AK3713

1chip Remote Keyless Entry Transmitter

1. General

The AK3713 is a RF transmitter for Key-FOB of Remote Keyless Entry system (RKE). It can generate a message according to switch input without external micro controller, and transmit RF signal in 300MHz or 400MHz band.

Messages for Switch action are designed freely in EEPROM by users. It is based on AKM TX Descriptor technology.

2. Features

- 1chip RF transmitter
  - Key-FOB can be built by the AK3713 and a few passive parts.
  - Without making program, the AK3713 operates by just writing the format of message to internal EEPROM.
- High security
  - Employing AES-128 and Rolling counter method, RKE system achieves high security.
- Low power consumption
  - Switch input wait mode with super low power consumption, it saves the power of a button battery.
- Variety of switch action
  - Normal click, Long push, Push and Hold, Tapping, and multi-push patterns are available.
  - Messages are generated for each switch action.
  - Message formats can be defined by users arbitrarily.
- RF transmit function
  - High power +8dBm (typ.) transmission with low power consumption.
- Modulation method
  - ASK / FSK, data-rate and modulation parameter are selectable.
- Encode method
  - Manchester and Bi-phase method are available.
- Others
  - Two LED lightning
  - Battery monitor. When the power supply voltage becomes less than 2.3V (typ.), the AK3713 can transmit a message to a receiver that the power supply voltage is falling. In addition, when the power supply becomes less than 1.95V (typ.), the AK3713 automatically shifts to a sleep mode. In that case the AK3713 does not transmit a message.

3. Block Diagram

Power supply and ground pins are not included.

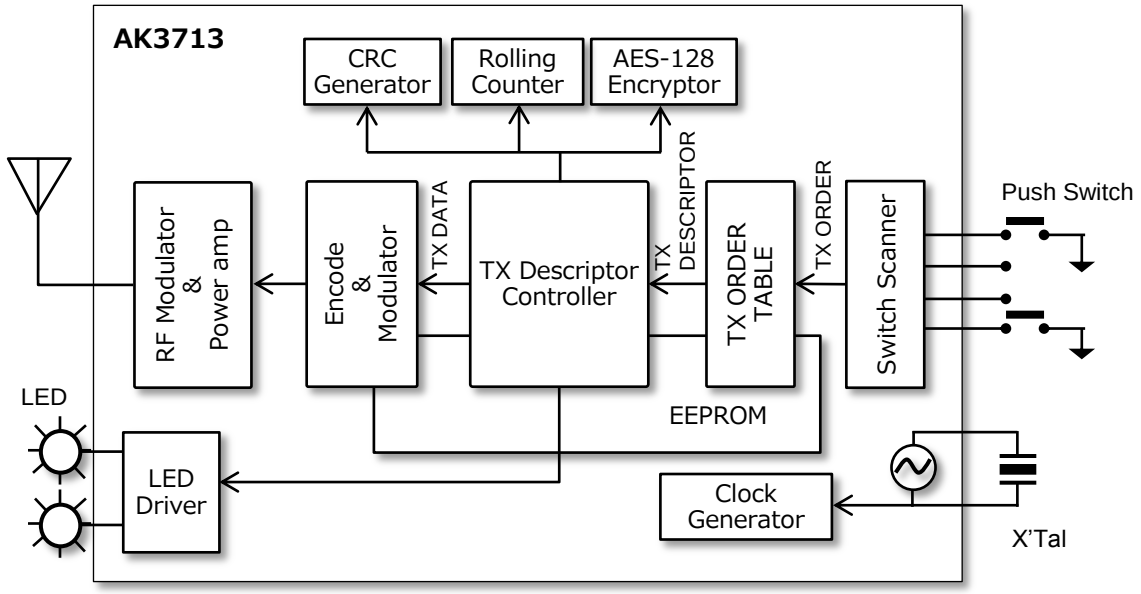


Figure 1 Block Diagram

Main blocks

a) RF Modulator & Transmitter
This block outputs RF signal after ASK or FSK modulation.

b) Clock Generator
This block generates a reference clock with external X'TAL.

c) Switch Scanner
This block detects switch actions.

d) TX Descriptor Controller
This block picks up a descriptor of a message from EEPROM.

e) LED driver
This block lights LED when switch action is detected.

f) EEPROM
EEPROM holds TX descriptors, Rolling counter, RF parameters, and others.

