

DESCRIPTION

The PT4308 is a compact, fully integrated OOK / ASK receiver with ± 4 KV ESD (HBM) protection for 433.92 MHz frequency band and requires few external components. The PT4308 consists of a low-noise amplifier (LNA), an image-rejection mixer (IRM), a built-in channel-select filter (CSF), an OOK / ASK demodulator, a data filter, and a data slicing comparator. The local oscillator (LO) sub-system incorporates a monolithic VCO, a $\div 32$ feedback divider, a loop filter and a fast start-up reference oscillator to form a complete phase-locked loop-based frequency synthesizer for single channel applications.

The PT4308 is available in an 8-pin SOP package and is specified over the temperature range from -40 to $+85$ °C.

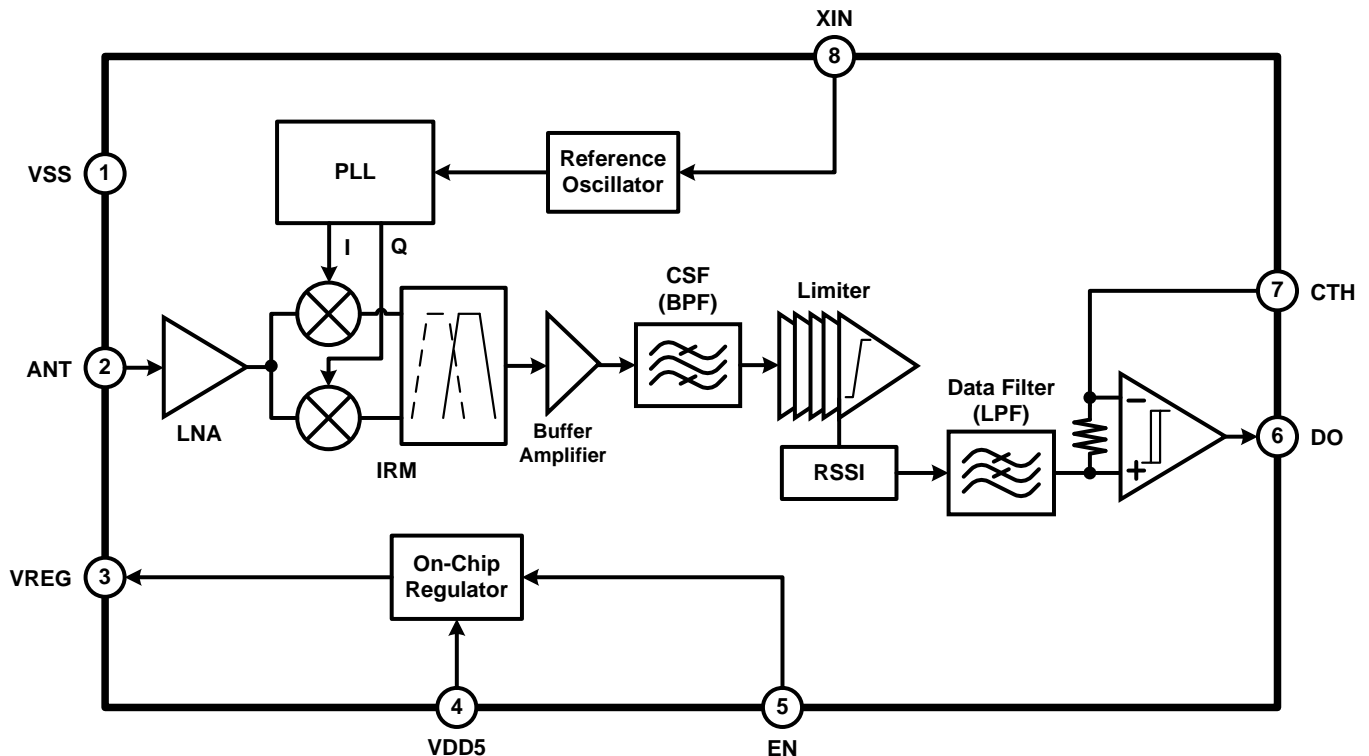
FEATURES

- Normal operating of 4.3 mA at 433.92 MHz
- Requires few external components
- Achieves sensitivity of -114 dBm (peak ASK signal level)
- Supply voltage range: 2.1 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 level up to ± 4 KV for HBM, ± 400 V for MM and ± 1 KV for CDM

