Ordering number : EN1769B

SANYO Semiconductors
DATA SHEET

LA7210 — Monolithic Linear IC VCR Sync Detection Circuit

Overview

The LA7210 is a sync detection IC for acquiring optimal reception conditions in tuning systems for VCRs and similar products. This IC can implement an adjustment-free system with high detection precision using a ceramic oscillator VCO and a PLL-based horizontal sync detection circuit. In addition to use in tuning systems, this IC is also optimal for its support for the new German FTZ.

Functions

- Sync separator
- VCO ($32f_H$)
- AFC
- Sync detection comparator

Features

- Ceramic oscillator adopted for adjustment-free manufacturing
- Package: SIF10
- Output format: Emitter follower

Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		14.0	V
Allowable power dissipation	Pd max	Ta ≤ 75°C	200	mW
Operating temperature	Topr		-15 to +75	°C
Storage temperature	Tstg		-40 to +125	°C

Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		9.0 to 12.0	V
Operating supply voltage range	V_{CC} op		7.0 to 13.0	V

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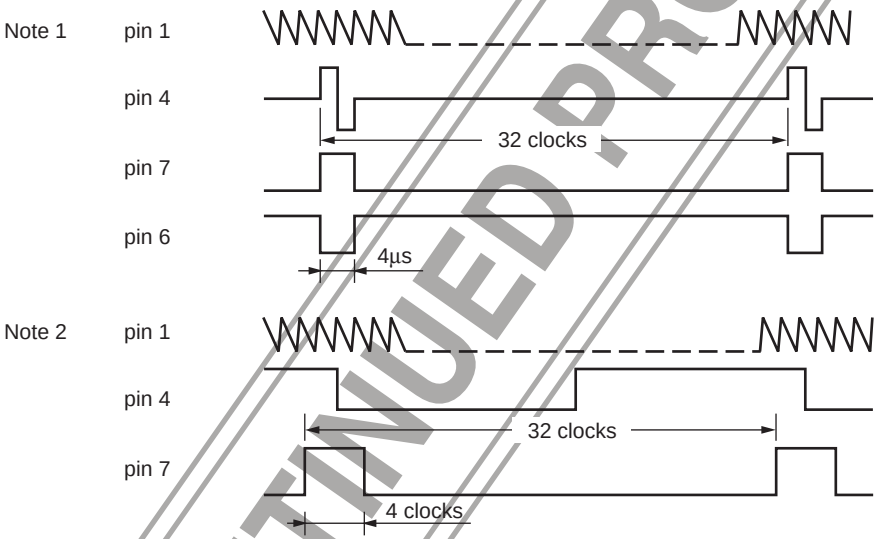
Electrical Characteristics at Ta = 25°C, V_{CC} = 9V

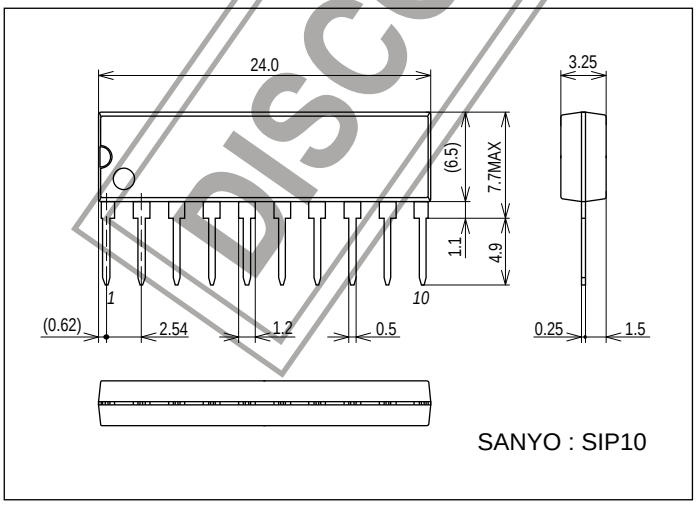
Parameter	Symbol	Conditions						Ratings			Unit
		SW1	SW2	SW3	SW4	SW5		min	typ	max	
Current drain	I_{CC}	c	a	a	b	a	No load	5.0	7.2	9.4	mA
Free-running frequency	f_{OSC}	c	a	a	a	a	No input		501		kHz
Oscillator output voltage	V_{OSC}	c	a	a	a	a	No input		1.9		Vp-p
Comparator input voltage	V_{8H}	c	a	b	a	a	V_{10} : H→L	5.8	6.0	6.2	V
	V_{8L}	c	a	b	a	a	V_{10} : L→H	3.6	3.8	4.0	V
Comparator output voltage	V_{10H}	c	a	b	a	a	V_8 = 3V	7.0	8.0	8.5	V
	V_{10L}	c	a	b	a	a	V_8 = 6.5V		0	0.1	V
Sync separator current	I_6	c	b	a	a	a	V_{10} : H→L	100	125	150	μA
Sync detection voltage	V_{80H}	a	a	a	a	a	SG1 = 0dB		7.5		V
	V_{80L}	a	a	a	a	a	SG1 = -20dB		0	0.1	V
AFC locking range	f_{6H}	b	a	a	a	a	V_{10} : H→L		15.82		kHz
	f_{6L}	b	a	a	a	a	V_{10} : H→L		15.25		kHz
Tuning discrimination input level	V_{6IN}	a	a	a	a	a	V_{10} : H→L		-12		dB
Logic operation	L1	b	a	a	a	b			Note 1		
	L2	c	c	a	a	b			Note 2		
Pin 6 voltage	V_6	c	c	a	a	a			6.7		V



