

KEELOQ[®] Code Hopping Transponder Product Brief*

FEATURES

Security

- Programmable 28/32-bit serial number
- Two programmable 64-bit encryption keys
- Each transmission is unique
- 67-bit transmission length
- 32-bit hopping code
- 35-bit nonencrypted part (28/32-bit serial number, 4/0-bit function code, 1-bit battery low, 2-bit CRC)
- Encryption keys are read protected
- 16/32-bit bi-directional challenge and response using one of two keys
- 60-bit seed used for secure learning

Operating

- 2.0V to 6.6V operation
- Three switch inputs [S2,S1,S0]—seven functions
- Battery-less transponder (requires external inductor and capacitors).
- Selectable baud rate and code blanking
- Selectable automatic code word completion
- Battery low signal transmitted
- Nonvolatile synchronization
- PWM and Manchester modulation

Other

- Easy to use programming interface
- On-chip EEPROM
- On-chip tunable oscillator and timing components
- 64-bit user EEPROM
- 8-pin PDIP/SOIC and die

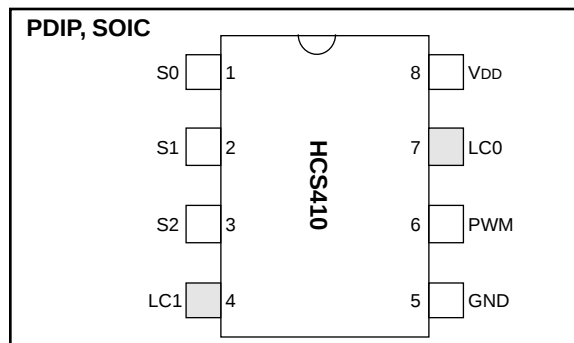
Typical Applications

- Automotive remote entry systems
- Automotive alarm systems
- Automotive immobilizers
- Gate and garage openers
- Electronic door locks (Home/Office/Hotel)
- Burglar alarm systems
- Proximity access control

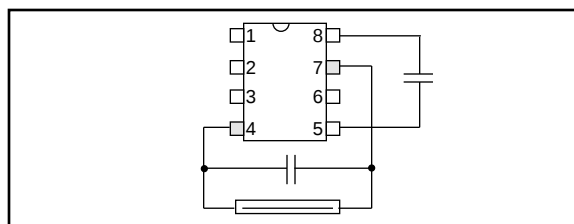
DESCRIPTION

The HCS410 is a code hopping transponder device designed for secure entry systems. The HCS410 utilizes the patented KEELOQ code hopping system and bi-directional challenge-and-response for logical and physical access control. High security learning mechanisms make this a canned solution when used with the

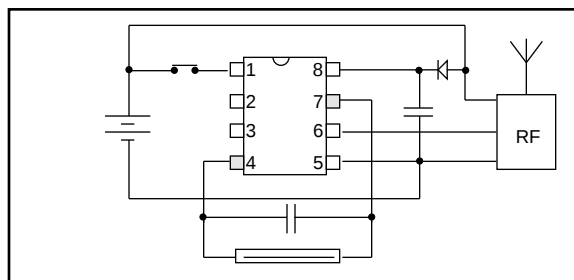
PACKAGE TYPES



TRANSPONDER CIRCUIT



COMBINED TRANSMITTER/TRANSPONDER CIRCUIT



KEELOQ decoders. The transmitter keys and synchronization information are stored in protected on-chip EEPROM.

A low cost battery-less transponder can be implemented with the addition of an inductor and two capacitors (LC0 and LC1). A packaged module including the inductor and capacitor will also be offered.

A single HCS410 can be used as an encoder for Remote Keyless Entry (RKE) and a transponder for immobilization in the same circuit and thereby dramatically reducing the cost of hybrid transmitter/transponder circuits.

KEELOQ is a registered trademark of Microchip Technology Inc.

* Code hopping patents issued in Europe, U.S.A., and R.S.A. Patent Numbers – U.S.A.: 5,517,187; Europe: 0459781.

HCS410

HCS410 Product Identification System

To order or to obtain information, e.g., on pricing or delivery, please use the listed part numbers, and refer to the factory or the listed sales offices.

HCS410	—	/P	
			Package:
			P = PDIP (300 mil Body), 8-lead
			SO = SOIC Plastic SOIC (150 mil Body), 8-lead
			Temperature Range:
			Blank = 0°C to +70°C (T for tape/reel)
			I = -40°C to +85°C (S for tape/reel)
			Device:
			HCS410 Code Hopping Transponder
			HCS410T Code Hopping Transponder (Tape and Reel)

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