

MXT449TD-AT/MXT449TD-AB 1.0

- Initial touch latency <25 ms for first touch from idle (subject to configuration)
- Configurable to allow for power and speed optimization
- Touch panel failure detection
 - Automatic touch sensor diagnostics during run time to support the implementation of safety critical features
 - Diagnostics reported using dedicated output pin or by standard Object Protocol messages
 - Configurable test limits

On-chip Gestures

- Reports one-touch and two-touch gestures

Keys

- Up to 32 nodes can be allocated as mutual capacitance sensor keys (subject to other configurations)
- Adjacent Key Suppression (AKS) technology is supported for false key touch prevention

Enhanced Algorithms

- Lens bending algorithms to remove display noise
- Touch suppression algorithms to remove unintentional large touches, such as palm
- Palm Recovery Algorithm for quick restoration to normal state

Product Data Store Area

- Up to 60 bytes of user-defined data can be stored during production

Power Saving

- Programmable timeout for automatic transition from active to idle states
- Pipelined analog sensing detection and digital processing to optimize system power efficiency

Application Interfaces

- I²C-compatible slave with support for Standard mode (up to 100 kHz), Fast mode (up to 400 kHz), Fast-mode Plus (up to 1 MHz), High-speed mode (up to 3.4 MHz)
- SPI slave interface (up to 8 MHz)
- Interrupt to indicate when a message is available
- SPI Debug Interface to read the real-time raw data for tuning and debugging purposes

Power Supply

- Digital (Vdd) 3.3 V nominal
- Digital I/O (VddIO) 3.3 V nominal
- Analog (AVdd) 3.3 V nominal
- High voltage internal X line drive (XVdd) 6.6 V with internal voltage pump (XVdd = Vdd if voltage pump not used)

Package

- 100-pin TQFP 14 × 14 × 1 mm, 0.5 mm pitch

Operating Temperature

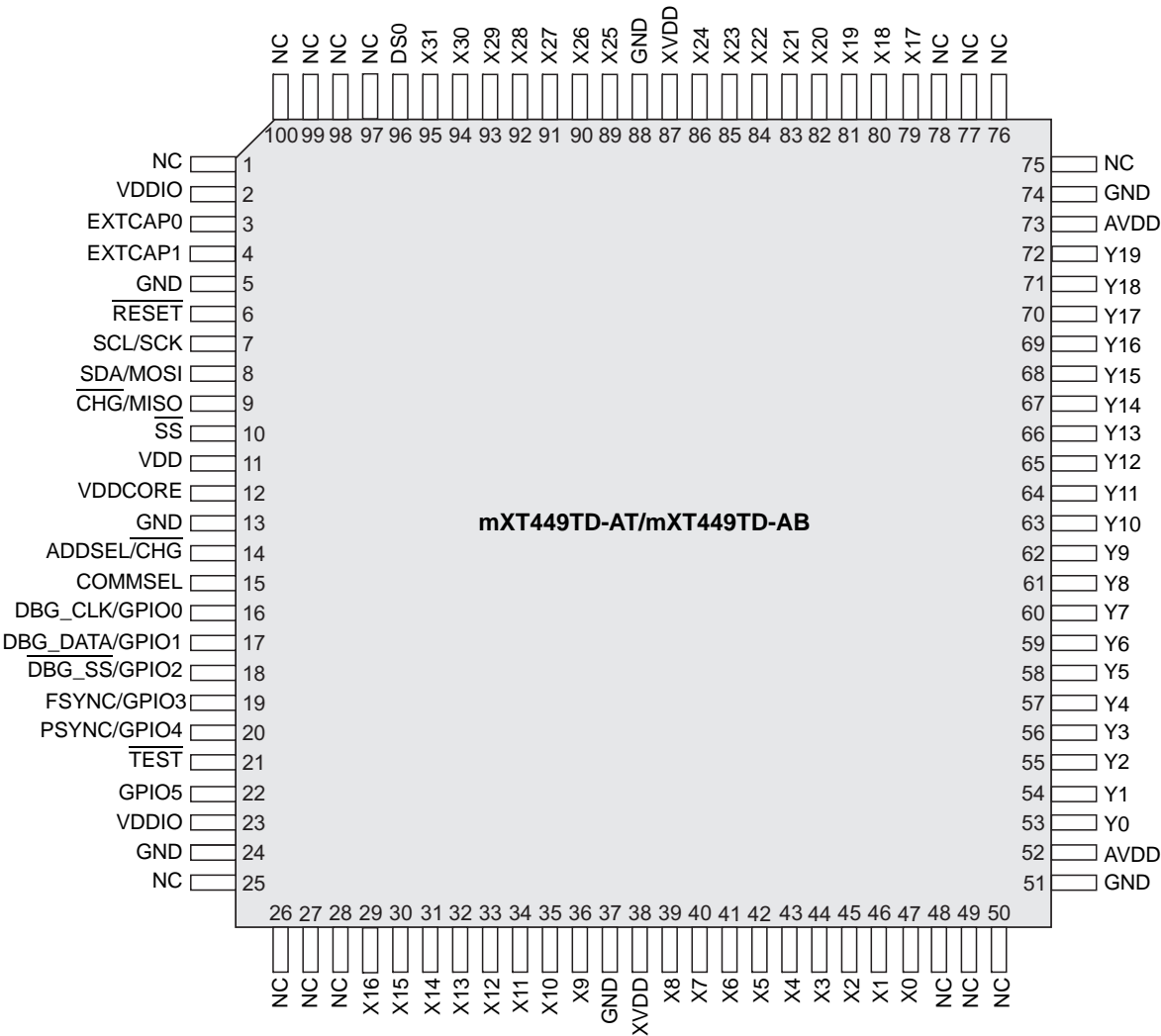
- mXT449TD-AT: -40°C to +85°C (Grade 3)
- mXT449TD-AB: -40°C to +105°C (Grade 2)

