

<b>SANYO</b>	No. 4184	<b>LB8111V</b>
	<b>8 mm VTR Sensor Amplifier</b>	

**Overview**

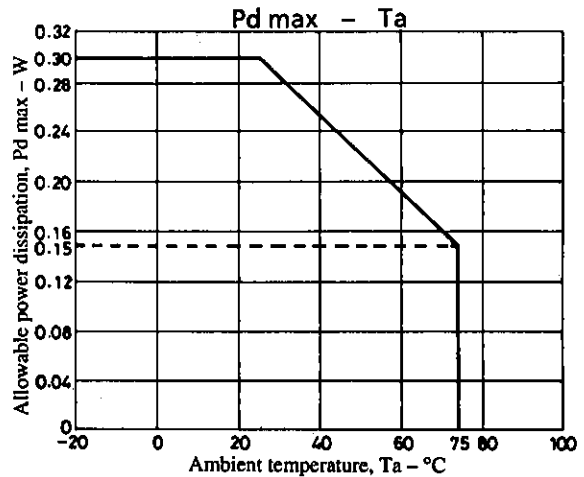
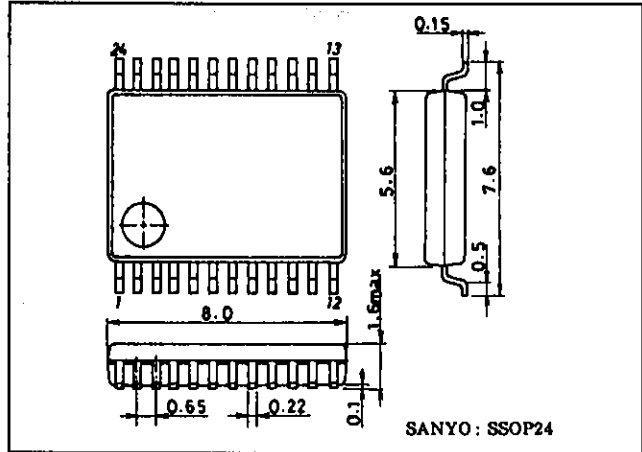
The LB8111V is equipped with built-in amplifiers for use with reel FG, drum FG and drum PG applications to make this IC most suitable for portable VTR (Video Tape Recorder) applications.

**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 <sub>CC max</sub>	7	V
Allowable power dissipation	P <sub>d max</sub>	0.3	W
Operating temperature	T <sub>opr</sub>	-20 to +75	°C
Storage temperature	T <sub>stg</sub>	-55 to +125	°C

**Allowable Operating Conditions at Ta = 25°C**

Parameter	Symbol	Value	unit
Supply voltage	V <sub>CC</sub>	4.0 to 5.5	V

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## Electrical Characteristics at Ta = 25°C, VCC = 5V

		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	$V_{IO}$		$\pm 1$	$\pm 5$	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	$V_{OU}$	$I_O = -500\mu A$	3.7		V	
Synch side output saturation voltage	$V_{OD}$	$I_O = 500\mu A$		1.3	V	

### [Drum FG amplifier]

Input offset voltage	$V_{IO}$		$\pm 1$	$\pm 5$	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	*

