Ultrasonic parking system

Ultrasonic sensor IC for driver assistance systems CA270/CA271

BOSCH
Invented for life

PRODUCT BENEFITS

- Optimal ultrasonic transducer frequency for best wave transmission
- Configurable wide range transducer current source
- 1-wire I/O interface
- Vast experience in components for parking systems

1 CA270/271

safe and comfortable

Supports precise measurements of distances

economical

1-wire interface for wire harness weight reduction

TASK

The CA270/CA271 is an evaluation IC for ultrasonic transducers. It is used for distance measurements in parking aid systems. The IC stimulates an external transceiver and provides the reflected signal via 1-wire I/O interface to the ECU.

FEATURES

- 1-wire I/O interface
- Modes: send and receive/receive only
- Configurable transducer current source
- Configurable reference ultrasonic curve
- Continuous driver transducer current monitoring
- Offset cancellation after power on
- Noise level estimation and compensation
- Storage capability by PROM and RAM
- Provision of status information

VARIANTS

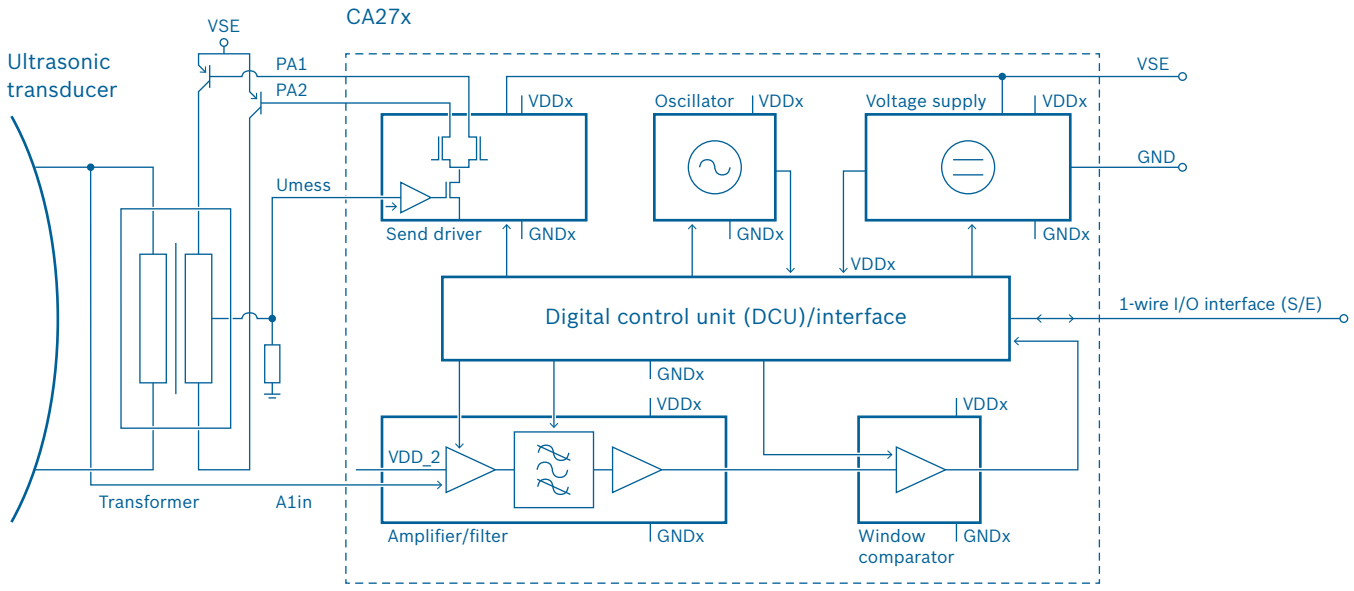
- CA270 – for up to 2.5 m applications
- CA271 – for up to 4.0 m applications

TECHNICAL CHARACTERISITCS

Ultrasonic transducer frequency	48 kHz
Operating temperature (T_A)	–40 °C...+100 °C
Storage temperature (T_S)	–55 °C...+125 °C
Max. driver voltage (V_{PAx})	25 V
Driver current (I_{PAx})	200 mA...500 mA (with external PNP)
Current consumption in receive mode	7 mA (type)
Package	QFN 5 × 5n (MLF28)

ELECTRICAL LIMITS

	Symbol	Min.	Max.	Unit
Supply voltage	VSE	–0.3	25	V
Strength of driver outputs PA1 and PA2	PAx	–0.3	25	V
Digital supply	VDDD	–0.3	3.6	V
Analog supply	VDDA	–0.3	3.6	V
Idle mode current consumption	IVSE		10	mA
Transmission current consumption	IPAx		500	mA
Impulse current	d IVSE		8	mA



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