Design Services

- Review of device configuration, stack-up and sensor patterns
- Custom firmware versions can be considered

PIN CONFIGURATION

100-pin TQFP



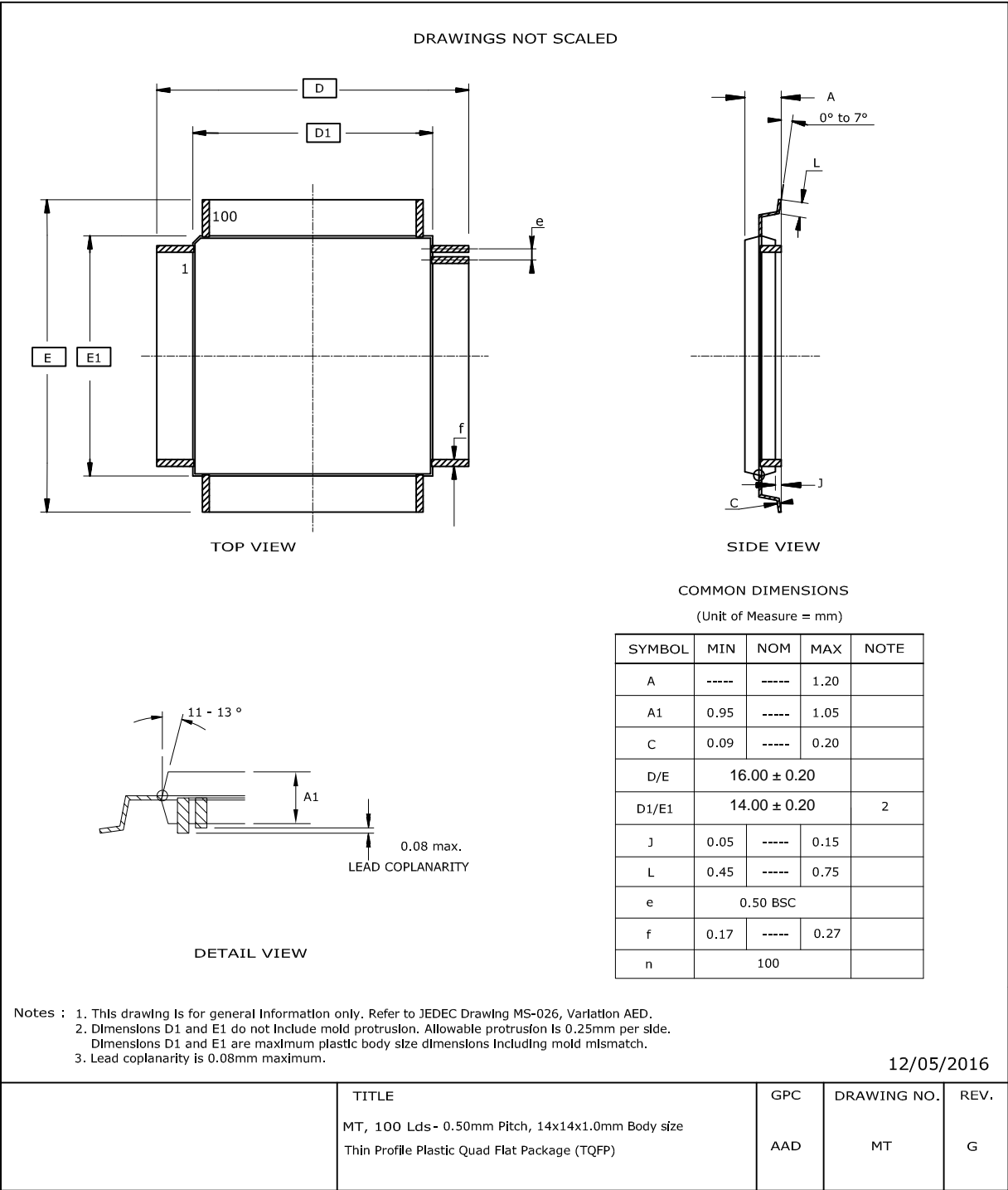
Top view

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1.0 PACKAGING INFORMATION

The following section gives the technical details of the package for the device.

1.1 100-pin TQFP 14 x 14 x 1 mm



APPENDIX A: REVISION HISTORY

Revision A (August 2017)

Initial edition for firmware revision 1.0.AA – Release

Revision B (October 2017)

Updated for firmware revision 1.0.AC – Release

This revision incorporates the following updates:

- Features:
 - Front Panel Material: Recommended panel thickness for glass and plastic revised
- “[Product Identification System](#)”:
 - “[Orderable Part Numbers](#)”: Orderable part numbers and firmware version updated

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PRODUCT IDENTIFICATION SYSTEM

The table below gives details on the product identification system for maXTouch devices. See [“Orderable Part Numbers”](#) below for example part numbers for the MXT449TD-AT/MXT449TD-AB.

To order or obtain information, for example on pricing or delivery, refer to the factory or the listed sales office.

PART NO.	-XXX	[X]	[XX]	[X]	[XXX]
Device	Package	Temperature Range	Sample Type	Tape and Reel Option	Pattern
Device:	Base device name				
Package:	A	=	QFP (Plastic Quad Flatpack)		
	CCU	=	UFBGA (Ultra Thin Fine-pitch Ball Grid Array)		
	C2U	=	UFBGA (Ultra Thin Fine-pitch Ball Grid Array)		
