DAWAR
THINKING BEYOND THE TOUCH

CT10456 Chip-On-Flex Specification

PCAP Microchip® mxT1664T3 I²C

Sustaining Quality,
Exceeding Expectations

DawarTouch®

DAWAR
THINKING BEYOND THE TOUCH
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Rev B

1. General Description

The CT10456 is a base chip-on-flex (COF) circuit designed for Dawar's line of standard projected capacitive (PCAP) touch sensors. The COF uses the Microchip® mxT1664T3 maXTouch® controller. The communications interface is standard I^2C @ 400kHz. The CT10456 is an unprogrammed COF. Programmed versions of this COF are assigned custom CT part numbers.

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 CT10456 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

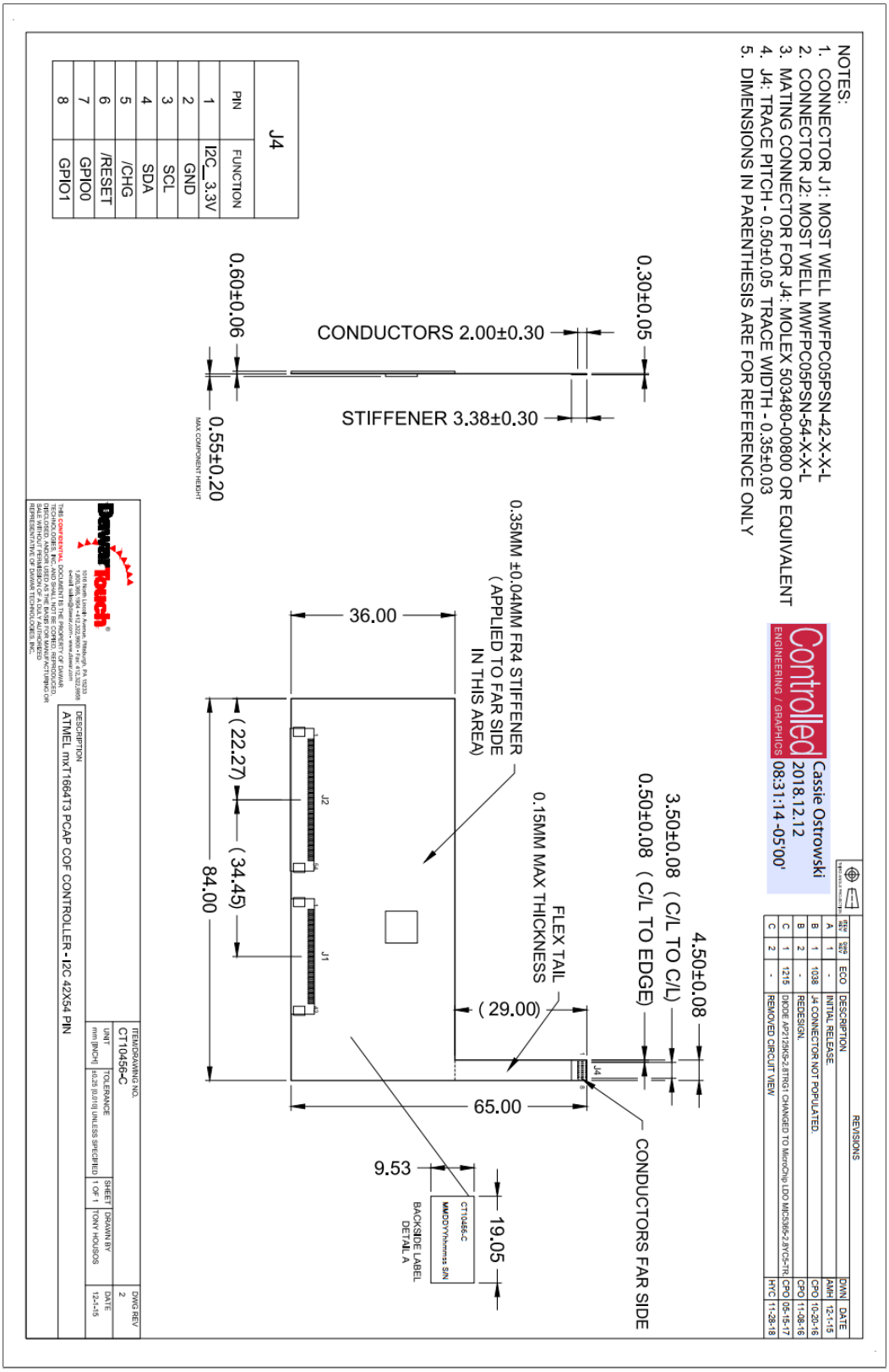
Operating System	Supported	Remarks
Microsoft Windows XP	No	
Microsoft Windows 7	No	
Microsoft Windows 8	No	Note 1
Microsoft Windows 10	No	Note 1
Linux	Yes	Note 2

Note 1: Windows HID over I^2C 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


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
REVISIONS
REV
SHEET
ECO
DESCRIPTION
DWN
DATE
A 1 - INITIAL RELEASE AMH 12-1-15
B 1 1038 J4 CONNECTOR NOT POPULATED. CPO 10-20-16
B 2 - REDESIGN. CPO 11-08-16
C 1 1215 DIODE AP2125N5-2.8TRG1 CHANGED TO MicroChip LDO MIC5365-2.8YC5-TR CPO 05-15-17
C 2 - REMOVED CIRCUIT VIEW HTC 11-28-18
Controlled
ENGINEERING / GRAPHICS
Cassie Ostrowski
2018.12.12
08:31:14 -05'00'
J4
PIN
FUNCTION
1 I2C_3.3V
2 GND
3 SCL
4 SDA
5 /CHG
6 /RESET
7 GPIO0
8 GPIO1
0.30±0.05
CONDUCTORS 2.00±0.30
STIFFENER 3.38±0.30
0.60±0.06
0.55±0.20
MAX COMPONENT HEIGHT
0.35MM ±0.04MM FR4 STIFFENER
(APPLIED TO FAR SIDE
IN THIS AREA)
36.00
(22.27)
(34.45)
84.00
FLEX TAIL
0.15MM MAX THICKNESS
(29.00)
3.50±0.08 (C/L TO C/L)
0.50±0.08 (C/L TO EDGE)
4.50±0.08
CONDUCTORS FAR SIDE
65.00
9.53
19.05
CT10456-C
MMDDYYhhmmss S/N
BACKSIDE LABEL
DETAIL A
J1
J2
J4
DAWAR Touch
ITEM/DRAWING NO.
CT10456-C
DWG REV
2
DESCRIPTION
ATMEL mXT1664T3 PCAP COF CONTROLLER - I2C 42X54 PIN
UNIT
mm [INCH]
TOLERANCE
±0.25 [0.010] UNLESS SPECIFIED
SHEET
1 OF 1
DRAWN BY
TONY HOUBOS
DATE
12-1-15
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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