



SANYO Semiconductors

DATA SHEET

LV2257PTT

— Bi-CMOS IC
434MHz Band FSK/ASK
Wireless Transmitter IC

Overview

The LV2257PTT is a 434MHz band FSK/ASK wireless transmitter IC.

Features

- Operating frequency range: 430 to 450MHz
- Miniature package: MSOP10 (0.5mm lead pitch)

Functions

- PLL circuit
- VCO
- Power amplifier
- FSK/ASK mode switching
- Transmitter output level switching

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		4.5	V
Maximum input voltage	V_{IN} max		$V_{CC}+0.3$	V
Maximum output voltage	V_{OUT} max		$V_{CC}+0.3$	V
Allowable power dissipation	P_d max	$\leq 85^\circ\text{C}$, Mounted on a circuit board*	115	mW
Operating temperature	T_{opr}		-40 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^\circ\text{C}$
Recommended operating supply voltage range	V_{CC}		2.0 to 3.5	V

*: Circuit board: 20×10×0.8mm paper phenolic printed circuit board

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LV2257PTT

Electrical Characteristics at $T_a = +25^\circ\text{C}$, $V_{CC} = 3.0\text{V}$, no modulation

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain 1	I_{CCO}	$F_{VCO} = 434\text{MHz}$, when the transmitter output is 0dBm		7		mA
Current drain 2	I_{CCPS}	Power saving mode		1	100	nA
VCO frequency range	F_{VCO}		430		450	MHz
Crystal oscillator frequency range	F_{Xtal}	$V_{Xtal} = -6\text{dBm}$	25		30	MHz
Charge pump current	I_{CP}	$V_{CP} = 1.5\text{V}$		± 100		μA

Transmitter Output at $T_a = +25^\circ\text{C}$, $V_{CC} = 3.0\text{V}$, no modulation, $F_{VCO} = 434\text{MHz}$, 50Ω termination

Parameter	Symbol	Conditions	Ratings			unit
			min	typ	max	
Transmitter output 1	$TxPwr1$	When the pin 6 resistor is $10\text{k}\Omega$	-11.5	-10	-8.5	dBm
Transmitter output 2	$TxPwr2$	When the pin 6 resistor is $4.7\text{k}\Omega$	-1.5	0	1.5	dBm
Transmitter output 3	$TxPwr3$	When the pin 6 resistor is $1\text{k}\Omega$	+8	+10	+12	dBm
[$T_a = 25^\circ\text{C}$, $V_{CC} = 2.2\text{V}$, no modulation, $F_{VCO} = 434\text{MHz}$, 50Ω termination]						
Transmitter output 4	$TxPwr4$	When the pin 6 resistor is $4.7\text{k}\Omega$	-2.5	-1	0.5	dB

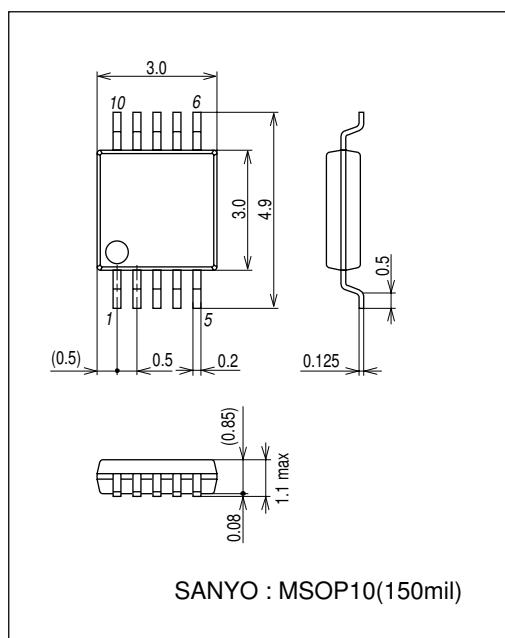
Modulation Frequency at $T_a = +25^\circ\text{C}$, $V_{CC} = 3.0\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Modulation frequency 1	F_{modf}	FSK mode			20	kHz
Modulation frequency 2	F_{moda}	ASK mode			20	kHz

Package Dimensions

unit : mm (typ)