4. Package

4.1. Outline Dimensions

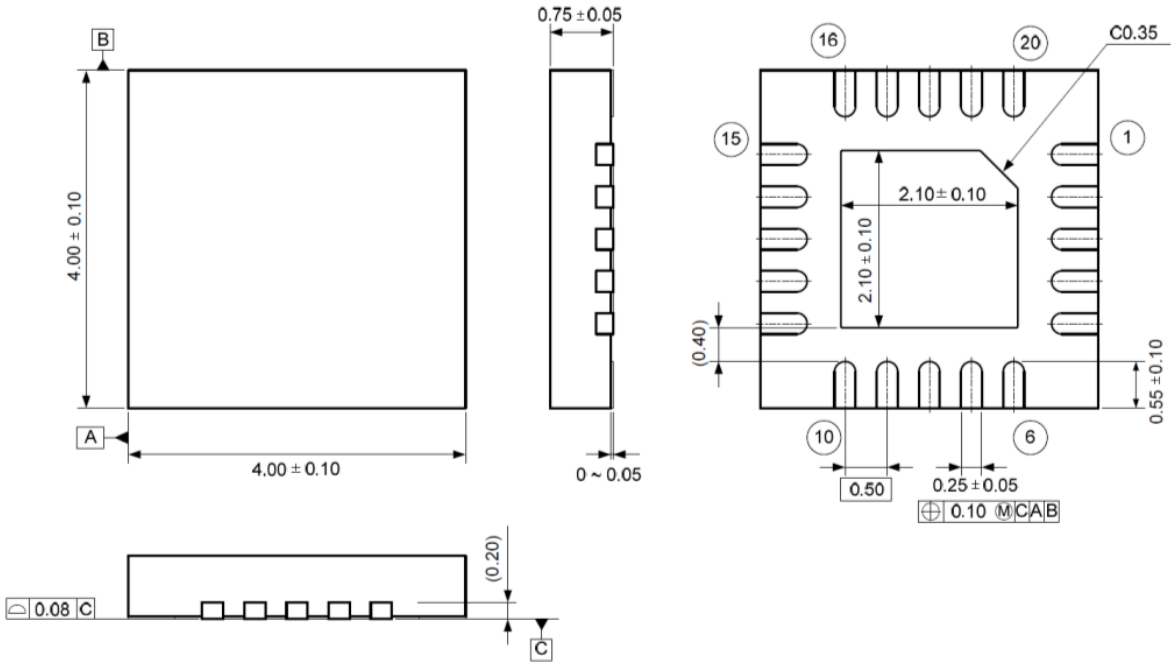
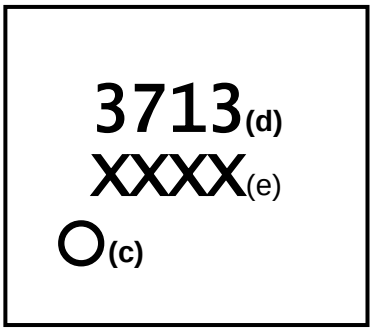


Figure 2 Package outer dimensions

4.2. Marking



a. Style : QFN
b. Number of pins : 20pins
c. A1 pin marking : Circle
d. Product number : 3713
e. Date code : XXXX (4 digits)

Figure 3 Marking

5. Explanation of Important Matters

Thank you for your access to AKM product information.
More detail product information is available,
Please contact our sales office or authorized distributors.

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