

DESCRIPTION

PT4456 is a high performance FSK transmitter for the Remote Keyless Entry (RKE) systems. It consists of a power amplifier, one-shot circuit and phase-locked loop with internal voltage controlled oscillator and loop filter. The one-shot circuit control the phase-locked loop and power amplifier to have fast start-up time in operation.

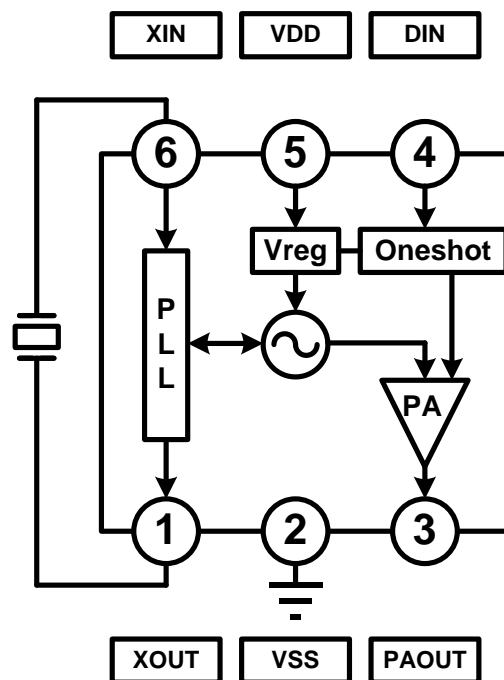
FEATURES

- Highly integrated FSK transmitter
- High output power, 3 V /+11 dBm / 17 mA
- Low supply voltage, 2.2 V to 3.6 V operation range
- Low external component cost.
- PLL-based transmitter with frequency range from 300MHz to 450MHz
- On-chip one-shot circuit
- SOT23-6 package

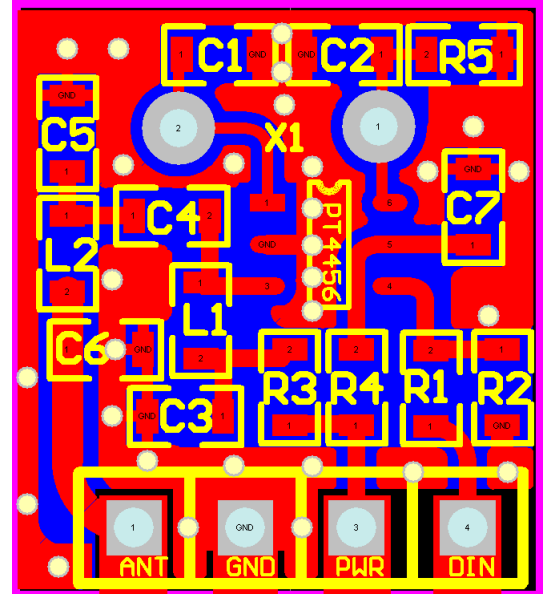
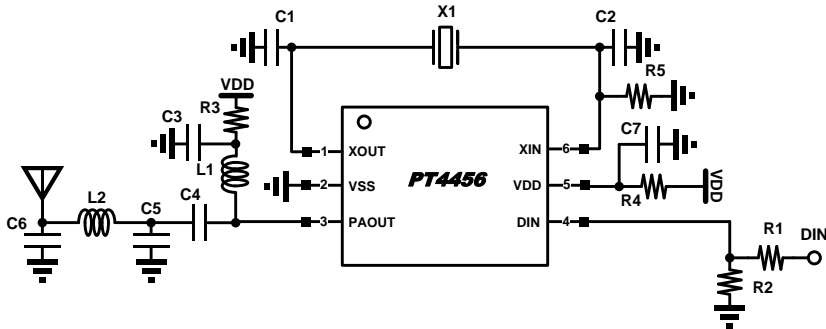
APPLICATIONS

- Keyless entry systems
- Remote control systems
- Garage door openers
- Alarm systems
- Security systems
- Wireless sensors

BLOCK DIAGRAM



APPLICATION CIRCUIT



BILL OF MATERIALS

Part	Value		Unit	Notes
	315MHz	433.92MHz		
X1	9.84175M	13.558M	Hz	3,4,5
R1	10K	10K	Ω	
R2	100K	100K	Ω	
R3	0	0	Ω	
R4	10	10	Ω	
R5	560K	560K	Ω	3
C1	10p	10p	F	1,5
C2	10p	10p	F	1,5
C3	1µ	1µ	F	
C4	220p	220p	F	
C5	8.2p	4.7p	F	2
C6	18p	10p	F	2
C7	2.2µ	2.2µ	F	
L1	180n	180n	H	
L2	33n	27n	H	2

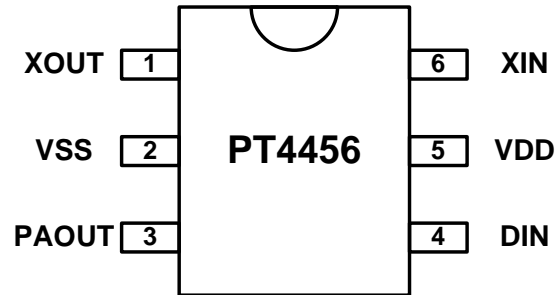
Notes:

1. C1/C2 can be used to trim the transmitted signal frequency for matching the specified value.
2. L2/C5/C6 value will depend on PCB layout.
3. The recommend maximum ESR value of X1 is 40Ω. To populate R5 over XIN will help to maintain good oscillation in high X1 ESR.
4. For FSK application to have adequate frequency deviation, and accurate carrier frequency, the crystal resonator frequency will be lower than the specified value. The recommended crystal resonator frequency is 9.84175MHz and 13.558MHz.
5. For higher X1 ESR, load capacitor C2 can be reduced or removed to maintain good oscillation. In narrowband application with accurate frequency requirement, trimming the C1 capacitor or change the crystal resonator frequency is suggested.
6. The PCB layout is scaled to get good reading. The actual PCB size is about 1.1x1.3 cm

ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT4456	6 Pins, SOT23	PT4456

PIN CONFIGURATION



PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.
XOUT	O	Oscillator output	1
VSS	G	Ground connection	2
PAOUT	O	Power amplifier output	3
DIN	I	Data input	4
VDD	P	Power supply	5
XIN	I	Oscillator input	6

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