



SANYO Semiconductors

DATA SHEET

LV2257PTT — 434MHz Band FSK/ASK Wireless Transmitter IC

Bi-CMOS 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 Ta = 25°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	≤ 85°C, Mounted on a circuit board*	115	mW
Operating temperature	T _{opr}		-40 to +85	°C
Storage temperature	T _{stg}		-55 to +150	°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

- Any and all SANYO Semiconductor products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO Semiconductor representative nearest you before using any SANYO Semiconductor products described or contained herein in such applications.
- SANYO Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO Semiconductor products described or contained herein.

SANYO Semiconductor Co., Ltd.

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

LV2257PTT

Electrical Characteristics at Ta = +25°C, V_{CC} = 3.0V, no modulation

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain 1	I _{CCO}	F _{VCO} = 434MHz, 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 X tal	V X tal = -6dBm	25		30	MHz
Charge pump current	I _{CP}	V _{CP} = 1.5V		±100		μA

Transmitter Output at Ta = +25°C, V_{CC} = 3.0V, no modulation, F_{VCO} = 434MHz, 50Ω termination

Parameter	Symbol	Conditions	Ratings			unit
			min	typ	max	
Transmitter output 1	TxPwr1	When the pin 6 resistor is 10kΩ	-11.5	-10	-8.5	dBm
Transmitter output 2	TxPwr2	When the pin 6 resistor is 4.7kΩ	-1.5	0	1.5	dBm
Transmitter output 3	TxPwr3	When the pin 6 resistor is 1kΩ	+8	+10	+12	dBm
[Ta = 25°C, V _{CC} = 2.2V, no modulation, F _{VCO} = 434MHz, 50Ω termination]						
Transmitter output 4	TxPwr4	When the pin 6 resistor is 4.7kΩ	-2.5	-1	0.5	dB

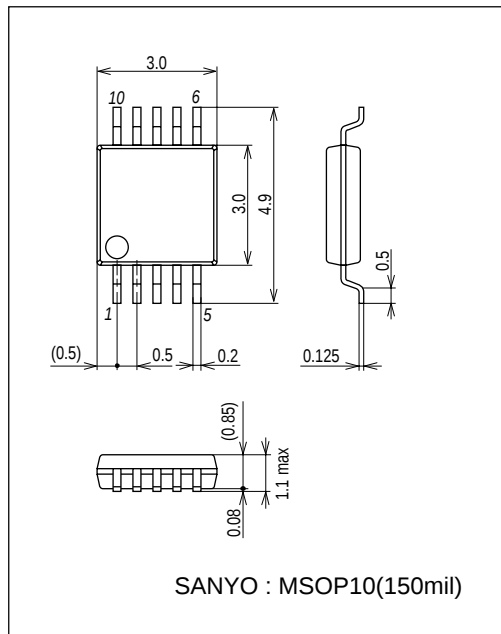
Modulation Frequency at Ta = +25°C, V_{CC} = 3.0V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Modulation frequency 1	Fmodf	FSK mode			20	kHz
Modulation frequency 2	Fmoda	ASK mode			20	kHz

Package Dimensions

unit : mm (typ)