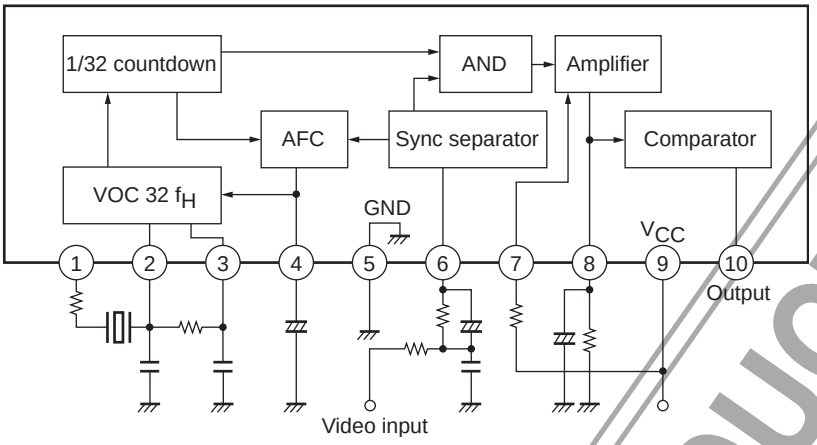
Package Dimensions

unit : mm (typ)

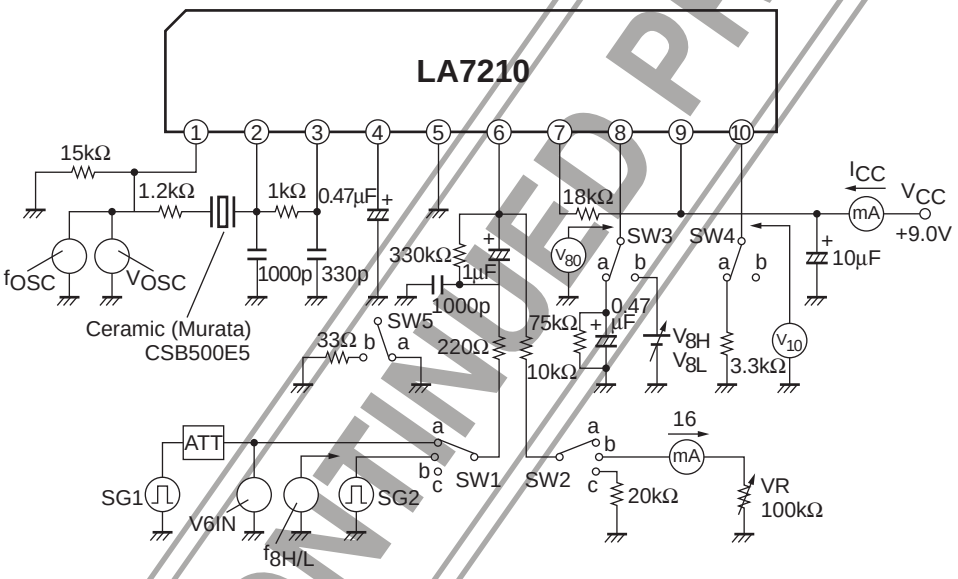
3043C



Equivalent Circuit Block Diagram



Test Circuit Diagram



SG1 : Use a standard color bar (EBU) and take 0dB to be 1Vp-p.
SG2 : Pulse generator (See the figure below.)