Ordering number:ENN1194C

Monolithic Linear IC

LA7911

TV Tuner Controller

Overview

The LA7911 is a tuner controller IC having such functions as band switch, inverter, low-pass filter, 33V referene Zener. It can be used for frequency synthesizer or voltage synthesizer according to external application.

Functions

- Band switch (Equivalent to LA7900, LA7910 : Refer to the truth table).
- Inverter.
- Low-pass filter (Voltage follower, operational amplifier).
- 33V reference Zener.

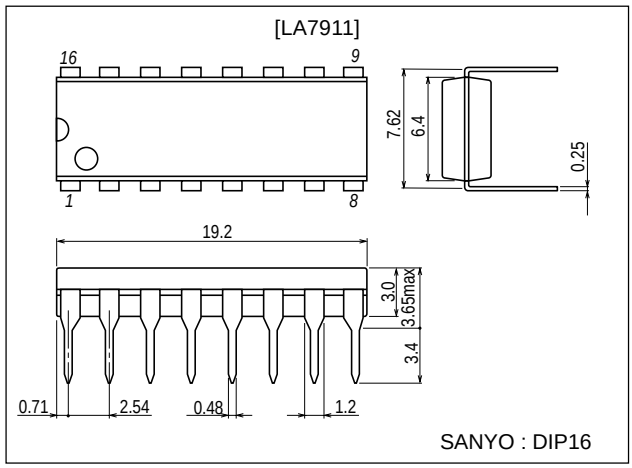
Features

- 2-input 5-output band switch.
- Band switches of 2 types (LA7900 type or LA7910 type) available by changing-over C pin.
- Large maximum output current and small saturation voltage.
- Meets CATV tuner requirements.
- Usable for frequency synthesizer or voltage synthesizer by changeing connection of inverter and operational amplifier.

Package Dimensions

unit:mm

3006B-DIP16



Band Switch Truth Table

Input			Output				
(Pin3) A	(Pin2) B	(Pin4) C	F1 (Pin15)	F2 (Pin14)	F3 (Pin13)	F4 (Pin12)	SW (Pin11)
L	L	Open	H	Z	Z	Z	Z
H	L	Open	Z	H	Z	Z	L
L	H	Open	Z	Z	H	Z	L
H	H	Open	Z	Z	Z	H	L
L	L	GND	H	Z	Z	H	Z
H	L	GND	Z	H	Z	H	L
L	H	GND	Z	Z	H	Z	L
H	H	GND	Z	Z	H	H	L

Z : High impedance

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Specifications

Maximum Ratings at Ta = 25˚C

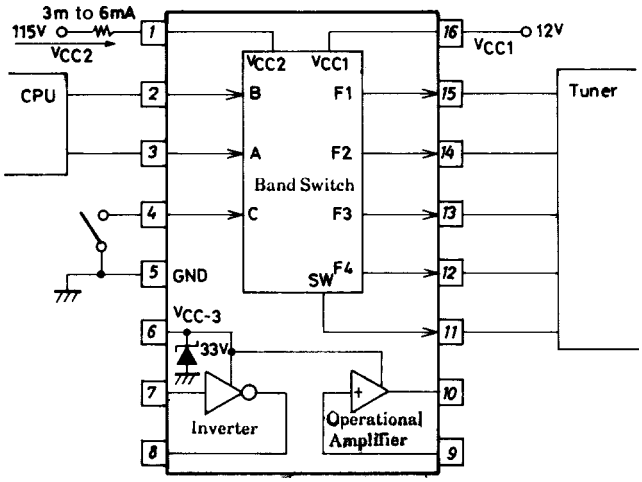
Parameter	Symbol	Conditions	Ratings	Unit
[Band switch]				
V_{CC1} maximum supply voltage	V_{16} max		18	V
V_{CC2} maximum supply current	I_1 max		10	mA
Maximum load current	I_{12}, I_{13} max	I_1=6mA	–60	mA
	I_{14}, I_{15} max	V_{CC1}=12V		
Maximum load current	I_{11} max		25	mA
Maximum AB input current	I_2, I_3 max		2	mA
Maximum applied voltage (SW)	V_{11} max		35	V
Maximum applied voltage	V_{12}, V_{14} max		–18	V
[Inverter, operational amplifier]				
V_{CC3} maximum supply current	I_6 max		8	mA
Maximum applied voltage	V_8 max		35	V
Maximum load current	I_8 max		5	mA
Maximum input voltage	V_7 max		8	V
Maximum input current	I_7 max		1	mA
Maximum input voltage	V_9 max		V_{CC}–1	V
[Common to 1.2]				
Allowable power dissipation	Pd max	Ta≤65˚C	600	mW
Operating temperature	Topr		–20 to +65	˚C
Storage temperature	Tstg		–55 to +125	˚C

