

DESCRIPTION

The PT4306 is a compact, fully integrated OOK/ASK receiver with ± 4 KV ESD (HBM) and ± 1 KV ESD (CDM) protections for 433.92 MHz frequency band, and just requires few external components. The PT4306 consists of a low-noise amplifier (LNA), image-rejection mixer (IRM), built-in channel-select filter (CSF), OOK/ASK demodulator, data filter, and data slicing comparator. The local oscillator (LO) sub-system incorporates a monolithic VCO, ± 32 feedback divider, loop filter and fast start-up reference oscillator to form a complete phase-locked loop-based frequency synthesizer for single channel applications.

The PT4306 is available in an 8-pin SOP package and is specified over the temperature range from -40 to $+85$ °C.

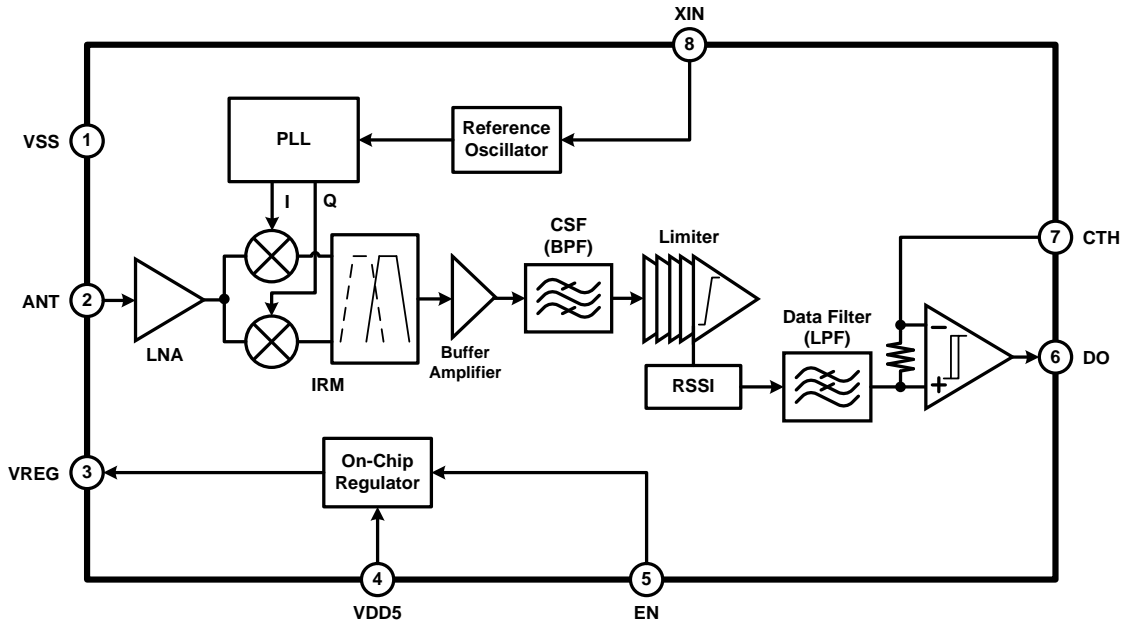
FEATURES

- Normal operating of 4.6 mA at 433.92 MHz
- Requires few external components
- Achieves sensitivity of -112 dBm (peak ASK signal level)
- Supply voltage range: 2.4 to 5.5 V
- Supports data rates up to 10 Kb/s
- Wide input dynamic range with automatic gain control handling
- Image-rejection ratio of 25 dB
- ESD protection levels up to ± 4 KV HBM, ± 400 V MM and ± 1 KV CDM

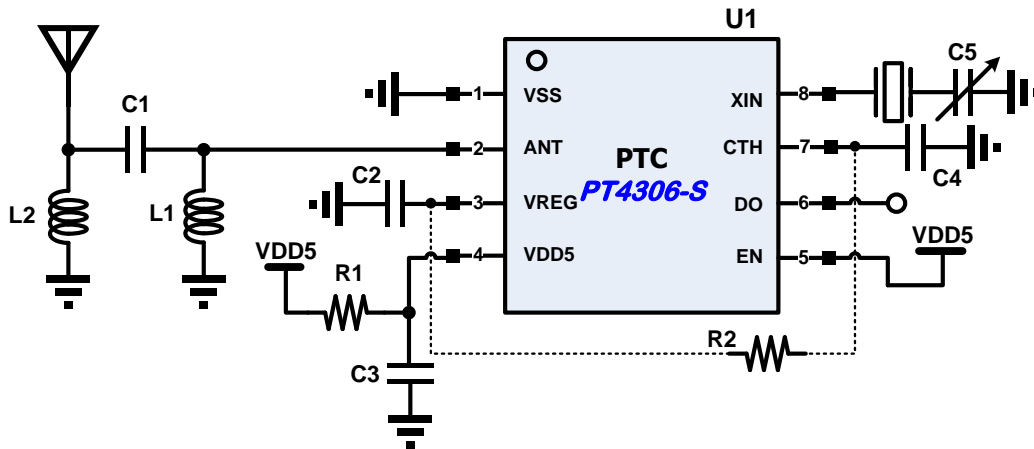
APPLICATIONS

- Automotive Remote Keyless Entry (RKE)
- Remote control
- Garage door and gate openers
- Suitable for applications that must adhere to either the European ETSI-300-220 or the North American FCC (Part 15) regulatory standard.

