

## Accessories

32001583

433.92 MHz 2-BUTTONS OOK HCS ROLLING CODE KEYFOB  
TRANSMITTER

## Datasheet



### Overview

HCS rolling code RF OOK transmitter, based on SAW resonator technology. Ideal for remote control application. By pressing the key the device transmits a unique coded data stream.

## Contents

<b>1. Product Features .....</b>	<b>3</b>
<b>2. Mechanical Dimensions .....</b>	<b>4</b>
<b>3. Electrical Characteristics .....</b>	<b>5</b>
3.1. Absolute Maximum Ratings .....	5
3.2. Operating Condition .....	5
3.3. ELECTRICAL CHARACTERISTICS @ 25 °C.....	5
3.4. Notes .....	5
3.5. HCS Radio Frame .....	6
3.5.1. Characteristics .....	6
3.5.2. Structure.....	6
3.5.3. Organization .....	6
<b>4. Typical Performance Characteristics .....</b>	<b>7</b>
<b>5. Operating mode .....</b>	<b>8</b>
<b>6. Regulatory Approvals .....</b>	<b>8</b>
<b>7. Revision History.....</b>	<b>8</b>

## 1. Product Features

### Mechanical highlights:

- ✓ Compact dimensions  
(60 x 32 x 11.3 mm)

### Security performances:

- ✓ HCS Rolling Code

### Low power characteristics:

- ✓ CR-2032 Li-Ion cell battery

### Additional features:

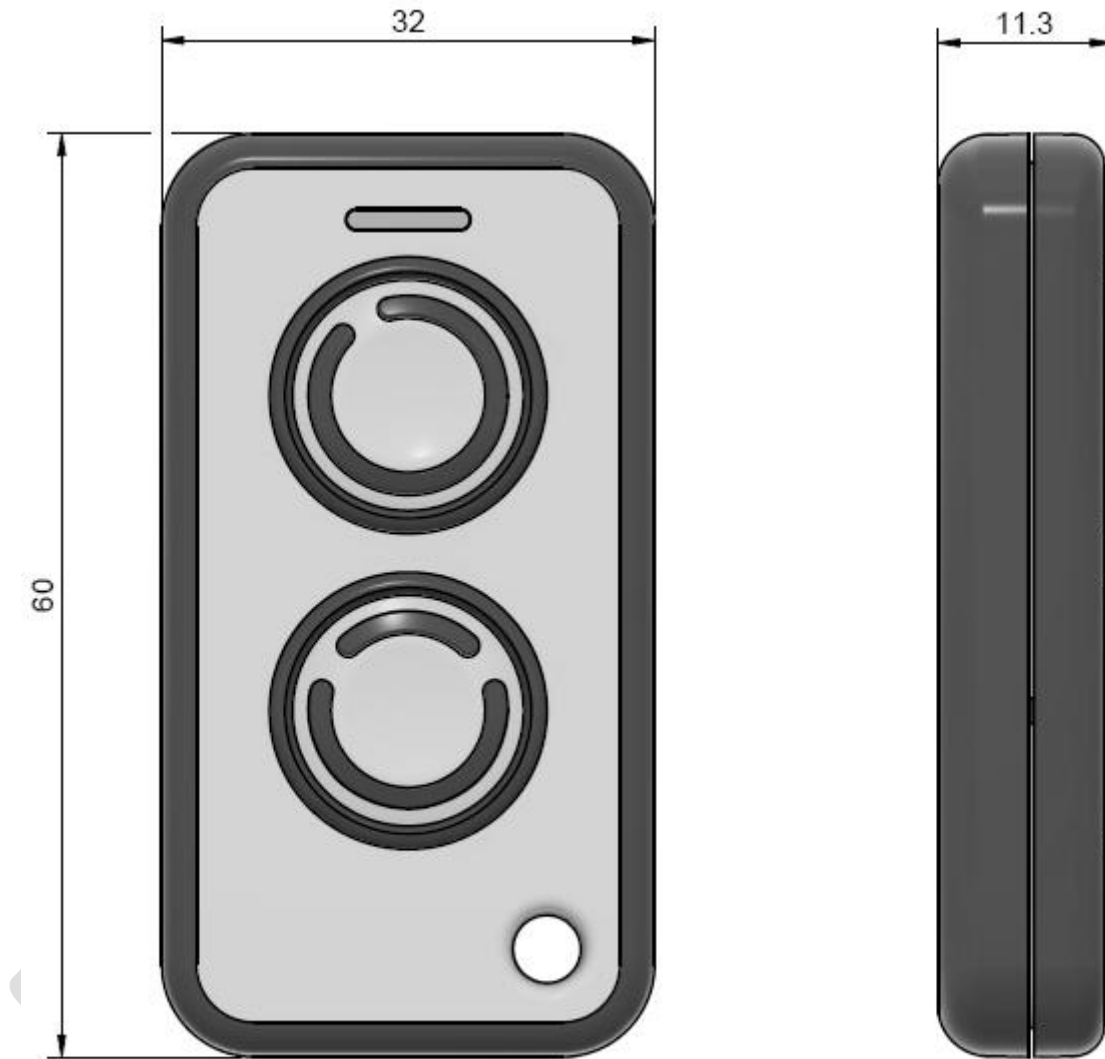
- ✓ Two functional buttons
- ✓ OOK modulation

General-purpose remote control and command applications.

