

# 24V DRIVE, FTP-609 SERIES

## ULTRA HIGH SPEED (200mm/s)

## 3" TYPE MECHANISM (Cutter option)

### FTP-639MCL103/383#01/383#02

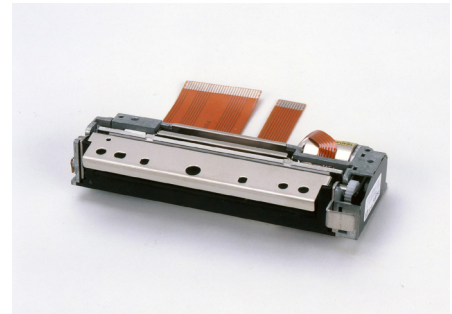
#### ■ OVERVIEW

The FTP-609MCL Series thermal printer (driven by 24VDC) provides ultra-high speed printing (200mm/s) for 2-inch and 3-inch wide paper.

This series is suitable for a variety of applications, such as POS/ ECR, kiosk terminals, ticket machines, label printers, banking machines, measuring devices, medical equipment, etc.

#### ■ HIGHLIGHTS

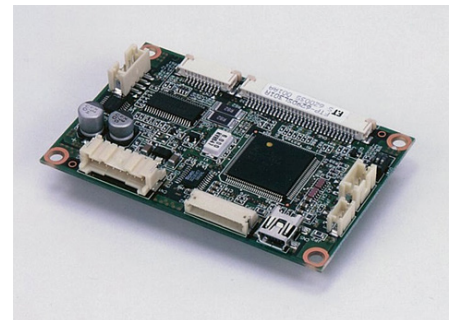
- **Ultra high speed printing**  
It can print at 200 mm/s (1600 dotlines/s) maximum by using Fujitsu Components' unique head drive control.
- **High resolution**  
8 dots/mm head provides clear print out.
- **ELM (Easy Loading Mechanism) with lock type**  
Fujitsu Components' unique platen release mechanism allows easy paper setting and easy head maintenance.
- **Auto Cutter**  
Printer with auto cutter (full cut/ partial cut) is available. It can be mounted on top of the mechanism.
- **Multi-featuring diecast frame**  
By application of multi-featuring diecast frame, continuous print by function of heat-sink, high ESD stand by function of earth frame and shock/vibration stand by function of solid frame are valid.
- **Compact size**  
Depth: 40.5mm, width: 82.2mm, height: 20.5mm for the 2-inch model. The 3-inch model has a width of 104.2mm
- **RoHS compliant**



FTP-639MCL103



FTP-639MCL383



FTP-629DSL301

# FTP-639MCL103/383#01/383#02

## ■ PART NUMBERS

Name		Part Number
Printer mechanism	Detachable platen	FTP-639MCL103 (with flex tail)
Mechanism with cutter	Detachable platen	FTP-639MCL383#01 (full cut)/ FTP-639MCL383#02 (partical cut)
LSI		FTP-629CU301
Interface board	Serial (RS232C)	FTP-629DSL301
	USB	FTP-629DSL301
Thermal head cable extension		-
Interface cable	Serial	FTP-629Y302
	USB	FTP-629Y301
Power supply cable		FTP-629Y602