Operating Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[Band switch]						
Quiescent current	I_{CC}		0		9	mA
Output saturation voltage	F(sat)		0		0.7	V
Output saturation voltage	SW(sat)		0		0.7	V
Input threshold voltage	V_{TH}		0.8	1.5	3	V
Output leakage current	I_L		0		–50	µA
[Inveter, operational amplifier, reference zener]						
Zener voltage	V_Z		31	33	35	V
Output saturation voltage	V8(sat)		0		0.3	V
Input threshold voltage	V_{TH}		2.5		4.5	V
Input offset voltage 1	$V_{10\text{-}1}$		–100		+100	mV
Input offset voltage 2	$V_{10\text{-}2}$		–100		+100	mV
Input bias current	I_{BIAS}				–190	nA

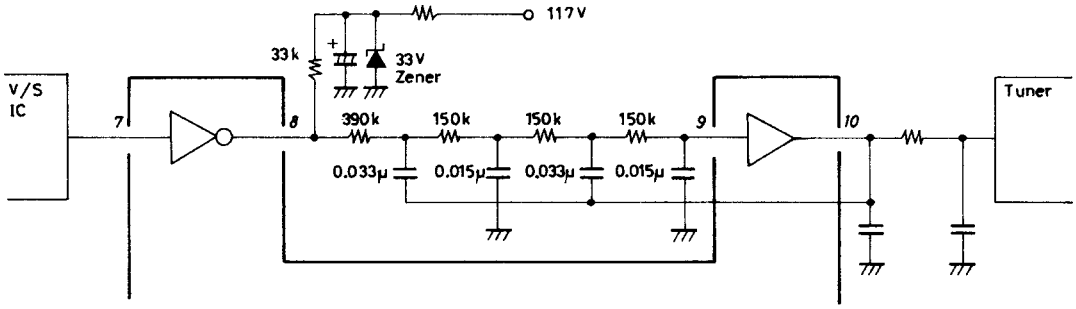
Note) Current flowing into IC : Pulse (No sign)
Current flowing out of IC : Minus (–)

Equivalent Circuit Block Diagram



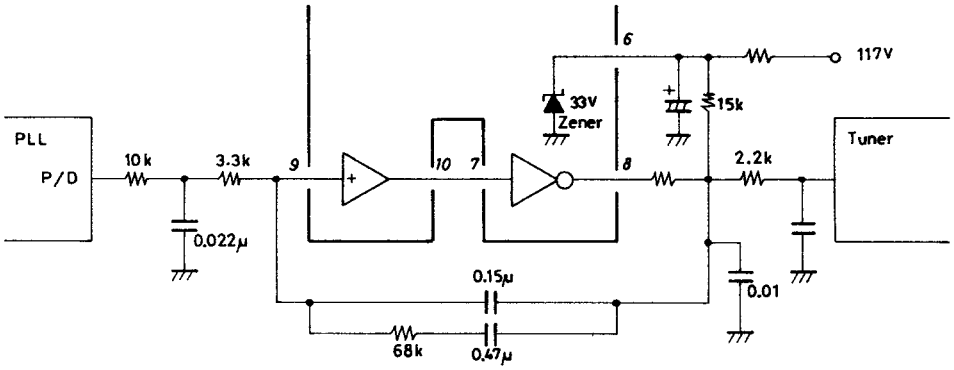
Sample Application Circuit

1. Voltage Synthesizer (f=500Hz)



Unit (resistance:Ω, capacitance:F)

2. Frequency Synthesizer (f_r=1kHz)



Unit (resistance:Ω, capacitance:F)