CT10978 Chip-On-Flex Specification

PCAP Microchip® mxT1664T3 I²C

Sustaining Quality,
Exceeding Expectations

DawarTouch®

DAWAR
THINKING BEYOND THE TOUCH
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January 29, 2020
Rev B

1. General Description

The CT10978 is a chip-on-flex (COF) circuit programmed to work with 12.1in Dawar sensor DW03047. The unprogrammed COF circuit is CT10456. The COF circuit uses the Microchip® mxT1664T3 maXTouch® controller. The communications interface is standard I^{2}C @ 400kHz.

For more information on the mxT1664T3 controller refer to the following Microchip® documentation:

▶ mxT1664T3 Datasheet

▶ Interfacing with maXTouch Touchscreen Controllers

Both documents are available on Microchip's website.

2. Functional Description

The CT10978 controller supports the following features:

▶ Up to 16 finger touches

▶ Stylus touches (stylus diameter depends on sensor design)

▶ Glove touches

▶ Thick cover lenses (up to 4mm glass, 2mm plastic)

▶ Greater than 100Hz report rate

▶ Low latency (<10ms for first touch report from idle mode)

▶ Automatic self-calibration

▶ Aggressive noise avoidance and noise cancellation features

▶ Maximum resolution of 4095 x 4095

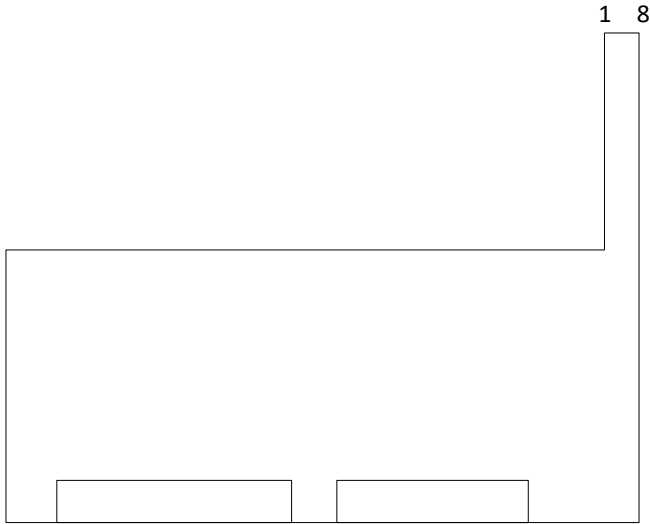Additional tuning support from Dawar is available for specialized applications.

3. Electrical Specifications

Parameter	Min	Typ	Max	Units	Remarks
Digital Power Supply (VDD)	3.0	3.3	3.4	V	
Active Current	-	33	-	mA	Note 1
Sleep Current	-	3.5	-	mA	
X Electrodes	-	-	32	-	
Y Electrodes	-	-	50	-	

Note 1: Active power depends on configuration settings and number of touches.

4.　Connector

Pin	Description	Note
1	3.3V	
2	GND	
3	SCL	I2C clock with 3.3k pull-up to 3.3 V
4	SDA	I2C data with 3.3k pull-up to 3.3 V
5	/CHG	Active low interrupt indicating data is available with 3.3k pull-up to 3.3 V
6	/RESET	Active low reset with 10k pull-up to 3.3V
7	GPIO2	GPIO – contact Dawar for information
8	GPIO1	GPIO – contact Dawar for information

Mating connector is Molex 503480-0800.

I^2C address is 0x4B.

5.　Environmental Specifications

Parameter	Min	Typ	Max	Units	Remarks
Operating Temperature	-40	-	85	°C	
Storage Temperature	-40	-	90	°C	
Relative Humidity	0	-	95	%RH	Note 1

Note 1: RH is defined at 60°C, non-condensing.

6. Operating System Support

Operating System	Supported	Remarks
Microsoft Windows XP	No	
Microsoft Windows 7	No	
Microsoft Windows 8	No	Note 1
Microsoft Windows 10	No	Note 1
Linux	Yes	Note 2

