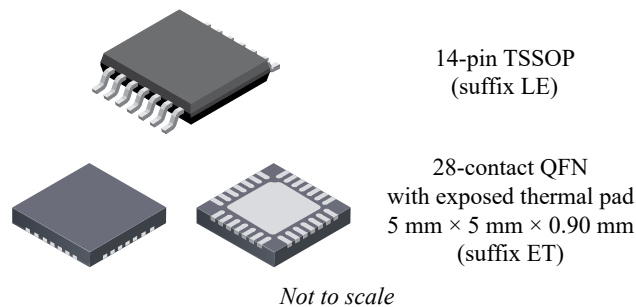


High-Speed Interface IC for Inductive Sensing with Digital Output

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
- Pending qualification for QFN package for industrial applications use from -40°C to 125°C ambient temperature.
- Includes on chip diagnostics to facilitate compliance with safety standards.

PACKAGES



DESCRIPTION

The A17803 is a high-accuracy, high-resolution inductive position sensor interface IC for industrial applications. The A17803 is optimized for use as a position sensor interface in encoders, servomotors, 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 a surface-mount lead (Pb) free 14-pin TSSOP package and a 28-contact $5\text{ mm} \times 5\text{ mm}$ QFN (suffix ET) package (SPI interface only).

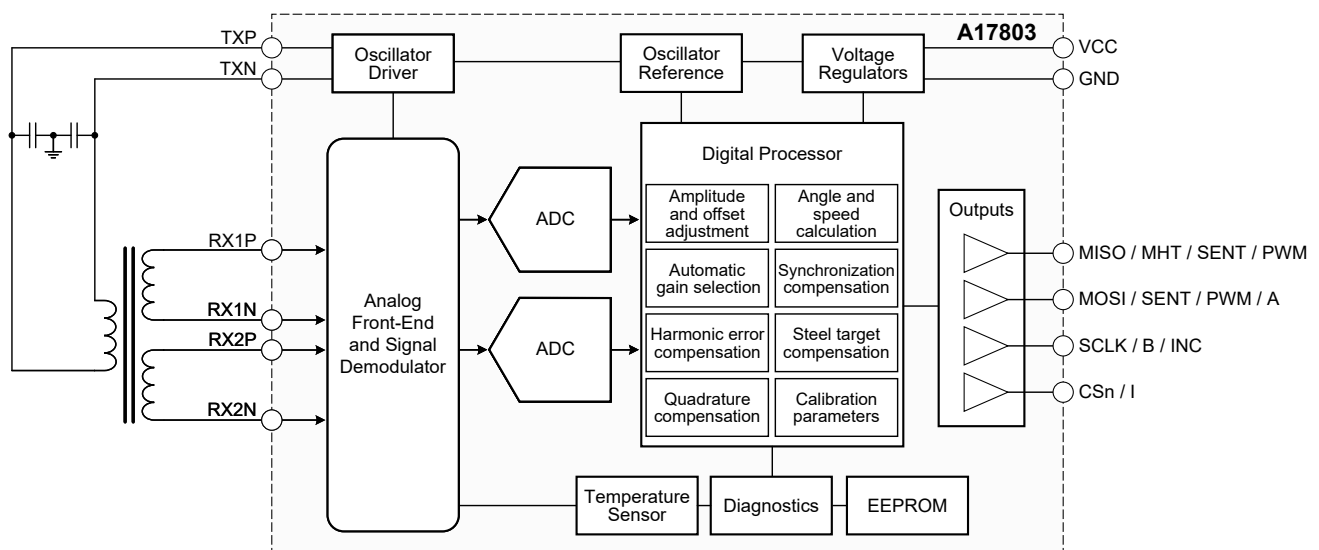


Figure 1: Functional Block Diagram

A17803N

High-Speed Interface IC for Inductive Sensing with Digital Output

SELECTION GUIDE

Part Number	Programming Interface	Output Interface	Package	Packing
A17803NKLEATR-M	Manchester	SENT, PWM, motorSENT, and ABI outputs	14-pin TSSOP	4000 pieces per 13-in reel
A17803NKLEATR-S	SPI	SPI	14-pin TSSOP	4000 pieces per 13-in reel
A17803NKETATR-S	SPI	SPI	28-contact QFN with exposed thermal pad	6000 pieces per 13-in reel



