

## High-Speed Interface IC for Inductive Sensing with Digital Output

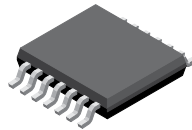
### FEATURES AND BENEFITS

- Highly integrated inductive position sensor interface IC optimized for use in e-motor applications.
- State-of-the-art signal conditioning algorithms ensure high accuracy over a wide range of system configurations
- Up to 16-bit resolution at up to 250,000 rpm for traction motor and motor position sensing applications
- Large output interface selection: SPI, SENT, motorSENT, PWM, and ABI
- Qualified to AEC-Q100 grade 0
- ASIL-Compliant: ASIL C(D) safety element out of context (SEooC) developed in accordance with ISO26262, when used as specified in the safety manual



### PACKAGE

Not to scale



14-pin TSSOP (Single Die, Suffix LE)

### DESCRIPTION

The A17803 is a high-accuracy, high-resolution inductive position sensor interface IC for industrial and automotive applications. It is optimized for use as a position sensor interface in transmission actuators, traction motors, EPS electrical motors, and other high-speed applications.

The A17803 incorporates a coil driver for the transmitting application coil, and two receiving inputs for the receiving application coils. Both receiving signals are subjected to EMC filtering and demodulation in order to extract the target position information.

Compensation of possible error due to coils-target alignments and system design, located in the digital domain of signal path, offers offset adjustment, gain adjustment, and compensation of undesired electrical harmonics.

Due to the possibility of high-frequency input in e-motor applications, the device calculates the speed of the input signals and angle in order to reduce effective latency, resulting in fast tracking position sensing.

The A17803 is offered in surface-mount lead (Pb) free 14-pin TSSOP package.

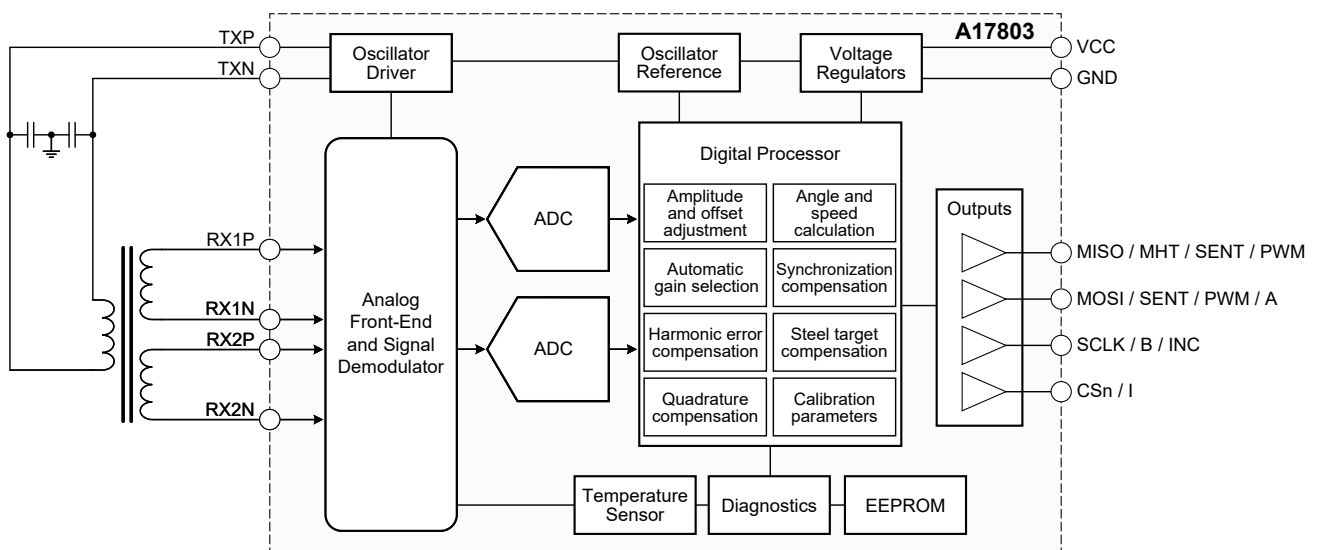


Figure 1: Functional Block Diagram

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# A17803

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### SELECTION GUIDE

Part Number	Programming Interface	Package	Packing
A17803PLEATR-M	Manchester	14-pin TSSOP	4000 pieces per 13-in reel
A17803PLEATR-S	SPI	14-pin TSSOP	4000 pieces per 13-in reel



