



SANYO Semiconductors DATA SHEET

LV2134V — Bi-CMOS IC MIX Built-in (400MHz) Dual PLL Synthesizer LSI for Cordless Phones

Overview

The LV2134V is a MIX built-in (400MHz) dual PLL synthesizer LSI for cordless phones.

Features

- Down conversion mixer (400MHz)
- TX, RX PLL synthesizer (400MHz)
- Built-in TX/RX local oscillator TR
- Charge pump output current switching

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum power supply voltage	V _{CC} max	BUFV _{CC} , TXV _{CC} , DV _{CC} , RXV _{CC}	-0.3 to +6.5	V
Maximum input voltage	V _{IN} max	CL, DI, CE	-0.3 to +6.5	V
Maximum output voltage1	V _{OUT} max1	TXCP, RXCP	-0.3 to V _{CC} +0.3	V
Maximum output voltage2	V _{OUT} max2	LD	-0.3 to +6.0	V
Allowable power dissipation	Pd max	Ta≤75°C Glass epoxy board: 114.3mm×76.1mm×1.6mm	420	mW
Operating ambient temperature	Topr		-25 to +75	°C
Storage ambient temperature	Tstg		-50 to +125	°C

Note : Since this product has low electrostatic resistance, special care should be taken when handling.

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LV2134V

Electrical Characteristics at Ta = 25°C, VCC = 2.2V

Parameter	Symbol	Pin	Conditions	Ratings			Unit
				min	typ	max	
Power supply voltage	VCC	BUFVCC, TXVCC, DVCC, RXVCC	-25 to +75°C	2.0	2.2	5.5	V
			-10 to +75°C	1.9	2.2	5.5	
Power supply current 1	ICC1	BUFVCC, TXVCC, DVCC, RXVCC	RX, TX, ON *1		16	22	mA
SB Power supply current	Ips	MIXVCC, TXVCC, DVCC, RXVCC	RX, TX, OFF *1		1000	1300	µA

*1 XIN = 21.25MHz crystal oscillator mode, RXVCOE pin and TXVCOE pin open, MIXIN and LOIN pins no signal.
Other input pins = 0V, Output pins = open, CP off

Mixer block

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Operating input frequency	Fr mix		200		400	MHz
Conversion gain	Vcg	Input 50Ω termination, output 1.1kΩ load	14	16.5	20	dB
Intercept point	IP3			1		dBm
Input impedance	Zin	MIXIN, F = 200MHz		56-j180		Ω
Output impedance	Zout	IFOUT, F = 20MHz		100-j1.8k		Ω

Input 50Ω termination (0dBm = 0.244Vrms)

PLL block

Parameter	Symbol	Pin	Conditions	Ratings			Unit
				min	typ	max	
Input frequency RX	FRXin	RXVCOE	VRXin = -12 to 0dBm	200		400	MHz
Input frequency TX	FTXin	TXVCOE	VTXin = -12 to 0dBm	200		400	MHz
Input sensitivity RX	VRXin	RXVCOE	FRXin = 200 to 400MHz	-12		0	dBm
Input sensitivity TX	VTXin	TXVCOE	FTXin = 200 to 400MHz	-12		0	dBm
Output "L" level voltage	VOL	LD	IO = 0.5mA			0.4	V
Output off leak current	IOFF	LD	VO = 2.2V	-1		+1	µA
C.P Output off leak current	IOFCP	RXCP, TXCP	VO = 1.1V	-1		+1	µA
C.P output current1	ICP1	RXCP, TXCP	VO = 1.1V		±0		µA
C.P output current2	ICP2	RXCP, TXCP	VO = 1.1V		±100		µA
C.P output current3	ICP3	RXCP, TXCP	VO = 1.1V		±200		µA
C.P output current4	ICP4	RXCP, TXCP	VO = 1.1V		±400		µA
Input "H" level current1	IH1	CL, DI, CE	V1 = 2.2V			1	µA
Input "L" level current1	IL1	CL, DI, CE	V1 = 0V			1	µA
Input "H" level voltage1	VH1	CL, DI, CE		0.8×DVCC	DVCC	5.5	V
Input "L" level voltage1	VL1	CL, DI, CE		-0.2	0	0.6	V

REF block

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Xin operating frequency	Fxin	Vxin = -4dBm Sine wave	5	21.25	25	MHz
Xin input level	Vxin	Fxin = 21.25MHz	-12	-10	0	dBm

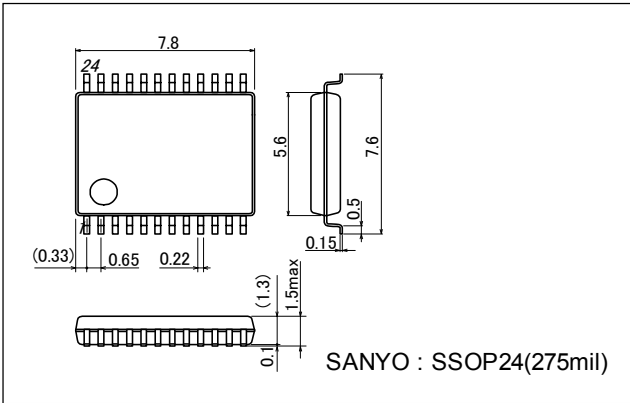
VCO block

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
C/N characteristic RX	CNR	When forming PLL loop on receiving side *2		-105		dBc/Hz
C/N characteristic TX	CNT	When forming PLL loop on transmitting side *2		-105		dBc/Hz

*2 Detuning frequency = 12.5kHz

Package Dimensions

unit : mm
3175B



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