## ■ GENERAL SPECIFICATIONS

Item		Specifications	
Part number		FTP-639MCL103	FTP-639MCL383#01/#02
Printing method		Thermal sensitive line dot method	
Dot structure		576 dots/line	
Dot pitch (horizontal)		0.125mm (8dots/mm) - Dot density	
Dot pitch (vertical)		0.125mm (8dots/mm) - Line feed pitch	
Effective printing area		72 mm	
Number of columns		ANK 48 columns/line (12 x 24 dot font) OCR 24 columns	
Paper width		80mm +0/-1	
Paper thickness		60 to 100µm (there may be exceptions)	
Cutting type		---	ELM full or partial
Printing speed	FTP-629DCL/DSL series	80mm/sec. (640 dot lines/sec.) line mode 200mm/sec. (1600 dot lines/sec.) image mode	
	FTP-629DSL100 series	125mm/sec. (1000 dot lines/sec.) line mode	
	FTP-629DSL300 series	200mm/sec. (1600 dot lines/sec.) page mode	
Character types	Alphanumeric, Kana:	159 types	159 types
	International:	195 types	195 types
	JIS Kanji (Kanji CG loaded board):	about 6,800 types	about 6,800 types
	OCRI		103 types
	OCRIII		23 types
	OCRIV		103 types
	Extended numeric		11 types
Character, dimensions (WxH), number of columns	24x12 dots, (3.0x1.5mm)	48 columns: ANK	24 columns, OCRI
	16x16 dots, (2.0x2.0mm)	24 columns: ANK	24 columns, OCRIII
	24x24 dots, (3.0x3.0mm)	72 columns: ANK	16 columns, OCRIV
	8x16 dots, (1.0x4.0mm)	36 columns: ANK	24 columns, extended numeric
Interface standard		Centronics / RS232C /USB	Serial/USB

# FTP-639MCL103/383#01/383#02

(Continued)

Item		Specifications	
Part number		FTP-639MCL103	FTP-639MCL383#01/#02
Power supply	For head	24 VDC $\pm$ 5%, 1.9A (4A) (24V, 25% printing ratio)	
	For printer motor	24 VDC $\pm$ 5% 1A maximum	
	For cutter motor	---	24 VDC $\pm$ 5% 1A maximum
	For logic	5 VDC $\pm$ 5% 0.2A maximum	
Dimension W x D x H	Printer mechanism	104.2 x 40.2 x 20.5mm	---
	Printer mechanism with cutter	---	112.5 x 70.3 x 37.4mm
	Interface board	77 x 50 x 21.5mm	
Weight	Printer mechanism	Approximately 125g	---
	Printer mechanism with cutter	---	Approximately 300g
	Interface board	Approximately 30g	
Life	Head	Pulse durability: 100M pulse/dot (using Fujitsu's standard driving method) Wear resistance: 100km (at 12.5% print ratio)	
	Cutter	---	1,000,000 cuts minimum
	Platen	5,000 times (open/close)	
Environmental conditions	Operating temperature	-10°C to +60°C (guarantee)	0°C to +50°C (guarantee)
	Operating humidity	20 to 85% RH (no condensation)	
	Storage temperature	-40°C to +70°C	-20°C to +60°C
	Storage humidity	5 to 95% RH (no condensation)	
Detection	Head temperature	By thermistor	
	Paper out/Mark detect	By photointerruptor	
	Head release	By slide switch	
Recommended thermal sensitive paper	High sensitive paper	TF50KS-E4 (Nippon paper)	
	Standard paper	TF60KS-E2 (Nippon paper), FTP-030P0104 (80mm) PD150R (Oji paper), FTP-030P0701 (80mm)	
	Medium life storage paper	TF60KS-F1 (Nippon paper), FTP-030P0102 (80mm) PD170R (Oji paper) P220VBB-1 (Mitsubishi paper) PD160R-N (Oji paper)	
	Long life storage paper	AFP-235 (Mitsubishi paper) TP50KJ-R (Nippon paper) HA220AA (Nippon paper)	