**PACKAGE OUTLINE DRAWING**

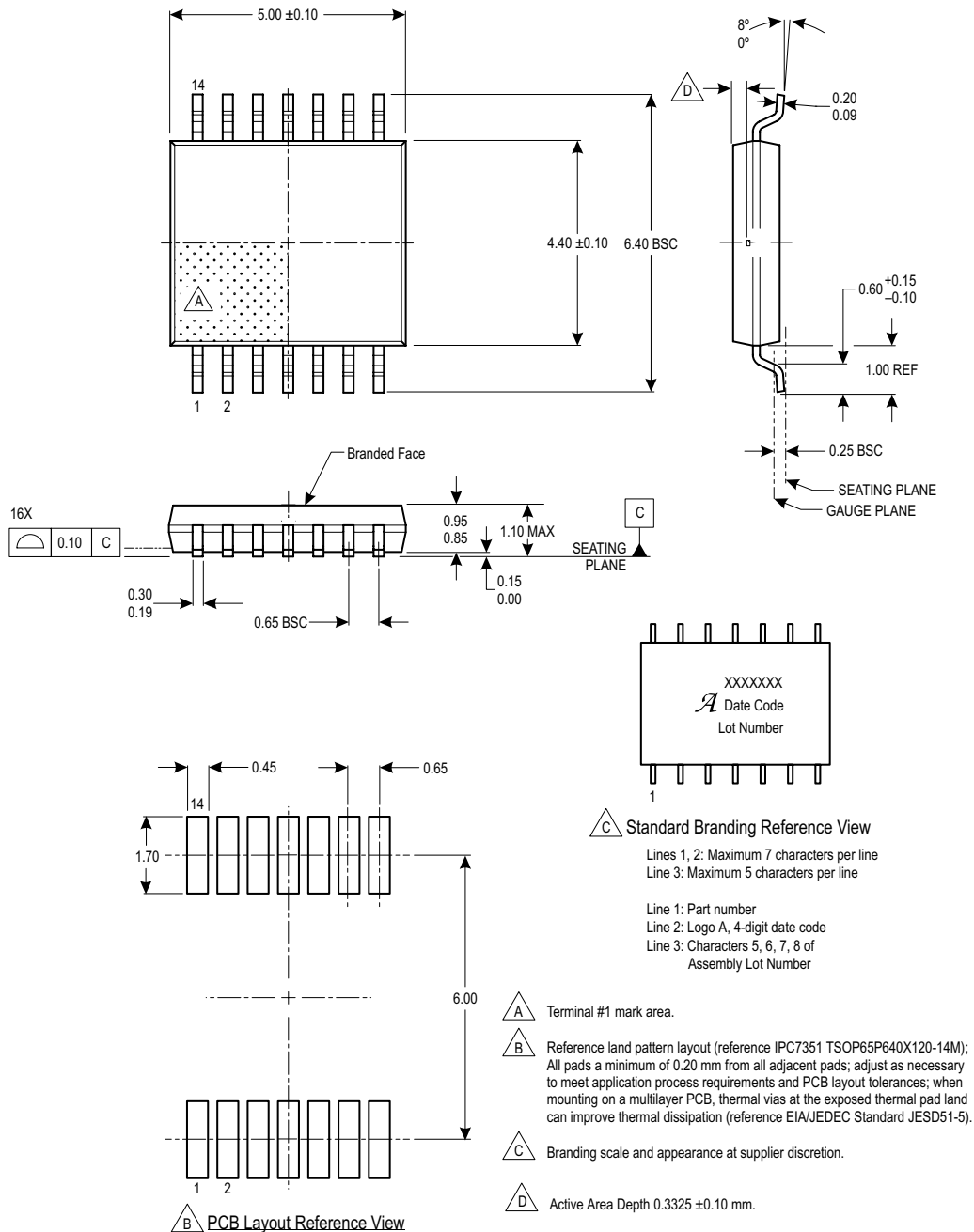
**For Reference Only – Not for Tooling Use**

(Reference Allegro DWG-0000381, Rev. 1 and JEDEC MO-153 AB-1)

Dimensions in millimeters – NOT TO SCALE

Dimensions exclusive of mold flash, gate burrs, and dambar protrusions

Exact case and lead configuration at supplier discretion within limits shown



**Figure 2: 14-Pin TSSOP Package**

## Revision History

Number	Date	Description
–	March 13, 2025	Initial release
1	April 22, 2025	Updated ASIL logo (page 1), Created short-form datasheet
2	January 9, 2026	Updated Functional Block Diagram (page 1), Operating Characteristics table (page 7, page 11), updated motorSENT table name (page 27), removed SPI Interface Timings Output table and updated Timing section (page 39), (pages 42, 43), added Programming Characteristics table (page 44), updated Read Command section (page 46), updated memory addresses (pages 49, 50), updated Address 0xF Temperature table and Temperature bit range (page 57), updated addresses and descriptions (page 87, 88)
3	February 6, 2026	Updated Supply Current characteristic (page 7); corrected OGA to offset autocalibration throughout; updated CRC Python code example (page 41); clarified $t_d$ , $t_b$ , and $T_{BIT}$ references (pages 44-45); updated OGA_AMP_DIS default to 1 (page 70); and removed Address 0x5B and 0x5D (pages 87-88).
4	March 5, 2026	Updated footnote 5 and added footnote 7 (page 7); updated address bits EUE [12], ESE [11], and SME [10] descriptions (page 56); updated D_TX_CK_PH_TRIM [25:22] descriptions (pages 69-70); minor editorial updates.

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