

Electronic Volume

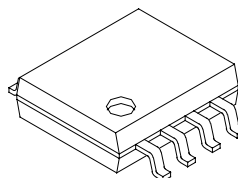
Description

The CXA1211M is a wide band general-purpose VCA. This bipolar IC incorporates 2 channels.

Features

- Wide band frequency characteristics:
100kHz to 20MHz (−0.5dB)
- Wide dynamic range
- Low noise, low distortion
- Low power consumption

8 pin SOP (Plastic)



Applications

Video signals and other wide band VCA

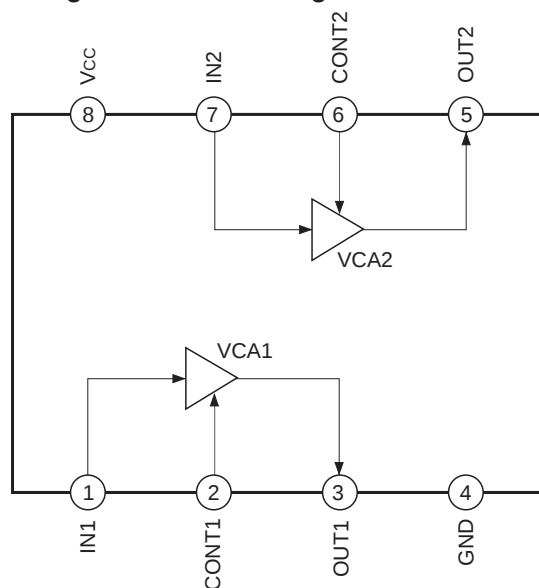
Operating Conditions

Supply voltage	V_{CC}	4.50 to 5.50	V
----------------	----------	--------------	---

Absolute Maximum Ratings

- | | | | |
|-------------------------------|-----------|-------------|----|
| • Supply voltage | V_{CC} | 14 | V |
| • Operating temperature | T_{opr} | −20 to +75 | °C |
| • Storage temperature | T_{stg} | −65 to +150 | °C |
| • Allowable power dissipation | P_D | 510 | mW |

Block Diagram and Pin Configuration



Sony reserves the right to change products and specifications without prior notice. This information does not convey any license by any implication or otherwise under any patents or other right. Application circuits shown, if any, are typical examples illustrating the operation of the devices. Sony cannot assume responsibility for any problems arising out of the use of these circuits.

Pin Description

Pin No.	Symbol	Voltage		I/O resistance	Equivalent circuit	Description
		DC	AC			
1	IN1	2.5V	1.0Vp-p*	40k Ω		Signal input pin (CH1)
2	CONT1	2.7V*	—	—		Input pin of gain control signal (CH1). At "Low" power save is possible. Low: 1V and below
3	OUT1	1.9V	1.0Vp-p	—		Signal output pin (CH1)
4	GND	0V*	—	—	—	GND pin
5	OUT2	1.9V	1.0Vp-p	—		Signal output pin (CH2)

* External input

Pin No.	Symbol	Voltage		I/O resistance	Equivalent circuit	Description
		DC	AC			
6	CONT2	2.7V*	—			Input pin of gain control signal (CH2). At "Low" power save is possible. Low: 1V and below
7	IN2	2.5V	1.0Vp-p*	40kΩ		Signal input pin (CH2)
8	Vcc	5V*	—	—	—	Vcc pin

* External input

Notes on Operation

Do not fail to take the following precautions upon usage of the CXA1211M.

1. Countermeasure to cross talk between channels

Fix a bypass capacitor to Pins CONT1 and CONT2 that control the amplifier gain. When the impedance of the control voltage source is visible, depending on the package volume and others, cross talk between channels is easily generated.

