Ordering number:ENN1848B

Monolithic Linear IC

LA7710

SECAM, PAL (Quasi-Parallel) Audio IF Circuit

Overview

The LA7710 is a SECAM (audio IF, electronic volume control, AF preamplifier) / PAL (quasi-parallel audio IF circuit) dual system IC that is packaged in a 16-pin DIP package. The LA7710 is applicable to the SECAM or PAL system by changing over the AGC system (pin 3 is brought to open state or grounded).

Functions

- IF amplifier.
- Detector.
- IF AGC (peak AGC, average AGC).
- Electronic volume control.
- AF preamplifier.
- PAL/SECAM switch.

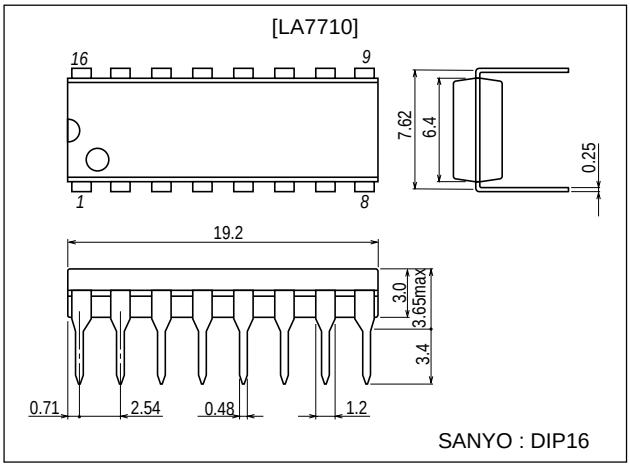
Features

- Used as SECAM audio IF circuit by bringing pin 3 to open state. Also used as PAL quasi-parallel audio IF circuit by grounding pin 3.
- Electronic volume control : 0dB output available.

Package Dimensions

unit:mm

3006B-DIP16



Specifications

Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		15	V
Maximum flow-out current	I_{11} max		–5	mA
	I_5 max		–3	mA
	I_4 max		–3	mA
Allowable power dissipation	Pd max	Ta≤60˚C	900	mW
Operating temperature	Topr		–20 to +70	˚C
Storage temperature	Tstg		–55 to +125	˚C

Operating Conditions at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		12	V
Operating voltage range	V_{CC} op		9 to 13.5	V

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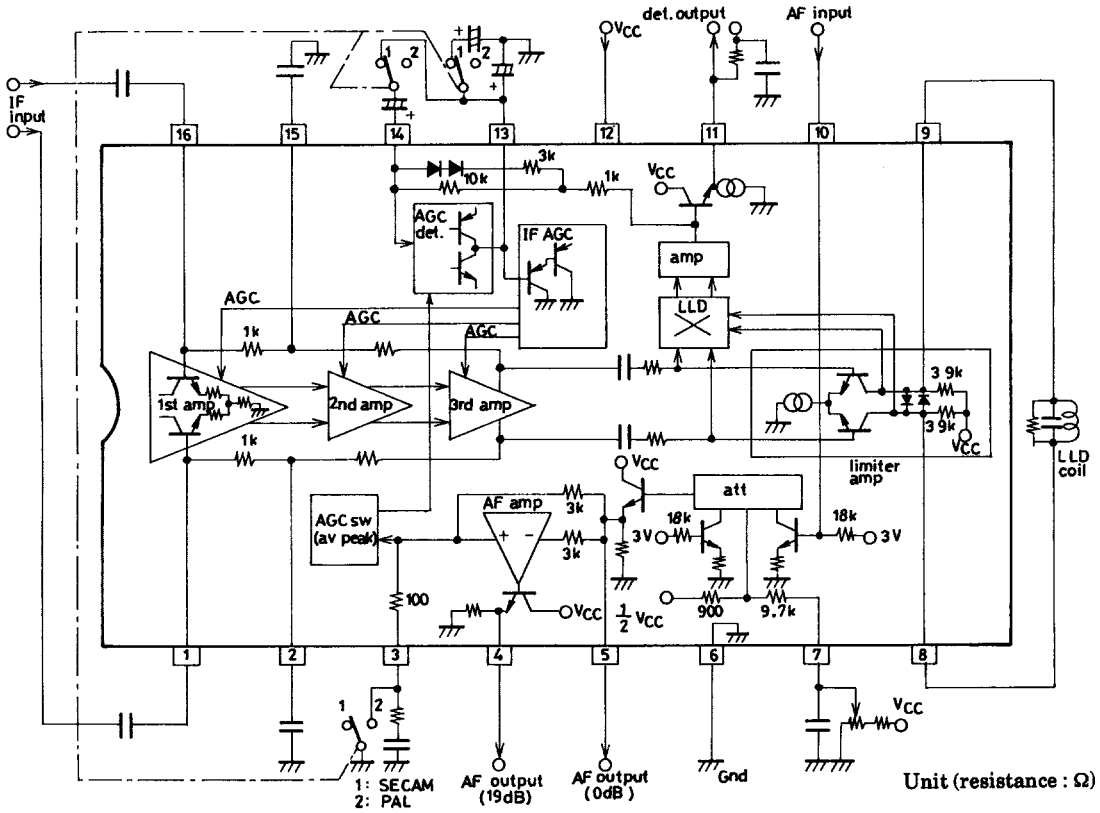
Operating Characteristics at Ta = 25˚C, V_{CC}=12V, fs=39.2MHz, fp=32.7MHz