3297

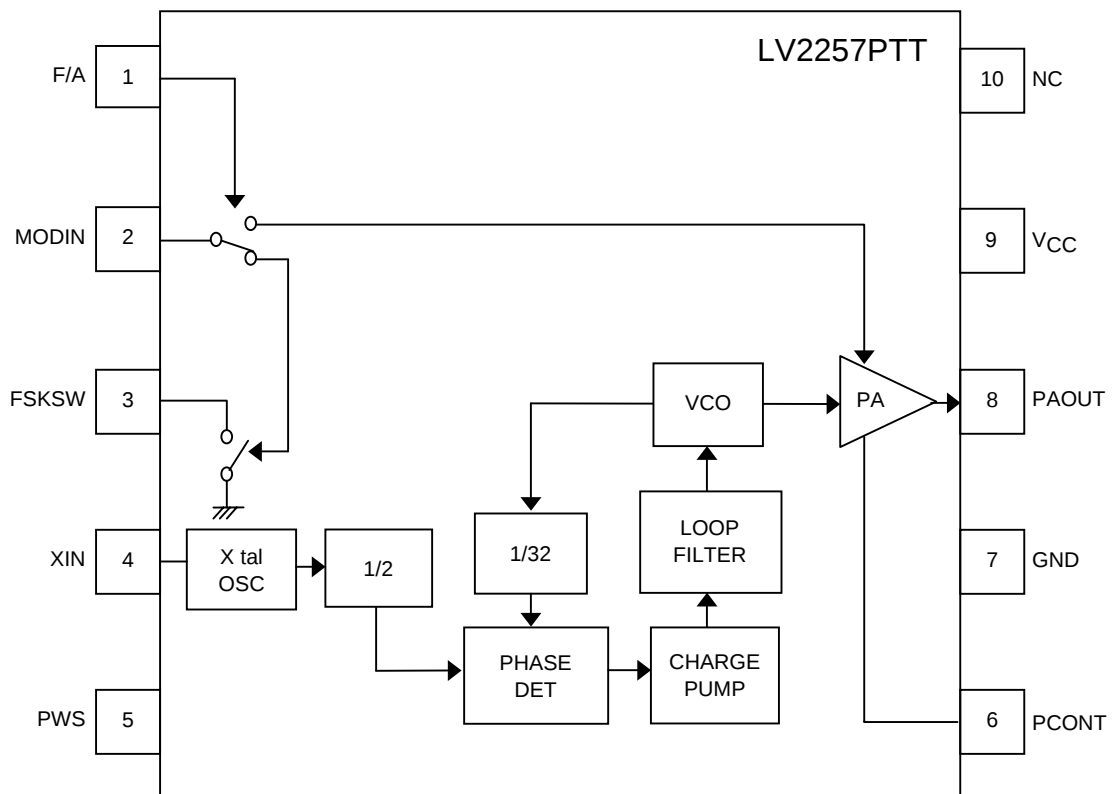


LV2257PTT

Pin Functions

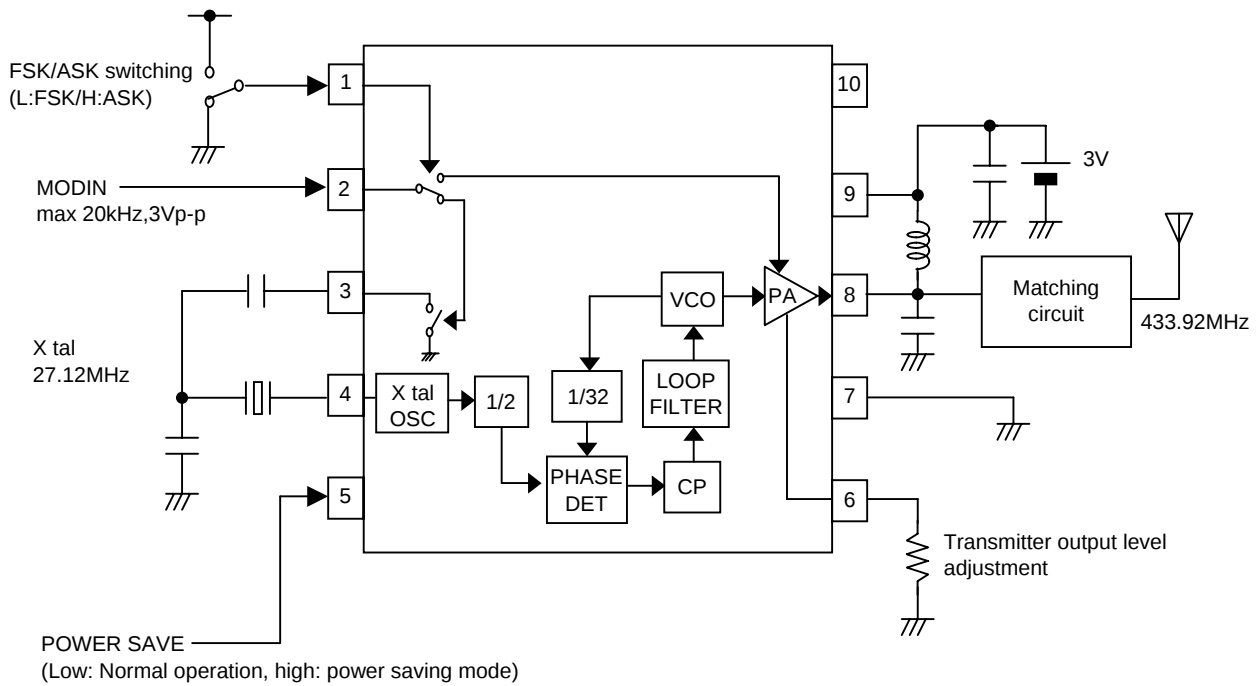
Pin No.	Pin	Function
1	F/A	FSK/ASK mode switching. Low: FSK, high: ASK
2	MODIN	Modulation signal input
3	FSKSW	FSK modulation external capacitor switching input
4	XIN	Crystal oscillator connection
5	PWS	Power saving mode control. Low: Normal operation, high: power saving mode
6	PCONT	Transmitter output 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