3297

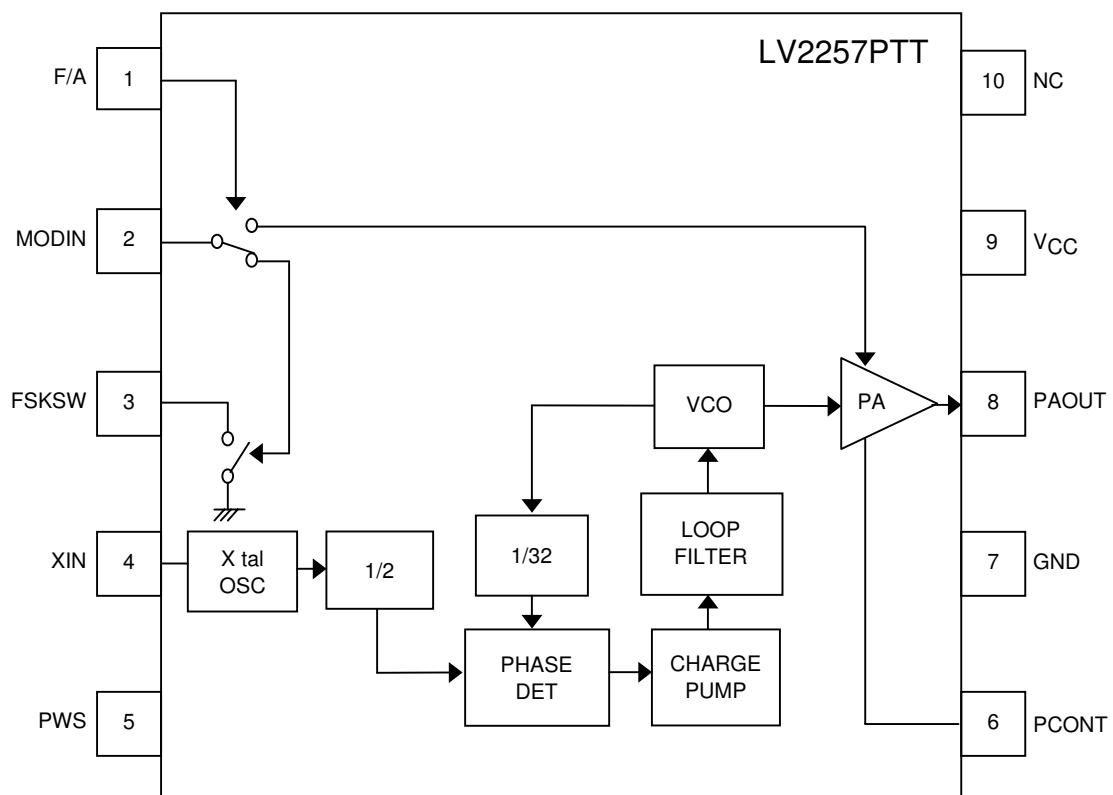


LV2257PTT

Pin Functions

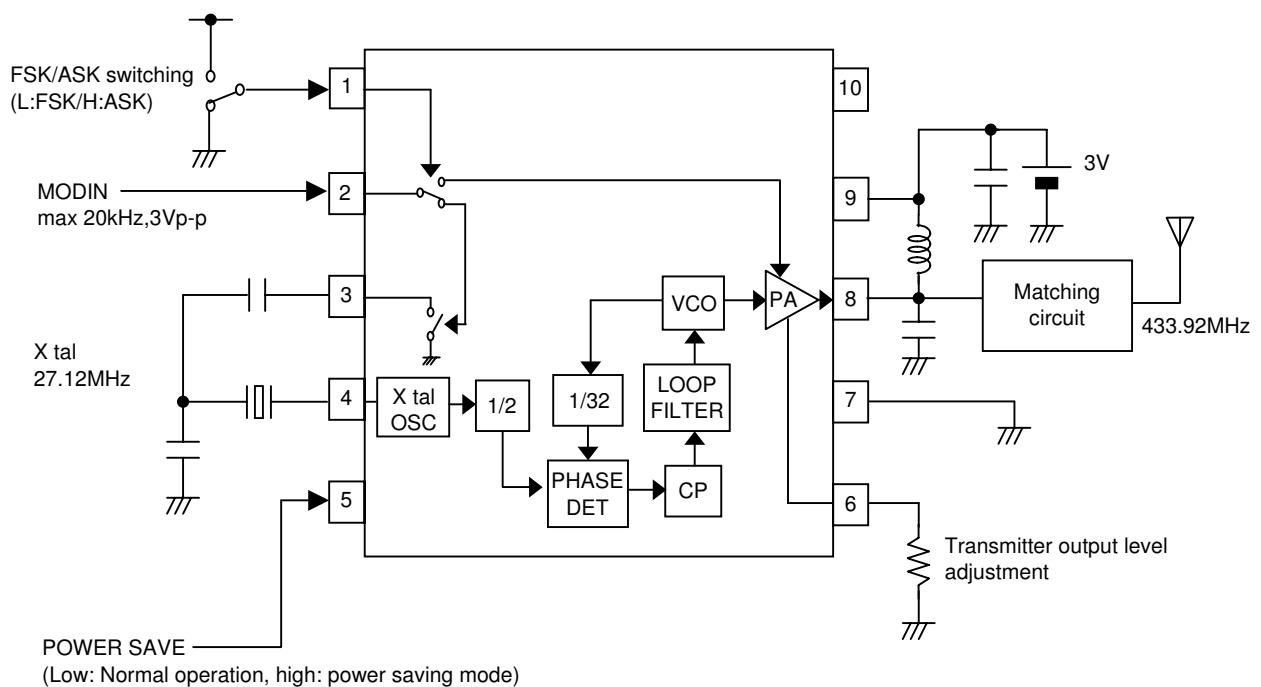
Pin No.	Pin	Function
1	F/A	FSK/ASK mode switching. Low: FSK, high: ASK
2	MODIN	Modulation signal input
3	FSKSW	FSK modulation external capacitor switching input
4	XIN	Crystal oscillator connection
5	PWS	Power saving mode control. Low: Normal operation, high: power saving mode
6	PCONT	Transmitter output level adjustment external resistor connection
7	GND	GND
8	PAOUT	Transmitter output
9	V _{CC}	V _{CC}
10	NC	Unused pin

