

SANYO	No. 4184	LB8111V
	8 mm VTR Sensor Amplifier	

Overview

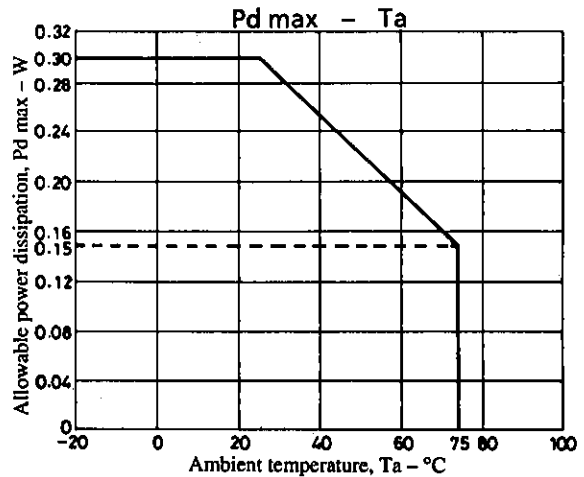
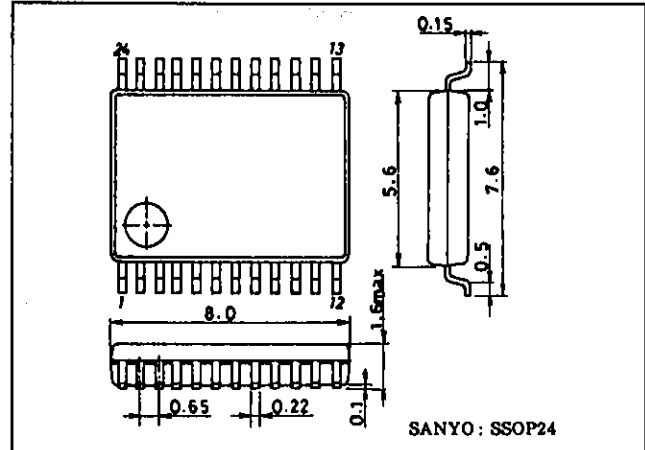
The LB8111V is equipped with built-in amplifiers for use with reel FG, drum FG and drum PG applications to make this IC most suitable for portable VTR (Video Tape Recorder) applications.

Features

- Built-in 2-channel reel FG amplifier
- Built-in drum FG amplifier
- Built-in drum PG amplifier

Package Dimensions

unit : mm
3175A-SSOP24



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Value	unit
Maximum supply voltage	V _{CC max}	7	V
Allowable power dissipation	P _{d max}	0.3	W
Operating temperature	T _{opr}	-20 to +75	°C
Storage temperature	T _{stg}	-55 to +125	°C

Allowable Operating Conditions at Ta = 25°C

Parameter	Symbol	Value	unit
Supply voltage	V _{CC}	4.0 to 5.5	V

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Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 5\text{V}$

		min	typ	max	unit	note
Supply current	I_{CC}		3	5	mA	
Internal reference voltage	V_{REF}	1.8	2.0	2.2	V	

[Reel FG amplifier]

Input offset voltage	V_{IO}		± 1	± 5	mV	
Input bias current	I_B			250	nA	
In-phase input voltage range	V_{ICM}	1		4	V	
In-phase signal clearance ratio	CMR	65	80		dB	*
Open-loop gain	G_V		55		dB	
Source side output saturation voltage	V_{OU}	$I_O = -500\mu\text{A}$	3.7		V	
Synch side output saturation voltage	V_{OD}	$I_O = 500\mu\text{A}$		1.3	V	

[Drum FG amplifier]

Input offset voltage	V_{IO}		± 1	± 5	mV	*
Input bias current	I_B			250	nA	*
In-phase input voltage range	V_{ICM}	1		4	V	*
Output current (sink)	I_{OL}			2	mA	
Output ON voltage	V_{OL}		0.2	0.4	V	
Output OFF voltage	V_{OH}	4.8			V	
Hysteresis width	V_{HIS}	70	100	130	mV	*