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Circuit current	I_{12}		39	49	63	mA
Usable sensitivity	Vi(S/N)	400Hz-30% mod AM		39	46	dB
Average detection output	Vos	400Hz-30% mod AM	190	280	360	mV
SECAM S/N	S/Ns	400Hz-30% mod AM	52	59		dB
Detection output destortion	THDs	400Hz-30% mod AM		0.5	1.0	%
Maximum allowable input	Vi max	THD=2%	92	98		dB/µV
AGC range	GR		63	69		dB
Peak output amplitude	Vop	15kHz-78% mod AM	1.4	1.7	2.1	V
SIF output amplitude	V_{SIF}	P/S : 20dB	50	90	130	mV
Frequency characteristic	f_C	–3dB	5	7		MHz
Electronic volume control voltage gain	VGdc		–1	0	+1	dB
Electronic volume control destortion	THDatt			0.1	0.4	%
Electronic volume control max. attenuation	ATT		70	80		dB
AF amplifier voltage gain	VGaf		17	19	21	dB
AF amplifier distortion	THDaf			0.3	1.0	%

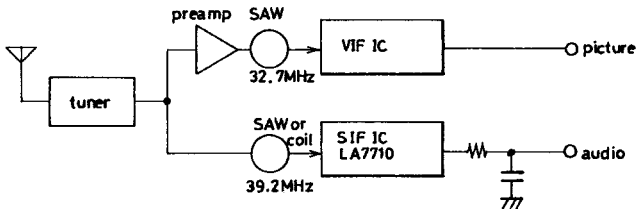
(Note) Current direction : + : Flowing into IC
– : Flowing out of IC

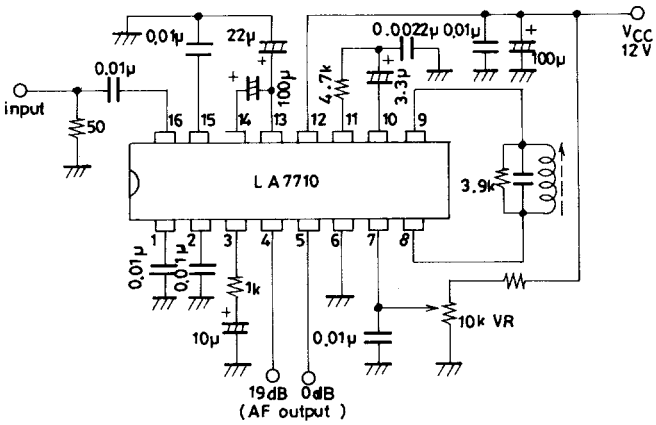
Equivalent Circuit Block Diagram



Sample Application Circuits-Each system diagram and IC peripheral circuit

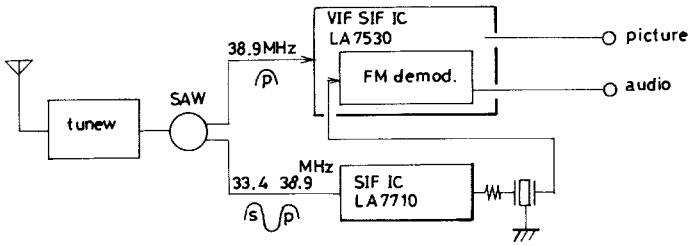
(1) SECAM

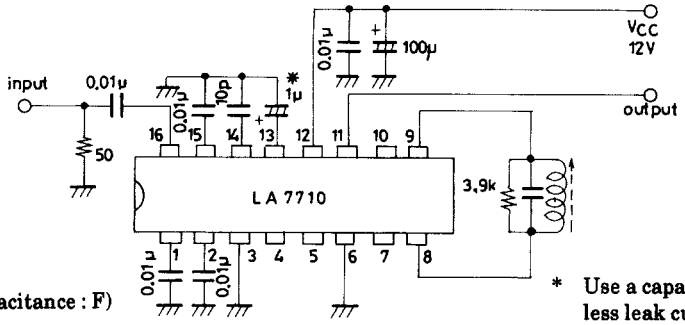




Unit (resistance : Ω, capacitance : F)

(2) PAL

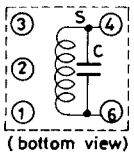




Unit (resistance : Ω, capacitance : F)

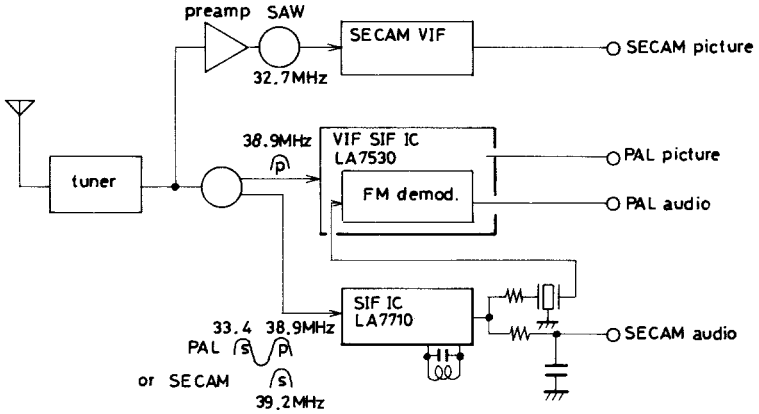
* Use a capacitor with less leak current.

[Coil specification]
Bobbin : 7mm square



Number of turns	④-⑥	7T
Material	UEW	0.12φ
Capacitance	33pF	
Frequency	39.2MHz	

(3) PAL/SECAM



(Note) *1 When selecting the PAL/SECAM, the LLD tuning point of the LA7710 must be changed over (38.9MHz → 39.2MHz).
*2 When selecting the PAL/SECAM, the filter characteristic must be changed over.