Block Diagram and Pin Assignment

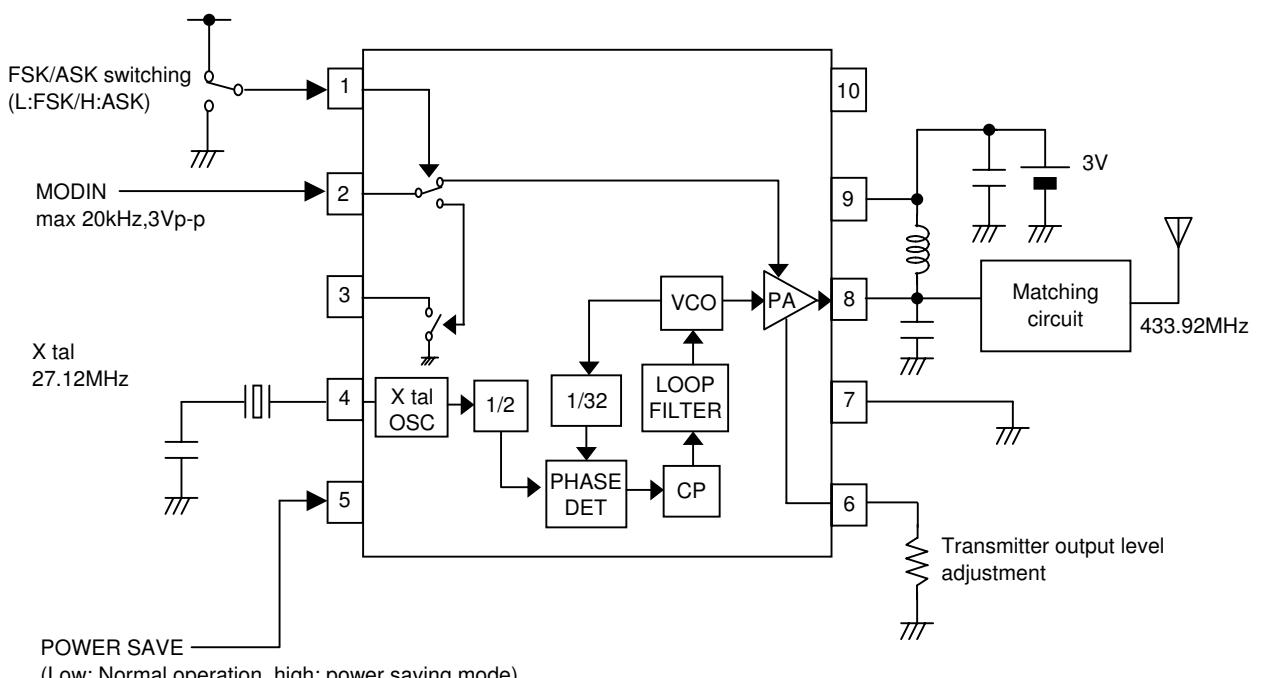


Top view

Application Circuit Example 1: FSK Specifications



Application Circuit Example 2: ASK Specifications



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