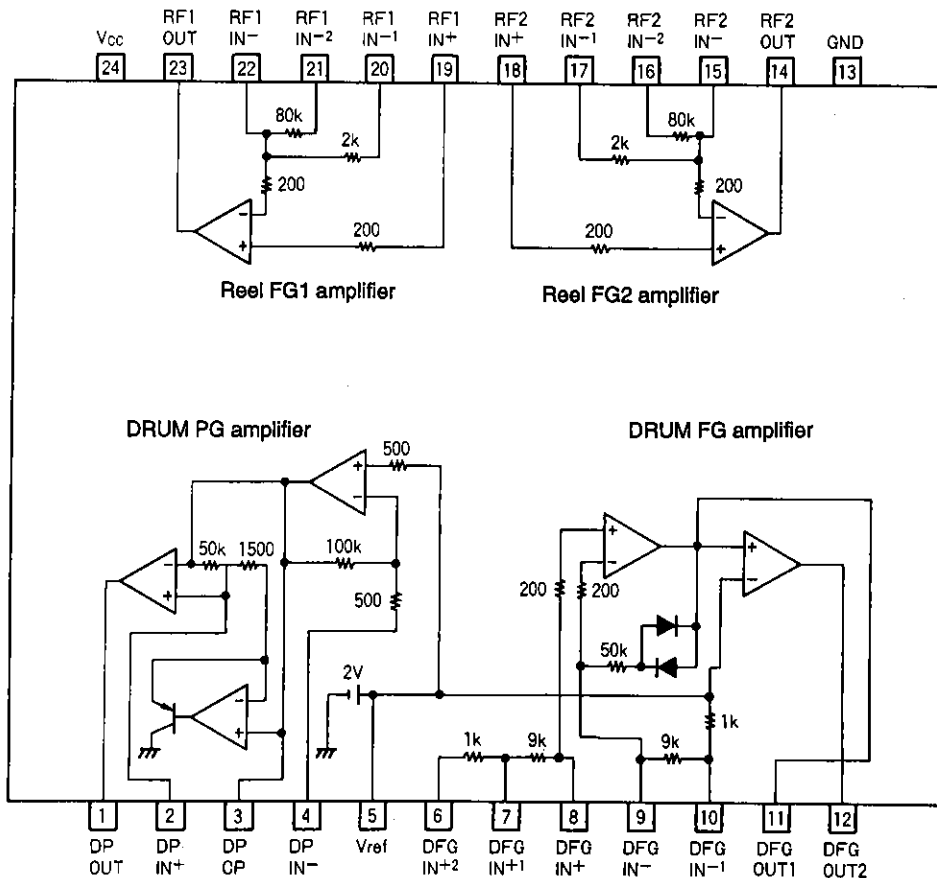
[Drum PG amplifier]

Input offset voltage	V_{IO}		± 1	± 5	mV	
Input bias current	I_B			500	nA	*
In-phase input voltage range	V_{ICM}	1		4	V	*
Output current (sink)	I_{OL}			2	mA	
Output ON voltage	V_{OL}		0.2	0.4	V	
Output OFF voltage	V_{OH}	4.8			V	
Schmitt amplifier hysteresis width	V_{SHIS}		20		mV	*

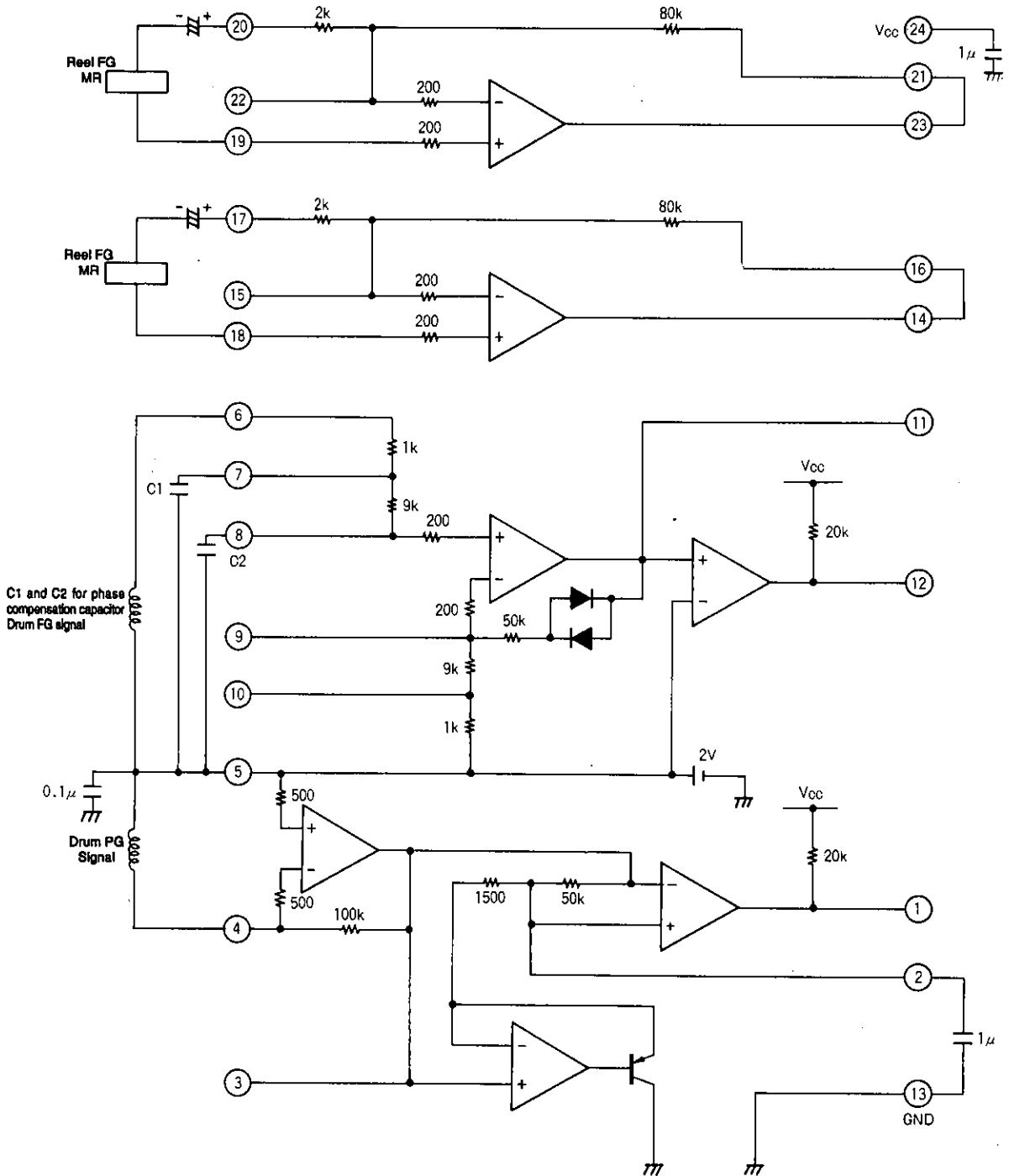
Note: * marks indicate items that were not subject to testing.

