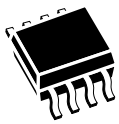
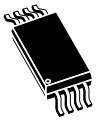
ST25DV02K-W1
ST25DV02K-W2

Dynamic NFC/RFID tag IC with 2-Kbit EEPROM with up to 2x pulse width modulation outputs

Data brief



SO8N (4.9 x 6 mm)



TSSOP8 (3 x 6.4 mm)

Features

Pulse width modulation outputs

- Up to 2x independent outputs
  - 1x PWM output with ST25DV02K-W1
  - 2x PWM outputs with ST25DV02K-W2
- From 488 Hz to 31250 Hz
- 62.5 ns pulse width resolution:
  - from 15-bit resolution at 488 Hz
  - to 9-bit resolution at 31.25 kHz
- Accuracy: ±10% over temperature range
- No need for external oscillator
- Supply voltage from 1.8 V to 5.5 V, independent from contactless interface
- Independent push-pull outputs
  - Up to 4 mA drive capability per output
  - Adjustable output drive for low power and low noise application
- Live update of PWM parameters controlled by contactless interface

Contactless interface

- Based on ISO/IEC 15693 and NFC Forum Type 5 Tag
- Supports all ISO/IEC 15693 modulations, coding, sub-carrier modes and data rates
- Single and multiple blocks read
- Internal tuning capacitance: 28.5 pF

Memory

- 2-kbits of EEPROM
- Accessible in blocks of 4x bytes
- 5 ms typical write time (one block)
- Data retention: 40 years
- Write cycles endurance:
  - 100k write cycles at 85 ºC

Data protection

- Up to 4 independent areas, including the PWM control area, with flexible protection mechanism based on 32/64-bits passwords
- System configuration: write protection by 32-bit password
- TruST25™ Digital signature mechanism for authentication

Temperature range

- From -40 °C to +85 °C (Contactless interface)
- From -40 °C to +105 °C (PWM interface)

Package

- 8-pin packages
- ECOPACK2® (RoHS compliant)

Description

The ST25DV02K-W1/W2 device is an NFC/RFID tag IC with PWM outputs.
It embeds an EEPROM memory of 2 Kbits, which can be divided for use-case flexibility.
The PWM output can be programmed independently and securely, allowing a large field of application. The IC provides live update of PWM parameters by contactless interface, extending the user experience.
The device can be operated from a 13.56 MHz RFID reader or any NFC mobile phone.
The contactless interface is based on ISO/IEC15693 and NFC Forum type 5 tag standards.

1 Revision history

Table 1. Document revision history

Date	Revision	Changes
16-Feb-2018	1	Initial release.
20-Feb-2018	2	Changed the document scope from ST Restricted to public

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.