºC (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-interruptor
Recommended thermal sensitive paper	High sensitive paper		TF50KS-E2 (Nippon paper)
	Standard paper		TF50KS-E2 (Nippon paper) PD150R (Oji paper) FTP-020P0701 (58mm)
	Medium life storage paper		TF60KS-F2 (Nippon paper) FTP-020P0102 (58mm) PD170R (Oji paper) AFP220VBB-1 (Mitsubishi paper)
	Long life storage paper		PD160R (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

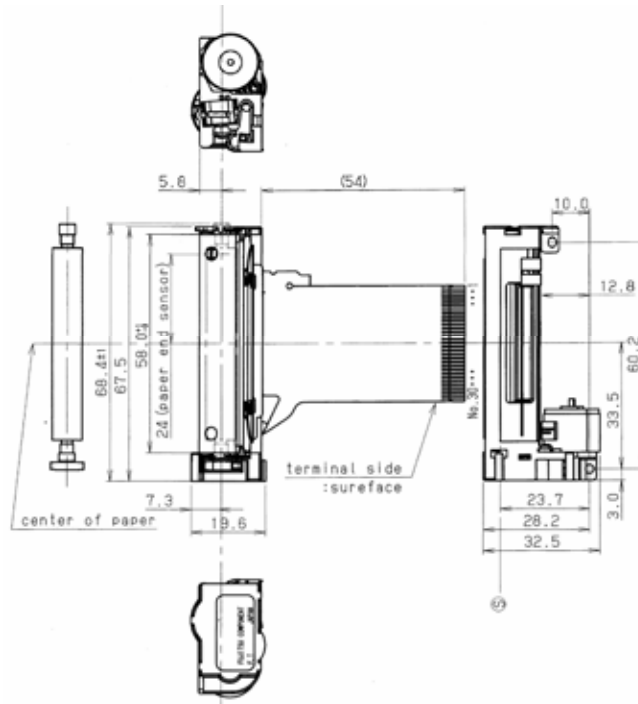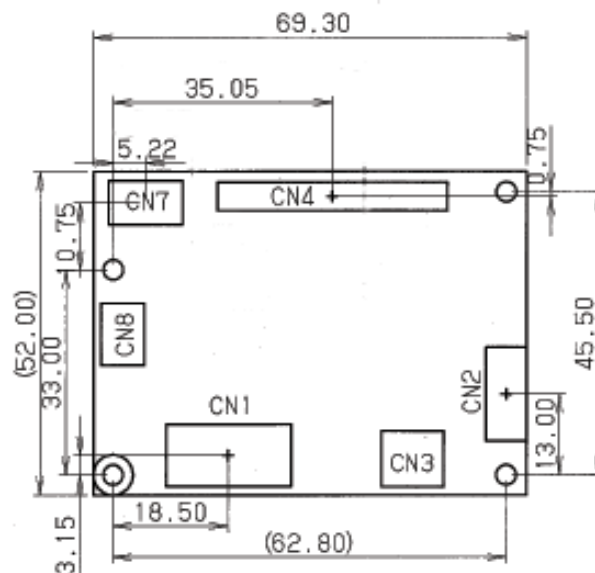|	Item		Item
1.	Test print function	8.	Mark detection function
2.	Paper out detection	9.	MCU operation abnormality detection
3.	Paper near end detection	10.	Power ON/OFF sequence protection
4.	Thermal head temperature abnormality detection	11.	Motor over-current protection
5.	Blow-out fuse detection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

■ DIMENSIONS

FTP-628MCL701

■ DIMENSIONS

FTP-628MCL751

Notes:

1. The dimensions tolerance is ±0.5mm unless specified.
2. Dimensions in parenthesis are reference dimensions.
3. S shows the platen center line.

Fig-2 コネクタ配置図

■ **PRINTER CONNECTOR (FLEXIBLE PT BOARD) PIN ARRAYS**
FTP-628 MCL701

Thermal head, control circuit side connector: 52610-3090 or 3071 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	MT B	I	Stepping motor excitation signal
5	MT $\overline{B}$	I	
6	MT A	I	
7	MT $\overline{A}$	I	
8	VH	I	Power supply for thermal head
9	VH	I	
10	DI	I	Data in
11	CLK	I	Synchronous clock for communication
12	GND	—	Ground power supply for thermal head
13	GND	—	
14	STB6	I	Thermal head energizing control signal
15	STB5	I	
16	STB4	I	
17	Vdd	I	Logic power
18	TH	O	Thermally sensitive resistor input termnial 1
19	TH	O	Thermally sensitive resistor input termnial 2
20	STB3	I	Thermal head energizing control signal
21	STB2	I	
22	STB1	I	
23	GND	—	Ground power supply for thermal head
24	GND	—	
25	$\overline{LAT}$	I	Data latch
26	DO	O	Data out
27	VH	I	Power supply for thermal head
28	VH	I	
29	N.C.	-	Not connected
30	N.C.	-	

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

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■ **PRINTER CONNECTOR (FLEXIBLE PT BOARD) PIN ARRAYS**
  FTP-628 MCL751

Thermal head, control circuit side connector: 52610-3090 or 3071 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	N.C.	—	Not connected
5	N.C.	—	Not connected
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	$\overline{\text{LAT}}$	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 $\overline{\text{A}}$	I	
29	MT B	I	
30	MT $\overline{\text{B}}$	I	

Fujitsu Components International Headquarter Offices

Japan
Fujitsu Component Limited
Gotanda-Chuo Building
3-5, Higashigotanda 2-chome, Shinagawa-ku
Tokyo 141 8630, Japan
Tel: (81-3) 5449-7010
Fax: (81-3) 5449-2626
Email: promothq@fcl.fujitsu.com
Web: 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: components@us.fujitsu.com
Web: http://us.fujitsu.com/components/

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
Web: emea.fujitsu.com/components/

Asia Pacific
Fujitsu Components Asia Ltd.
102E Pasir Panjang Road
#01-01 Citilink Warehouse Complex
Singapore 118529
Tel: (65) 6375-8560
Fax: (65) 6273-3021
Email: fcal@fcal.fujitsu.com
Web: http://www.fujitsu.com/sg/services/micro/components/

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