Pin Assignment

Unit (resistance: Ω)



Block Diagram



Unit (resistance: Ω, capacitance: F)

Pin Assignment

(Power supply reel amplifier)

Pin No.	Pin Symbol	Pin Voltage	Equivalent circuit	Pin Description
24	V _{CC}			This pin is for total circuit power supply.
13	GND			This pin is for total circuit ground (GND).
5	V _{ref}			This pin is for internal reference voltage (~2V). This voltage is reference voltage for Drum FG and Drum PG amplifiers.
18	R _{EE} LFG2 _{in+}			These pins are for positive (+) inputs for the reel FG amplifiers.
19	R _{EE} LFG1 _{in+}			These pins are for negative (-) inputs for the reel FG amplifiers.
15	R _{EE} LFG2 _{in-}			These pins are for reel FG amplifier negative (-) inputs equipped with 2k input resistors.
22	R _{EE} LFG1 _{in-}			These pins are for reel FG amplifier negative (-) inputs equipped with 80kΩ feed-back resistors.
17	R _{EE} LFG2 _{in-1}			
20	R _{EE} LFG1 _{in-1}			
16	R _{EE} LFG2 _{in-2}			These pins are for reel FG amplifier output pins.
21	R _{EE} LFG1 _{in-2}			
14	R _{EE} LFG2 _{out}			
23	R _{EE} LFG1 _{out}			

Unit (resistance: Ω)

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(Drum PG amplifier)

Pin No.	Pin Symbol	Pin Voltage	Equivalent circuit	Pin Description
4	DRUM PGin ⁻			This pin is for Drum PG amplifier Input. Inputs PG signal to interval with V _{REF} .
3	DRUM PGc.P			This pin is for Drum PG amplifier first-stage amplifier output. This is the check pin for PG amplifier measurement. (With actual applications, this pin is not used.)
2	DRUM PGin ⁺			This pin is for connecting a Drum PG amplifier peak hold capacitor.
1	DRUM PG _{OUT}			This pin is the Drum PG amplifier output pin.

Unit (resistance: Ω)

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(Drum FG amplifier)

Pin No.	Pin Symbol	Pin Voltage	Equivalent circuit	Pin Description
6	DRUM FGin ⁺²			This pin is for Drum FG amplifier positive (+) input equipped with a 1k input resistor. Inputs FG signal to interval with V_{REF} .
7	DRUM FGin ⁺¹			This pin is for Drum FG amplifier positive (+) input equipped with a 9k input resistor.
8	DRUM FGin ⁺			This pin is for Drum FG amplifier positive (+) input.
10	DRUM FGin ⁻¹			This pin is for Drum FG amplifier negative (-) input equipped with a 9k input resistor.
9	DRUM FGin ⁻			This pin is for Drum FG amplifier negative (-) input.
11	DRUM FG _{OUT} 1			This pin is for Drum FG amplifier first-stage amplifier output. This is the check pin for FG amplifier measurement. (With actual applications, this pin is not used.)
12	DRUM FG _{OUT} 2			This pin is for the Drum FG amplifier output pin.

Unit (resistance: Ω)

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