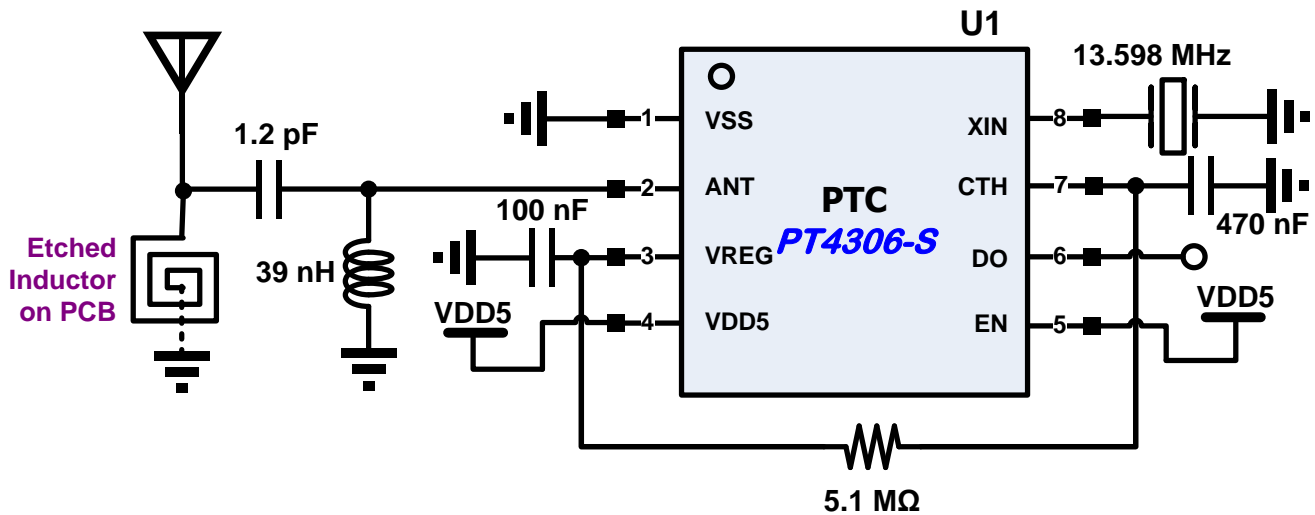
BLOCK DIAGRAM



EVALUATION BOARD SCHEMATIC



433.92MHZ APPLICATION EXAMPLE



BILL OF MATERIALS

Part	Value	Unit	Description
L1	39 n	H	Antenna input matching, coil inductor
L2	56 n	H	Antenna ESD protection, coil inductor (optional)
C1	1.2 p	F	Antenna input matching
C2/C3	100 n	F	Power supply de-coupling capacitor
C4	470 n	F	C _{TH} , affects coding type and start-up time
C5	220 p	F	Dependent upon crystal vendor; for frequency fine-tuning (optional)
R1	10	Ω	Power supply de-coupling resistor (optional)
R2	5.1M	Ω	For reducing data output noise (optional)
X1	13.598	MHz	Crystal with C _{Load} = 220 pF, for reference oscillator
U1	PT4306 IC	U1	Receiver chip

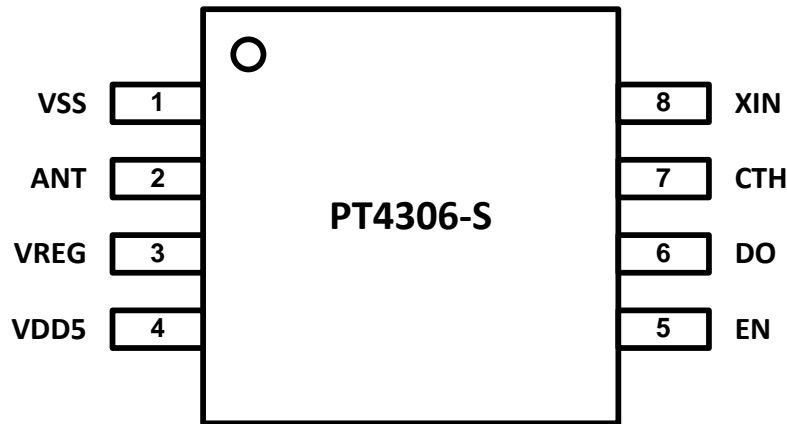
Note:

- L1 and C1 are the components for input matching network. They may need to be adjusted for different PCB layout and antenna requirements.
- The value of C4 depends upon the data rate and coding pattern.**
- The *optional* components may be used depending upon specific application requirements, e.g. C5 can be removed if the crystal oscillator operates at the accurate frequency .

ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT4306-S	8 Pins, SOP, 150 mil	PT4306-S

PIN CONFIGURATION



PIN DESCRIPTION

Pin No. SOP8	Pin Name	I/O	Description
1	VSS	G	Ground
2	ANT	I	RF input connected to antenna via a matching network
3	VREG	P	Regulated core voltage
4	VDD5	P	5 V regulator input
5	EN	I	Chip enable (tie HIGH to enable the chip)
6	DO	O	Data output
7	CTH	I/O	Connection for data slicing threshold capacitor
8	XIN	I	Reference oscillator input

IMPORTANT NOTICE

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Princeton Technology Corp.
2F, 233-1, Baociao Road,
Sindian Dist., New Taipei City 23145, Taiwan
Tel : 886-2-66296288
Fax: 886-2-29174598
<http://www.princeton.com.tw>

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