2. Input signal dynamic range

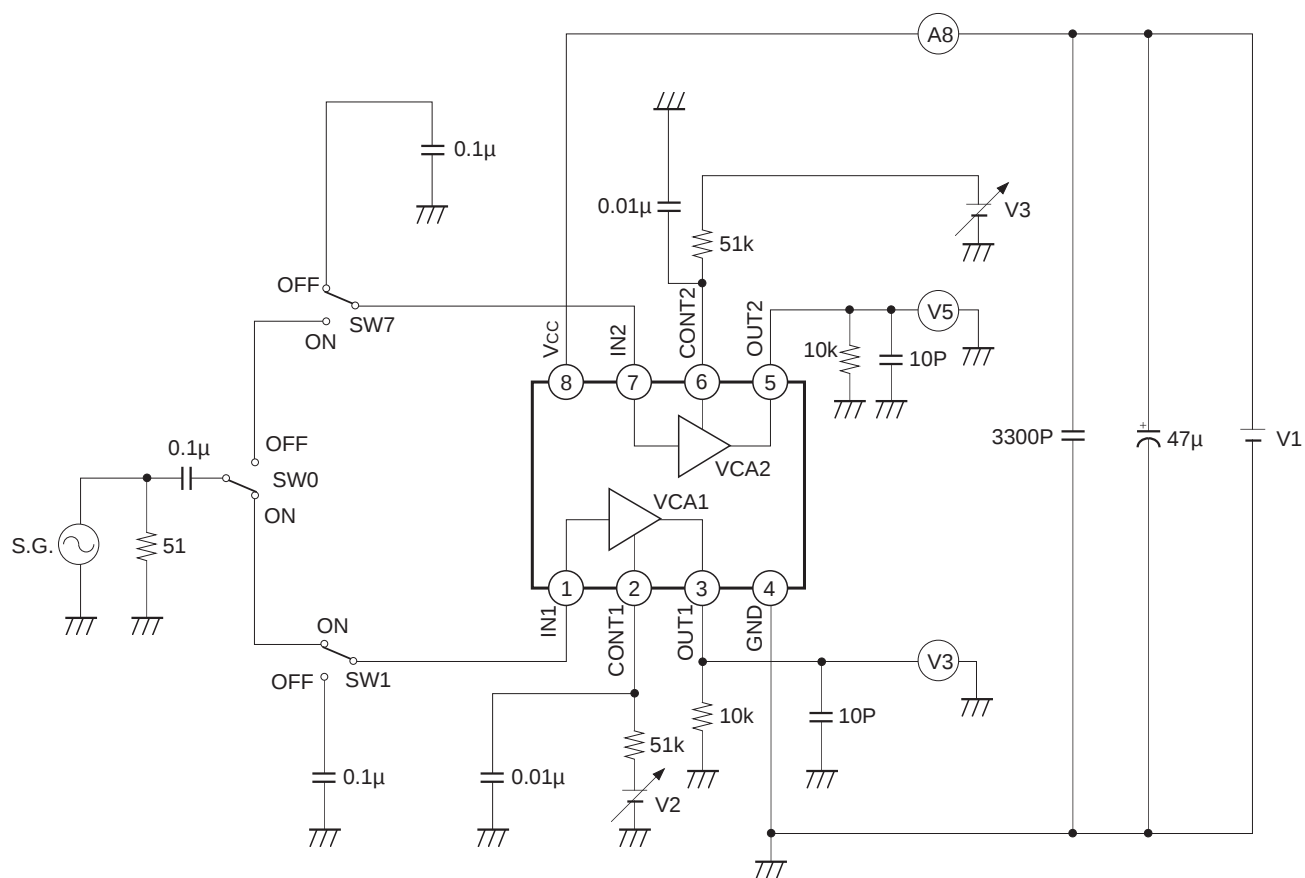
The input dynamic range is at a max of 1.4Vp-p. When the input signal exceeds 1.4Vp-p, the waveform may be clipped and deformed.