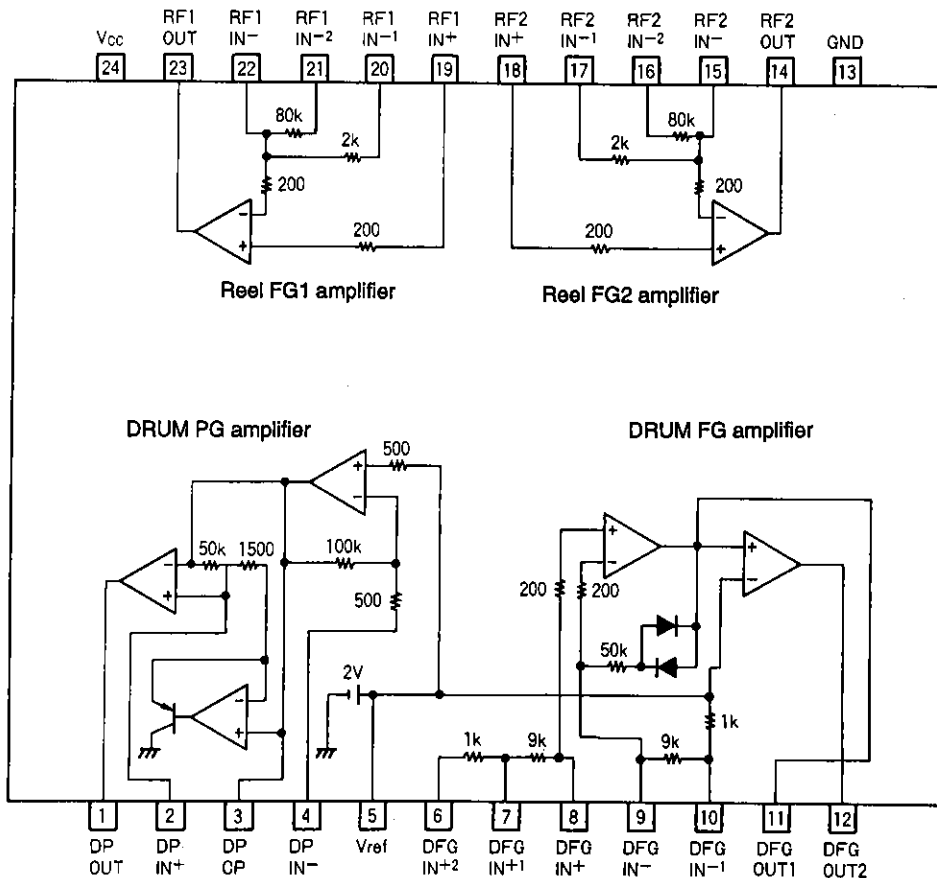
### [Drum PG amplifier]

Input offset voltage	$V_{IO}$		$\pm 1$	$\pm 5$	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	*

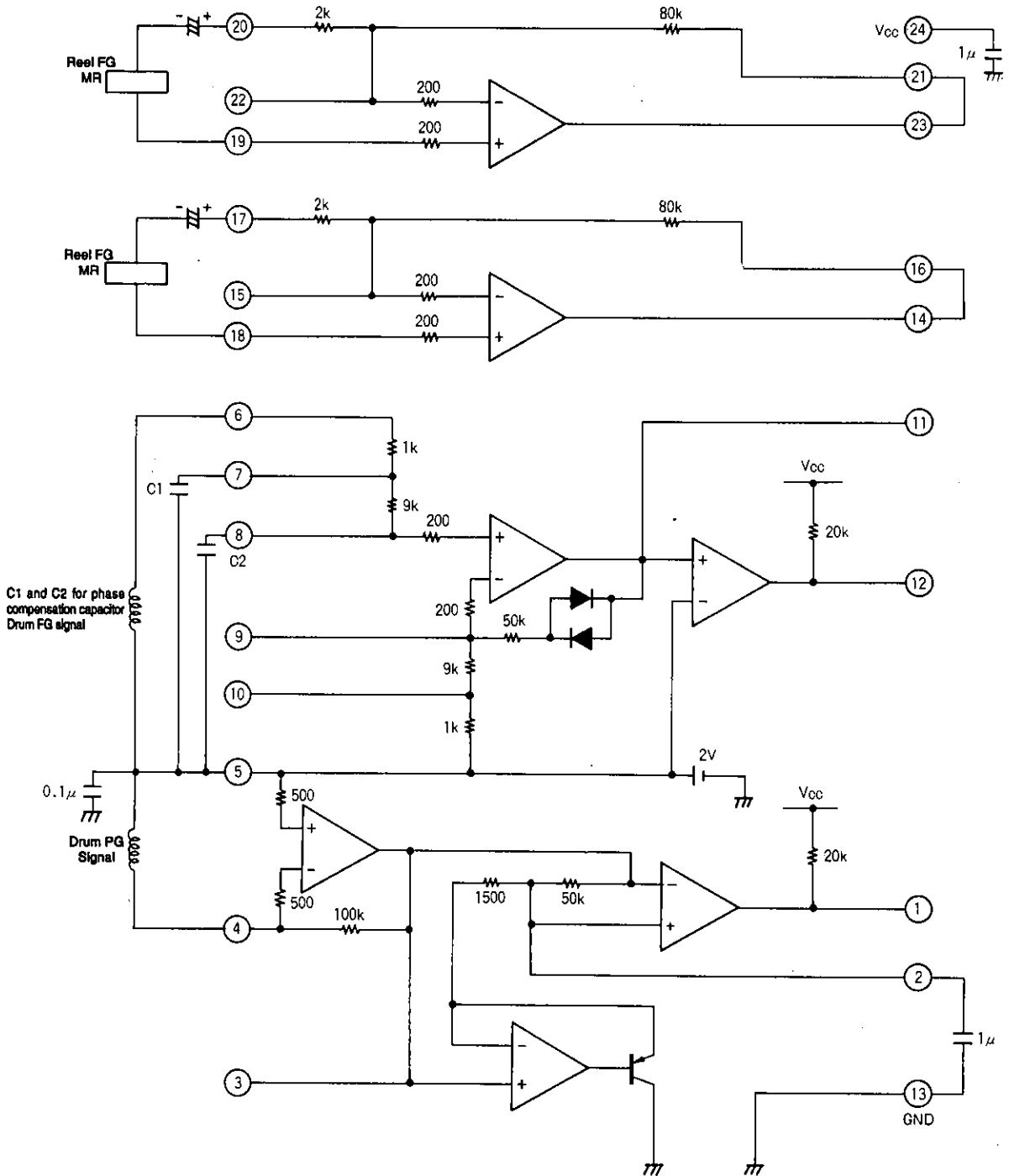
Note: \* marks indicate items that were not subject to testing.