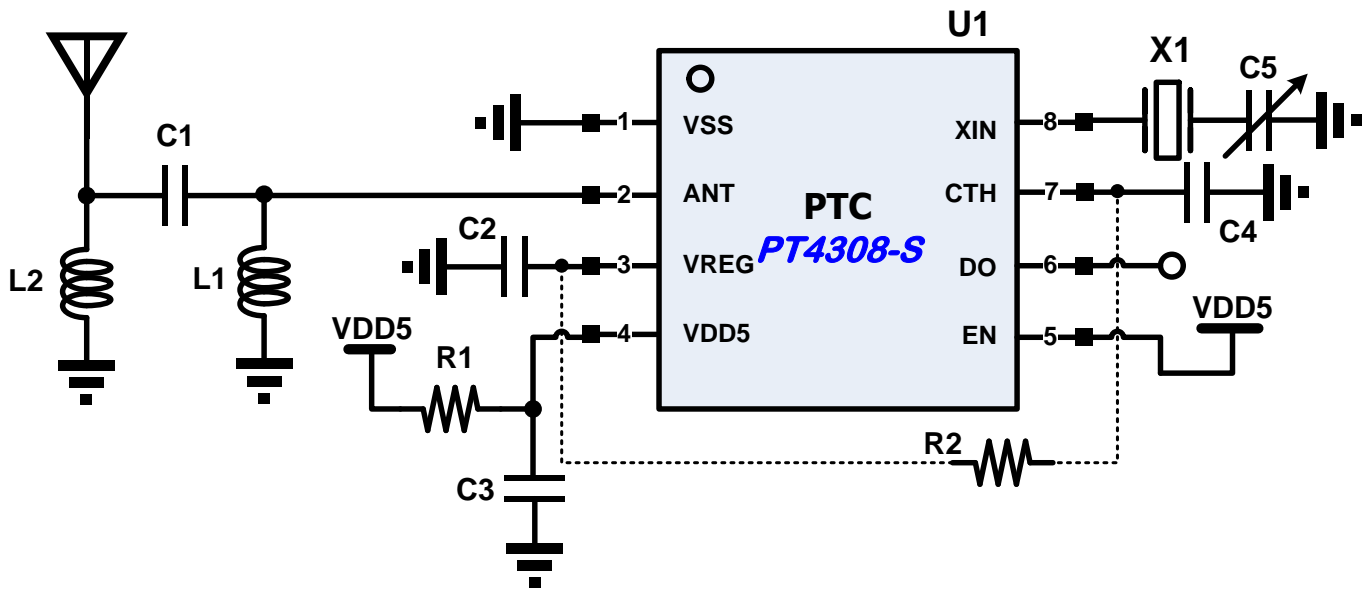
APPLICATIONS

- 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 standards

BLOCK DIAGRAM



EVALUATION BOARD SCHEMATIC



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 (<i>optional</i>)
C1	1.5 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 oscillator vendor; for frequency fine-tuning (<i>optional</i>)
R1	10	Ω	Power supply de-coupling resistor (<i>optional</i>)
R2	5.1 M	Ω	For reducing data output noise (<i>optional</i>)
X1	13.598	MHz	Crystal with $C_{Load} = 220 \text{ pF}$, for reference oscillator
U1	PT4308 IC	U1	Receiver chip

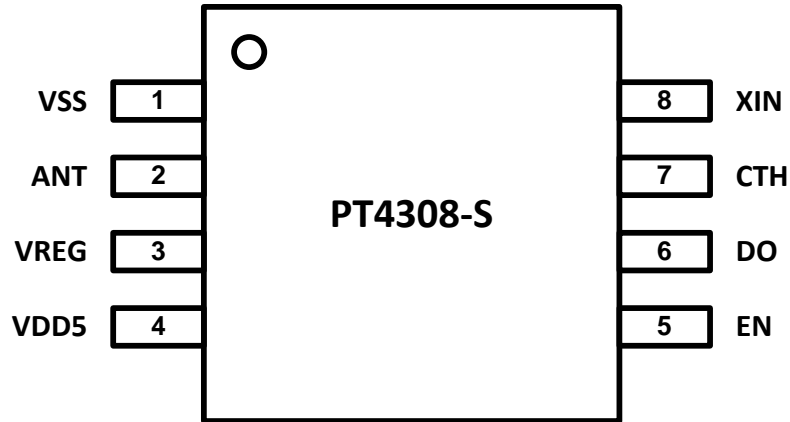
Notes:

- 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.

ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT4308-S	8 Pins, SOP, 150 mil	PT4308-S

PIN CONFIGURATION



PIN DESCRIPTION

Pin No.	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

Princeton Technology Corporation (PTC) reserves the right to make corrections, modifications, enhancements, improvements, and other changes to its products and to discontinue any product without notice at any time.

PTC cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a PTC product. No circuit patent licenses are implied.

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