Note 1: Windows HID over I^{2}C is supported on custom designs.
Note 2: For information on Linux drivers refer to https://github.com/atmel-maxtouch/linux/wiki.
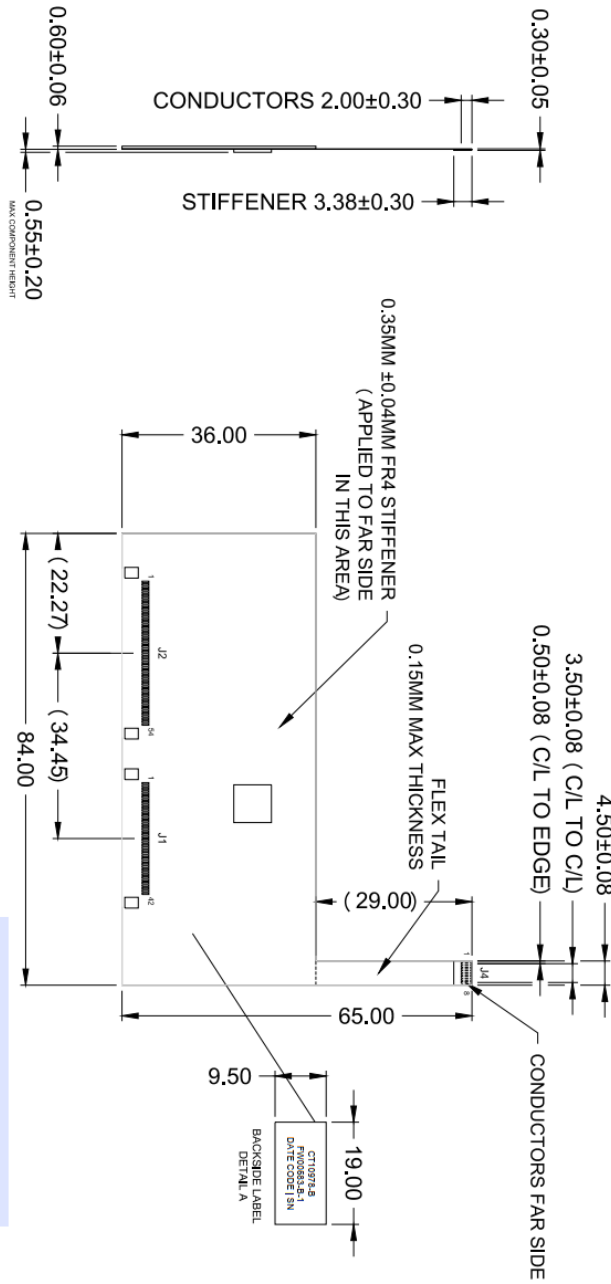
7. Product Life

Dawar Technologies is committed to providing products stability and support to our valued customers throughout the life of the product. All Dawar Touch products meet the following minimum requirements:

▶ 5 year minimum product lifecycle

▶ 12 month end of life (EOL) notification

▶ Last time buy option with EOL notification

▶ 60 day change notification for any change that affects form, fit, or function

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NOTES:
1. CONNECTOR J1: MOST WELL MWFPC05PSN-42-X-X-L
2. CONNECTOR J2: MOST WELL MWFPC05PSN-54-X-X-L
3. MATING CONNECTOR FOR J4: MOLEX 503480-00800 OR EQUIVALENT
4. J4: TRACE PITCH - 0.50±0.05 TRACE WIDTH - 0.35±0.03
5. DIMENSIONS IN PARENTHESIS ARE FOR REFERENCE ONLY

J4	
PIN	**FUNCTION**
1	I2C_3.3V
2	GND
3	SCL
4	SDA
5	/CHG
6	/RESET
7	GPIO0
8	GPIO1

CONDUCTORS 2.00±0.30

STIFFENER 3.38±0.30

0.30±0.05

0.60±0.06

0.55±0.20
MAX COMPONENT HEIGHT

0.35MM ±0.04MM FR4 STIFFENER
(APPLIED TO FAR SIDE
IN THIS AREA)

0.15MM MAX THICKNESS

FLEX TAIL

3.50±0.08 (C/L TO C/L)
0.50±0.08 (C/L TO EDGE)

4.50±0.08

36.00

(22.27)

(34.45)

84.00

65.00

9.50

19.00

(29.00)

CONDUCTORS FAR SIDE

BACKSIDE LABEL
DETAIL A

REVISIONS				
DWG REV	ECO	DESCRIPTION	DWN	DATE
A	-	INITIAL RELEASE	CPO	10-16-18
B	1437	UPDATED CONTROLLER CONFIGURATION.	CPO	05-20-19

BASE CONTROLLER	
CT10456-C	
DESCRIPTION	FIRMWARE NO.
ATMEL mXT1166T3 PCAP COF CONTROLLER - I2C 42X54 PIN	FW00683-B-1
	ITEM/DRAWING NO.
	CT10978-B
UNIT	TOLERANCE
mm [INCH]	±0.25 [0.010] UNLESS SPECIFIED
SHEET	DRAWN BY
1 OF 1	C. OSTROWSKI
	DATE
	10-16-18
	DWG REV
	1

CT10978-B
FW00683-B-1
DATE CODE | S/N

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Revision History

Revision	Date	Content	Author
A	9-6-2019	Initial Release	Tony Gray
B	1-29-2020	Updated drawing	Tony Gray

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