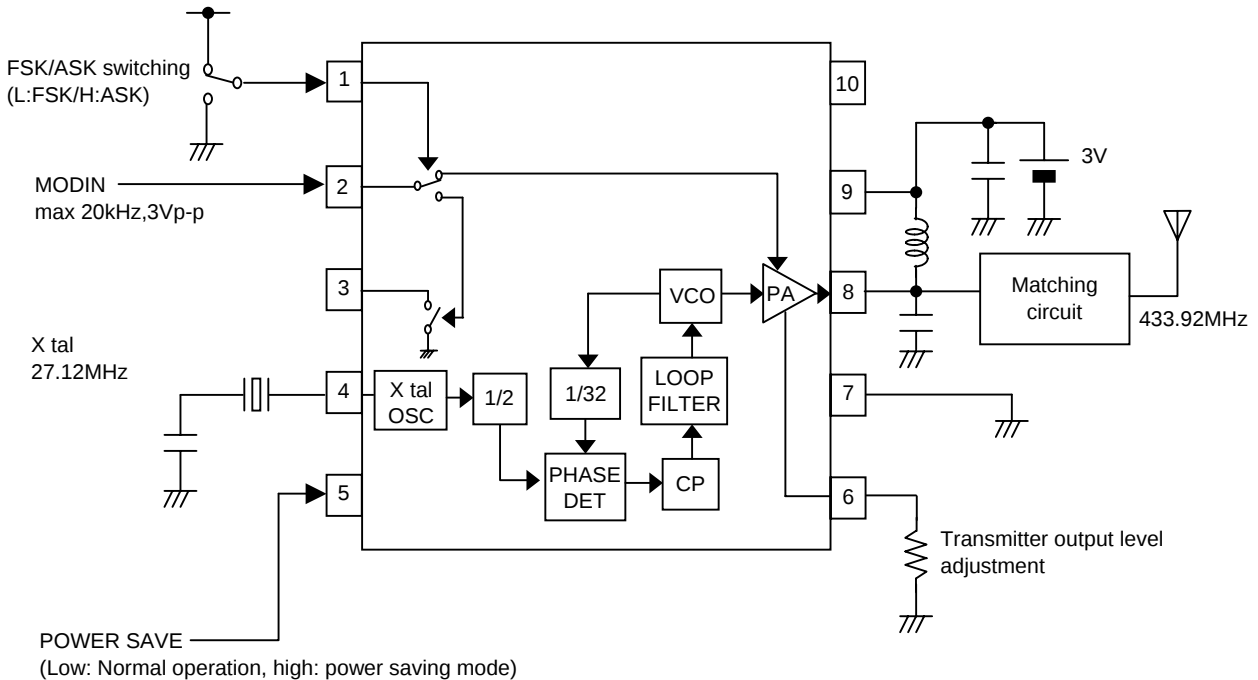


Top view

Application Circuit Example 1: FSK Specifications



Application Circuit Example 2: ASK Specifications



- Specifications of any and all SANYO Semiconductor products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- SANYO Semiconductor Co., Ltd. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all SANYO Semiconductor products (including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of SANYO Semiconductor Co., Ltd.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the SANYO Semiconductor product that you intend to use.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO Semiconductor believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of December, 2006. Specifications and information herein are subject to change without notice.