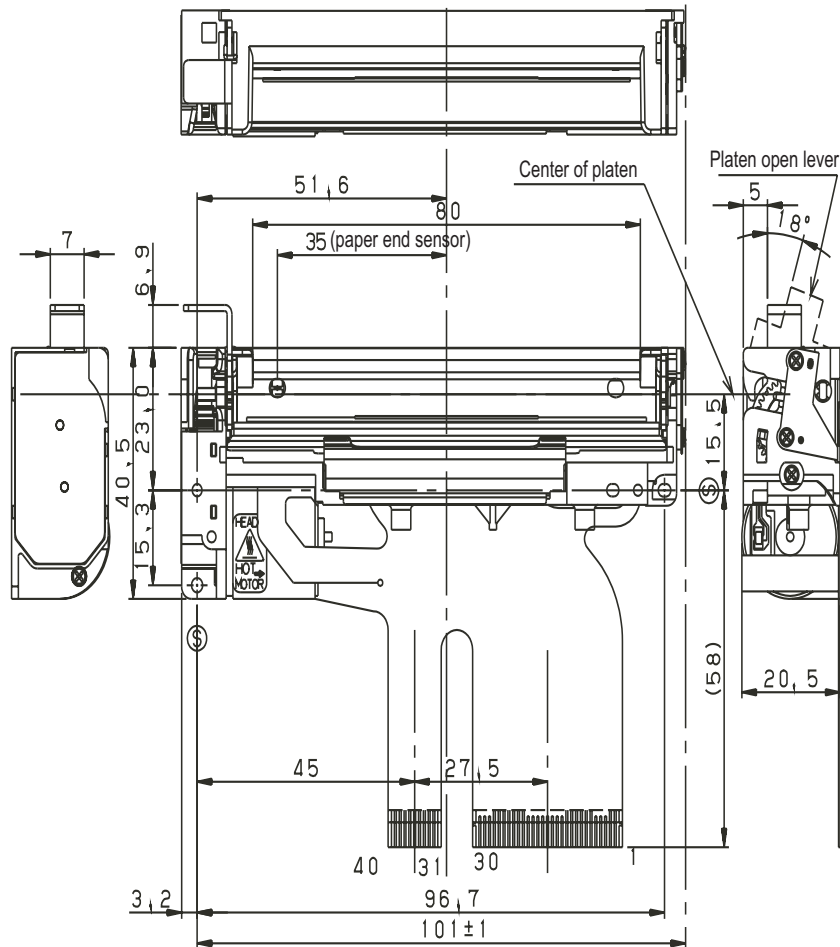
## FUNCTION

ITEM		ITEM	
1.	Test printing	8.	Cutter trouble detection
2.	Paper-out detection	9.	Motor power save
3.	Paper near end detection	10.	Mark detection
4.	Head-up detection	11.	MCU trouble detection
5.	Abnormal temp. of thermal head detection	12.	Power on/off sequence protection
6.	Blown fuse detection	13.	Motor protection
7.	Abnormal voltage detection of head	14.	Hardware timer

## DIMENSIONS

### 1. Printer mechanism without cutter

FTP-639MCL103



Unit: mm



## ■ CONNECTOR PIN ASSIGNMENT OF PRINTER MECHANISM (FPC)

### 1. Thermal head, motor, sensor

\* FPC type (FTP-639MCL103/383#01/383#02)

No 1 to 30: 52610-3071 (Molex), No 31 to 40: 52610-1071 (Molex)

\* Cable extension type (FTP-639MCL105) LY20-DC40 (JAE)

No	Signal	I/O	Contents	No	Signal	I/O	Contents
1	SW	O	Platen open switch	2	SW	-	Platen open switch
3	VH	-	Power for thermal head	4	VH	-	Power for thermal head
5	VH	-	Power for thermal head	6	VH	-	Power for thermal head
7	DI	I	Data in	8	$\overline{\text{STB3}}$	I	Print enable 3
9	$\overline{\text{STB4}}$	I	Print enable 4	10	VDD	-	Power for logic
11	TM	-	Head thermistor	12	GND	-	Head GND
13	GND	-	Head GND	14	GND	-	Head GND
15	GND	-	Head GND	16	GND	-	Head GND
17	GND	-	Head GND	19	GND	-	Head GND
19	GND	-	Head GND	20	GND	-	Head GND
121	TH	-	Thermistor	22	$\overline{\text{STB1}}$	I	Print enable 1
23	$\overline{\text{STB2}}$	I	Print enable 2	24	$\overline{\text{LAT}}$	I	Print data latch
25	CLK	I	Clock	26	DO	O	Data out
27	VH	-	Power for thermal head	28	VH	-	Power for thermal head
29	VH	-	Power for thermal head	30	VH	-	Power for thermal head
31	NC	-	Not connected	32	TM	O	Motor temperature sensor
33	TM	-	Motor temperature sensor	34	$\overline{\text{MT A}}$	I/O	Motor coil excitation /A
35	MT A	I	Motor coil excitation A	36	$\overline{\text{MT B}}$	I/O	Motor coil excitation /B
37	MT B	I	Motor coil excitation B	38	PHK	-	Paper out sensor cathode
39	VSEN	I	Power for paper sensor	40	$\overline{\text{PHE}}$	O	Paper out sensor emitter