Developed according to ETSI EN 300 220 European Standard, the keyfob meets with the Radio Equipment Directive (RED) 2014/53/EU.

Compliant with REACH and RoHS directives.

## 2. Mechanical Dimensions



DIMENSIONS IN MILLIMETERS



### 3. Electrical Characteristics

#### 3.1. Absolute Maximum Ratings

Parameter	Max.	Unit
Power Supply Voltage	4.0	V
Storage Temperature	-20 to 80	°C
Operating Temperature	-20 to 70	°C
Operating Relative Humidity	5 to 85	%

#### 3.2. Operating Condition

Power Supply Voltage 3 V, lithium not rechargeable battery type CR2032, Temperature 25 °C.

#### 3.3. ELECTRICAL CHARACTERISTICS @ 25 °C

Parameter	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	2.3	3.0	3.6	V	
Low Battery Alarm	-	2.3	-	V	
Stand-by Current Consumption	-	-	0.1	µA	
TX Current Consumption	-	13	-	mA	
Operating Band	433.050	-	434.790	MHz	1
Operating Frequency	-	433.920	-	MHz	1
Channel Bandwidth	-	300	-	kHz	
Frequency Error	-170	-	170	ppm	
ERP	-	-7	-	dBm	2
Occupied Bandwidth	-	50	-	kHz	2
Unwanted Spurious Emission	-	-	-35	dBm	3
Settling Time	-	200	-	ms	4

#### 3.4. Notes

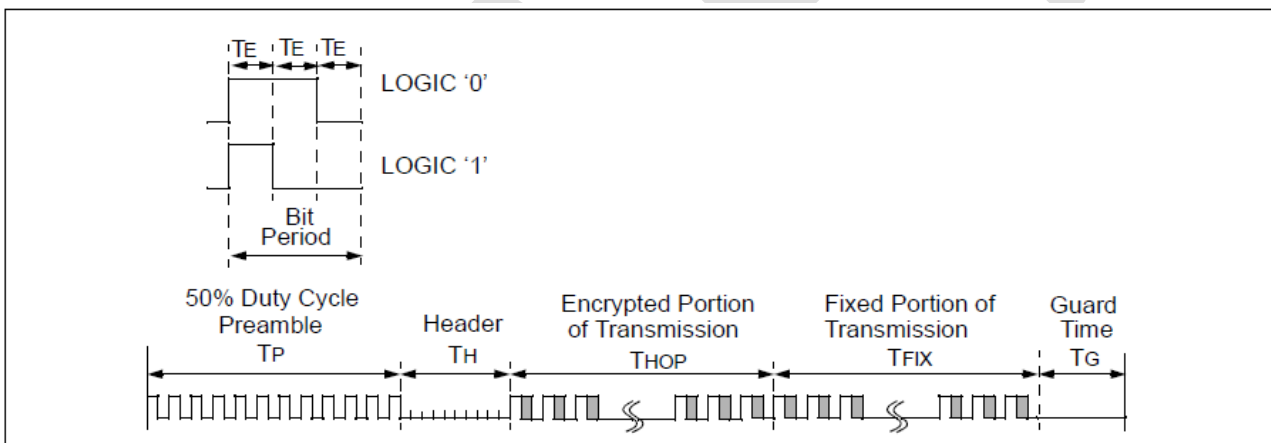
- 1) Operating band as per REC ERC 7003, Annex 1: *Frequency Band g1*. Operating band as per ETSI EN 300 220-2, Annex B: *Frequency Band H*.
- 2) Max ERP measured using operating frame; OOK modulation; time base 430 µs.
- 3) Measured as per ETSI EN 300 200-1, frequencies above 1 GHz. 2<sup>nd</sup> harmonic below -36 dBm.
- 4) Time for valid data transmission after pressing a button.