## Pin Assignment

Unit (resistance:  $\Omega$ )



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 <sub>CC</sub>			This pin is for total circuit power supply.
13	GND			This pin is for total circuit ground (GND).
5	V <sub>ref</sub>			This pin is for internal reference voltage (~2V). This voltage is reference voltage for Drum FG and Drum PG amplifiers.
18	R <sub>EE</sub> LFG2 <sub>in+</sub>			These pins are for positive (+) inputs for the reel FG amplifiers.
19	R <sub>EE</sub> LFG1 <sub>in+</sub>			These pins are for negative (-) inputs for the reel FG amplifiers.
15	R <sub>EE</sub> LFG2 <sub>in-</sub>			These pins are for reel FG amplifier negative (-) inputs equipped with 2k input resistors.
22	R <sub>EE</sub> LFG1 <sub>in-</sub>			These pins are for reel FG amplifier negative (-) inputs equipped with 80kΩ feed-back resistors.
17	R <sub>EE</sub> LFG2 <sub>in-1</sub>			
20	R <sub>EE</sub> LFG1 <sub>in-1</sub>			
16	R <sub>EE</sub> LFG2 <sub>in-2</sub>			These pins are for reel FG amplifier output pins.
21	R <sub>EE</sub> LFG1 <sub>in-2</sub>			
14	R <sub>EE</sub> LFG2 <sub>out</sub>			
23	R <sub>EE</sub> LFG1 <sub>out</sub>			

Unit (resistance: Ω)

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(Drum PG amplifier)

Pin No.	Pin Symbol	Pin Voltage	Equivalent circuit	Pin Description
4	DRUM PG <sub>in</sub> <sup>-</sup>			This pin is for Drum PG amplifier Input. Inputs PG signal to interval with V <sub>REF</sub> .
3	DRUM PG <sub>C.P</sub>			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 PG <sub>in</sub> <sup>+</sup>			This pin is for connecting a Drum PG amplifier peak hold capacitor.
1	DRUM PG <sub>out</sub>			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 <sub>OUT</sub> 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 <sub>OUT</sub> 2			This pin is for the Drum FG amplifier output pin.

Unit (resistance:  $\Omega$ )

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