PACKAGE OUTLINE DRAWINGS

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

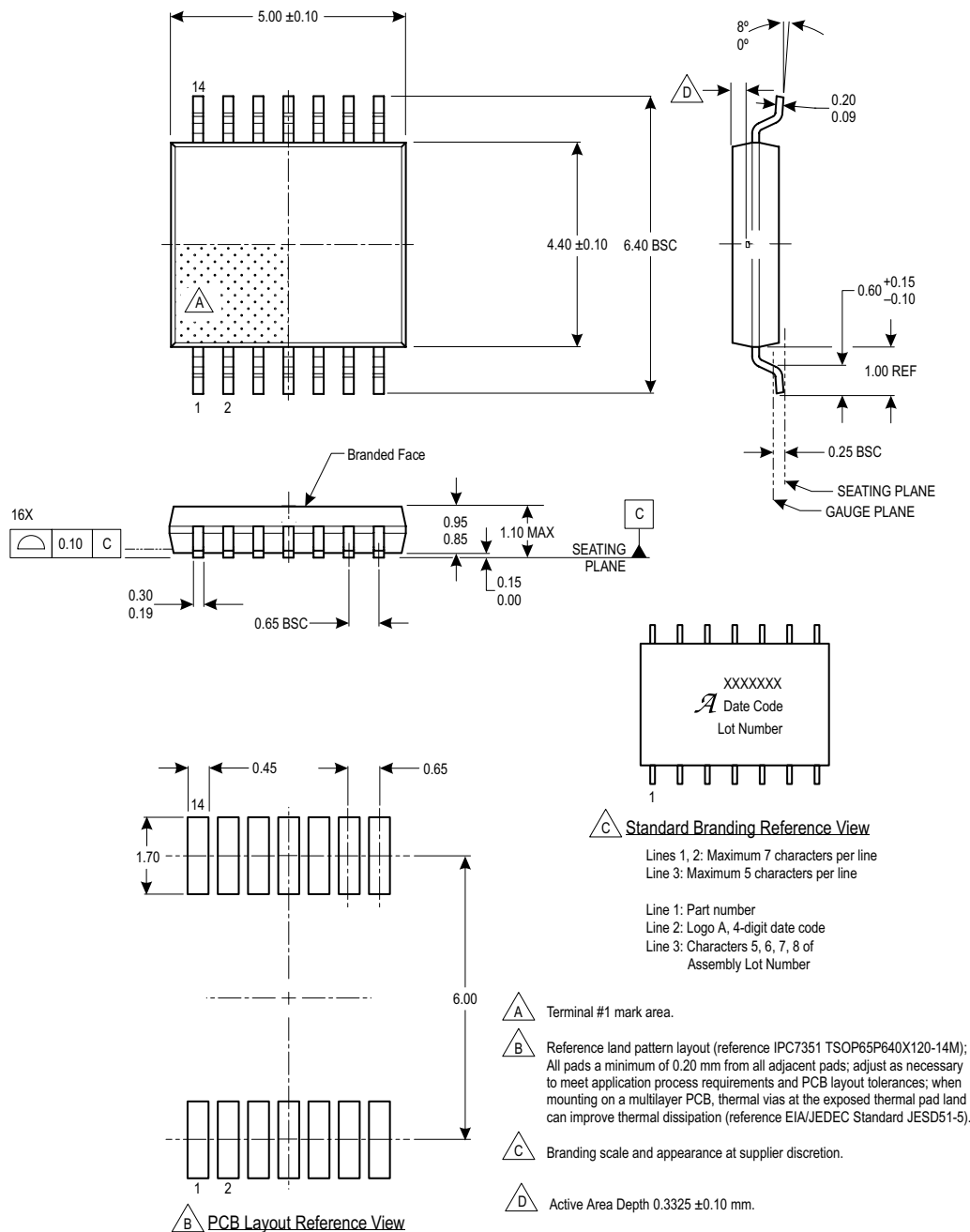


Figure 2: 14-Pin TSSOP Package

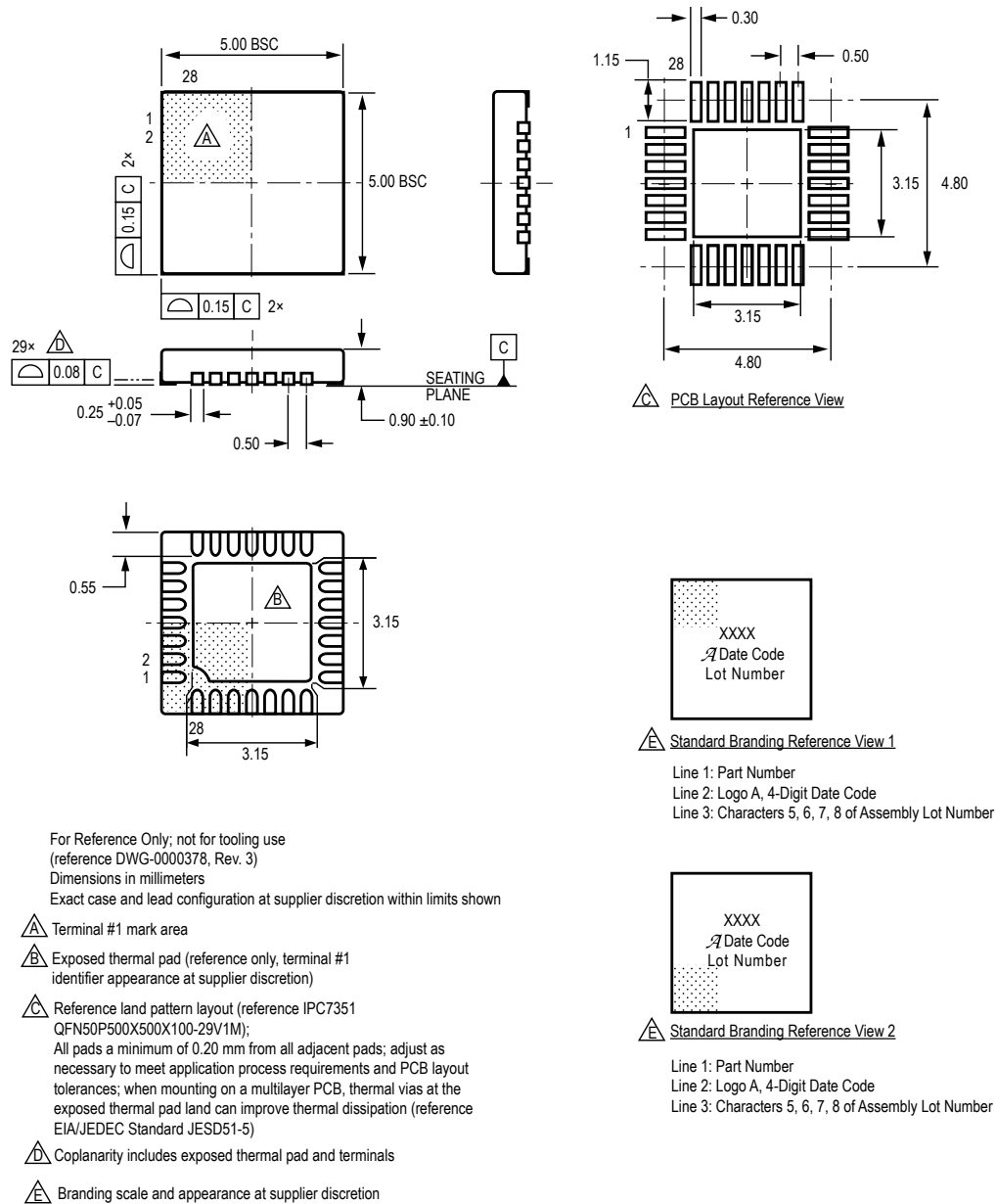


Figure 3: Package ET, 28-Contact QFN with Exposed Pad

Revision History

Number	Date	Description
–	March 16, 2026	Initial release
1	April 28, 2026	Updated selection guide (page 2), corrected terminal list table for ET package (page 6), updated supply current and overvoltage flag threshold low operating characteristics (page 8), and made minor editorial corrections (pages 12, 19, 28, 29, 47, 55, and 80)

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