	NHU	=	UFBGA (Ultra Thin Fine-pitch Ball Grid Array)		
	C4U	=	X1FBGA (Extra Thin Fine-pitch Ball Grid Array)		
	MAU	=	XQFN (Super Thin Quad Flat No Lead Sawn)		
	MA5U	=	XQFN (Super Thin Quad Flat No Lead Sawn)		
	UU	=	WLCSP (Wafer Level Chip Scale Package)		
Temperature Range:	Blank	=	-40°C to +85°C (Grade 3)		
	T	=	-40°C to +85°C (Grade 3)		
	B	=	-40°C to +105°C (Grade 2)		
Sample Type:	Blank	=	Release Sample		
	ES	=	Pre-release (Engineering) Sample		
Tape and Reel Option:	Blank	=	Standard Packaging (Tube or Tray)		
	R	=	Tape and Reel ⁽¹⁾		
Pattern:	QTP, SQTP, Code or Special Requirements (Blank Otherwise)				

Note 1: Tape and Reel identifier only appears in the catalog part number description. This identifier is used for ordering purposes and is not printed on the device package. See “Orderable Part Numbers” below or check with your Microchip Sales Office for package availability with the Tape and Reel option.

Orderable Part Numbers

Orderable Part Number	Firmware Revision	Description
ATMXT449TD-AT081 (Supplied in trays)	1.0.AC	100-pin TQFP 14 × 14 × 1 mm, RoHS compliant Operating temperature range -40°C to +85°C (Grade 3) Automotive grade sample; suitable for automotive characterization
ATMXT449TD-ATR081 (Supplied in tape and reel)		
ATMXT449TD-AB081 (Supplied in trays)	1.0.AC	100-pin TQFP 14 × 14 × 1 mm, RoHS compliant Operating temperature range -40°C to +105°C (Grade 2) Automotive grade sample; suitable for automotive characterization
ATMXT449TD-ABR081 (Supplied in tape and reel)		

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