### 3.5. HCS Radio Frame

#### 3.5.1. Timing Characteristics

Parameter		Min.	Typ.	Max.	Unit
Time base	$T_E$	350	400	450	$\mu s$
Bit Period	$3 \times T_E$	1050	1200	1350	$\mu s$
Preamble	$T_P$	8.0	9.2	10.4	ms
Header	$T_H$	3.5	4.0	5.4	ms
Data	$T_{HOP} + T_{FIX}$	69.3	79.2	89.1	ms
Pause between frames (guard time)	$T_G$	14.0	18.0	22.0	ms
Bit rate		740	833	950	Bit/s

#### 3.5.2. Structure

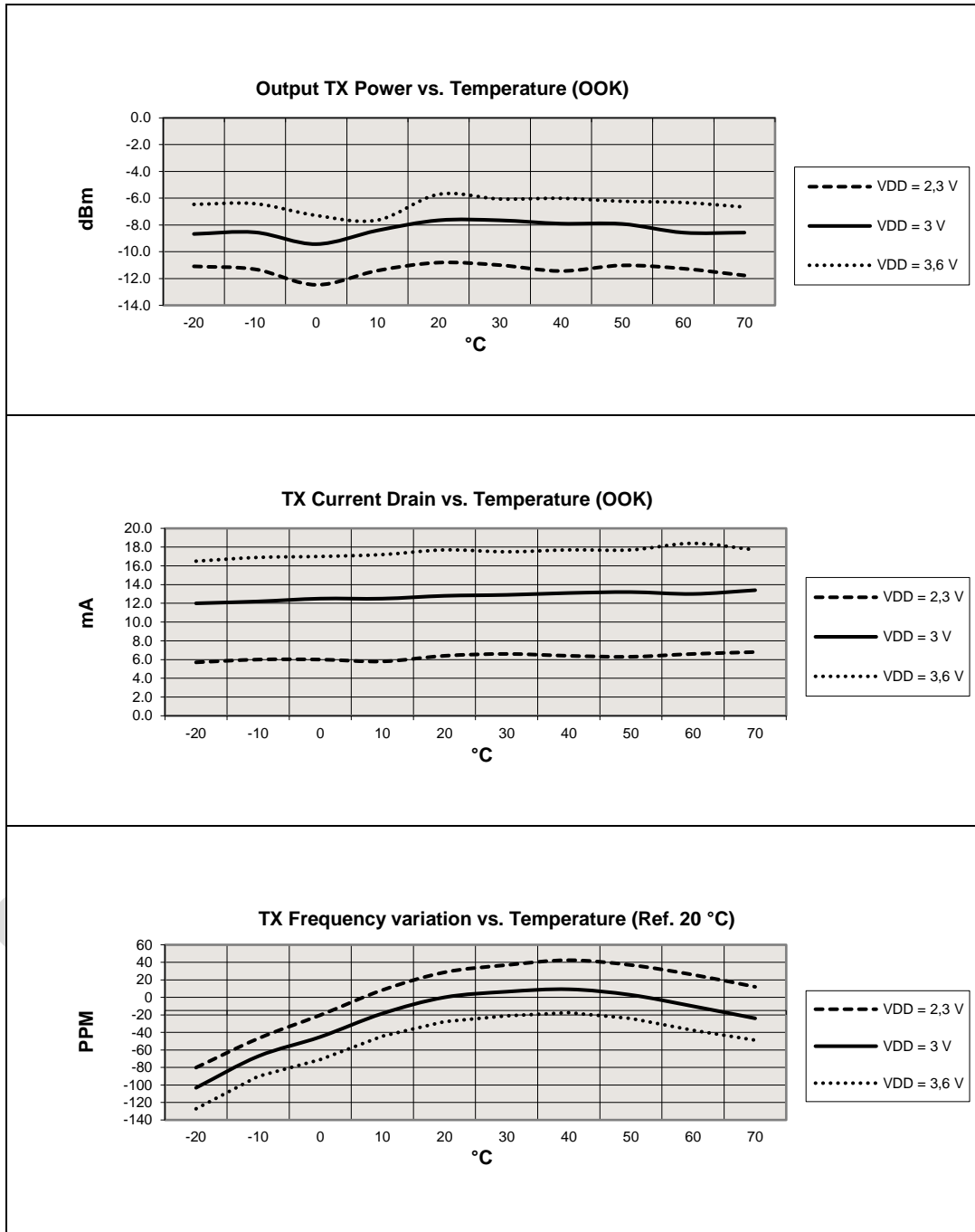


#### 3.5.3. Organization

MSb	34 bits of Fixed Portion								32 bits of Encrypted Portion						LSb
	Repeat (1 bit)	VLOW (1 bit)	Button Status (*)				Serial Number (28 bits)	Button Status (*)				OVR (2 bits)	DISC (10 bits)	Sync Counter (16 bits)	
S2			S1	S0	S3	S2		S1	S0	S3					

(\*): only S0 and S1 buttons are used.

## 4. Typical Performance Characteristics



## 5. Operating mode

The LED lights up with fixed light during the code transmission. The LED will flash during transmission if the battery is exhausted: **replace the battery**.

## CAUTION!

**Danger of explosion if the battery is replaced with non-approved type (CR2032).** For disposal of the battery, comply with regulations in force.

## 6. Regulatory Approvals

Title	Description	Document
Declaration of Conformity	Declaration of the conformity with the essential requirements of the European Directive 2014/53/EU	

## 7. Revision History

Revision	Date	Description
0.0	04.10.2023	Draft