### 2. Cutter (CN5)

With cutter type (FTP-639MCL3836#01/#02)

Connector type: B4B-PH-SM4-TB (J.S.T.) or equivalent

No.	Signal	I/O	Contents	No.	Signal	I/O	Contents
1	SW1	-	Cutter home position switch	2	SW2	O	Cutter home position switch
3	M+	O	Cutter motor drive	4	M-	I	Cutter motor drive

## ■ INTERFACE COMMAND OPTIONS

Please refer to the FTP-629DSL301 series datasheet.

---

## Contact

### Japan

FUJITSU COMPONENT LIMITED  
Shinagawa Seaside Park Tower  
12-4, Higashi-shinagawa 4-chome,  
Tokyo 140 0002, Japan  
Tel: (81-3) 3450-1682  
Fax: (81-3) 3474-2385  
Email: fcl-contact@cs.jp.fujitsu.com  
Web: www.fujitsu.com/jp/group/fcl/en/

### North and South America

FUJITSU COMPONENTS AMERICA, INC.  
2290 North First Street, Suite 212  
San Jose, CA 95131 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, The Netherlands  
Tel: (31-23) 5560910  
Fax: (31-23) 5560950  
Email: info@fceu.fujitsu.com  
Web: www.fujitsu.com/uk/products/  
devices/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@sg.fujitsu.com  
www.fujitsu.com/sg/products/devices/  
components/

### China

FUJITSU ELECTRONIC COMPONENTS  
(SHANGHAI) CO., LTD.  
Unit 4306, InterContinental Center  
100 Yu Tong Road, Shanghai 200070, China  
Tel: (86 21) 3253 0998 / Fax: (86 21) 3253 0997  
Email: fcal@sg.fujitsu.com  
www.fujitsu.com/sg/products/devices/  
components/

### Hong Kong

FUJITSU COMPONENTS HONG KONG Co., Ltd.  
Room 06, 28/F, Greenfield Tower, Concordia  
Plaza, No.1 Science Museum Road,  
Tsim Sha Tsui East, Kowloon, Hong Kong  
Tel: (852) 2881 8495 Fax: (852) 2894 9512  
Email: fcal@sg.fujitsu.com  
www.fujitsu.com/sg/products/devices/  
components/

### Korea

FUJITSU COMPONENTS KOREA, LTD.  
Alpha Tower #403,  
645 Sampyeong-dong,  
Bundang-gu, Seongnam-si,  
Gyeonggi-do, 13524 Korea  
Tel: (82 31) 708-7108  
Fax: (82 31) 709-7108  
Email: fcal@sg.fujitsu.com  
www.fujitsu.com/sg/products/  
devices/components/

---

## Copyright

All trademarks or registered trademarks are the property of their respective owners. Fujitsu Components America or its affiliates do not warrant that the content of datasheet is error free. In a continuing effort to improve our products Fujitsu Components America, Inc. or its affiliates reserve the right to change specifications/datasheets without prior notice. Copyright ©2020 Fujitsu Components America, Inc. All rights reserved. Revised October 20, 2020.

---