Electrical Characteristics

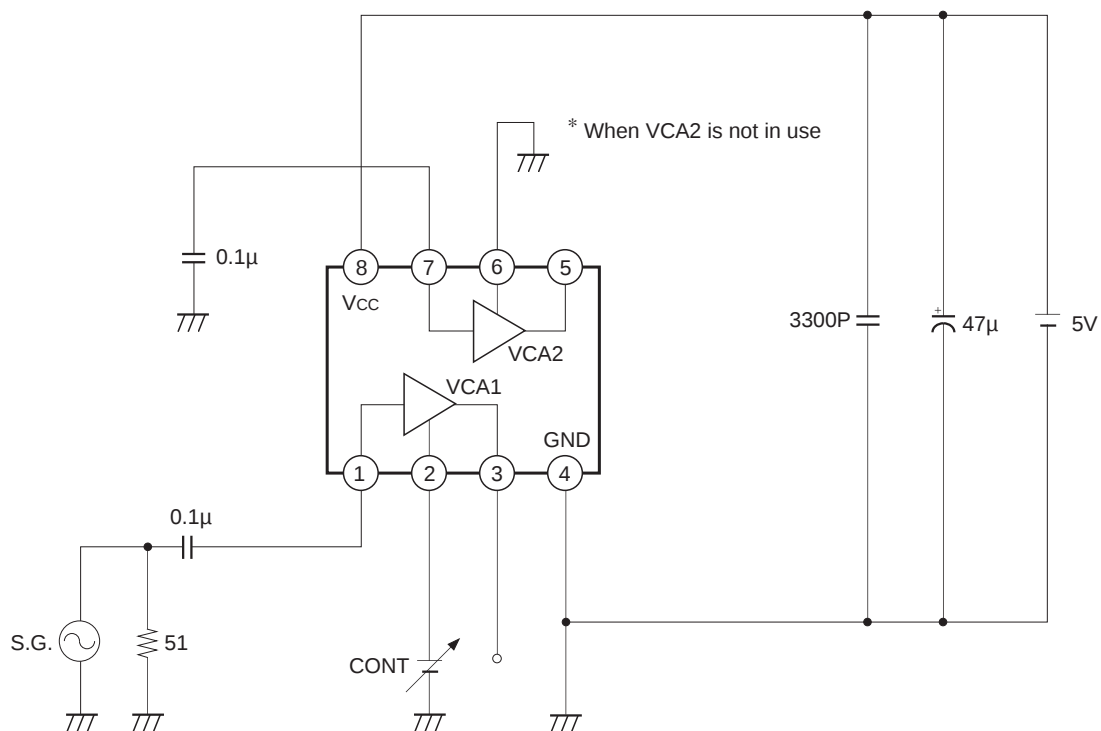
(Ta = 25°C, Vcc = 5.0V, See Electrical Characteristics Test Circuit.)

Item		Symbol	Test conditions					Test point	Test method	Min.	Typ.	Max.	Unit
			Input conditions			CONT voltage (V)	SW set to ON						
			IN	Level	Freq								
Current consumption	1-ch	I _{1CH}				0	0	A8	When only 1ch is used, ch used is set to 2.87V.	2.0	4.0	6.0	mA
	Both-ch	I _{2CH}				2.87				4.5	7.5	12	
Max. gain	CH1	G _{1MAX}	1	500 mVp-p	300 kHz	5.0	0, 1	3		3.0	5.0	7.0	dB
	CH2	G _{2MAX}	7				7	5					
Min. gain	CH1	G _{1MIN}	1	500 mVp-p	300 kHz	1.8	0, 1	3		−7.0	−5.0	−3.0	dB
	CH2	G _{2MIN}	7				7	5					
Frequency characteristics	CH1	V _{F1}	1	500 mVp-p	300k to 20M	2.87	0, 1	3	<u>20MHz level</u> <u>300kHz level</u>	−1.0		+1.3	dB
	CH2	V _{F2}	7				7	5					
Distortion 1	CH1	D _{1CH}	1	1.0 Vp-p	5.0 MHz		0, 1	3	Adjust CONT to obtain 1.0Vp-p at output		−40		dB
	CH2	D _{2CH}	7				7	5					
S/N	CH1	N _{1CH}	1	0.5 Vp-p	100k to 4.2M	1.8	0, 1	3	Test at no signal conditon		61		dB
	CH2	N _{2CH}	7				7	5					

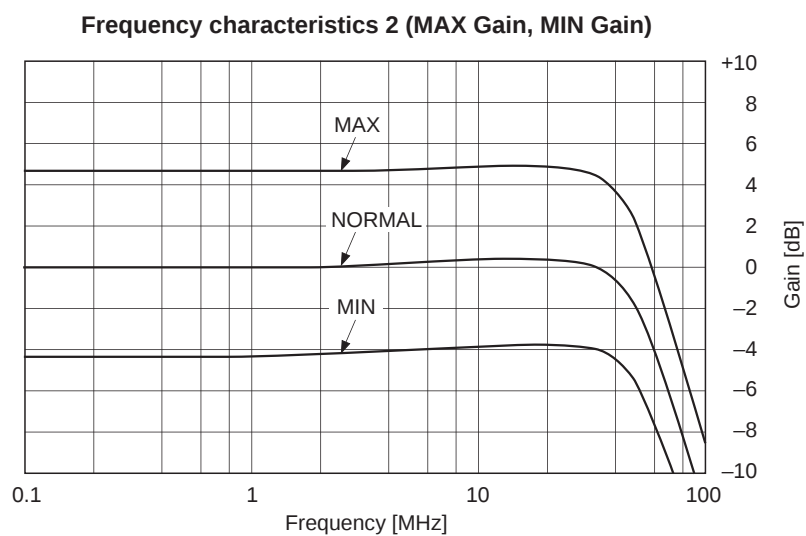
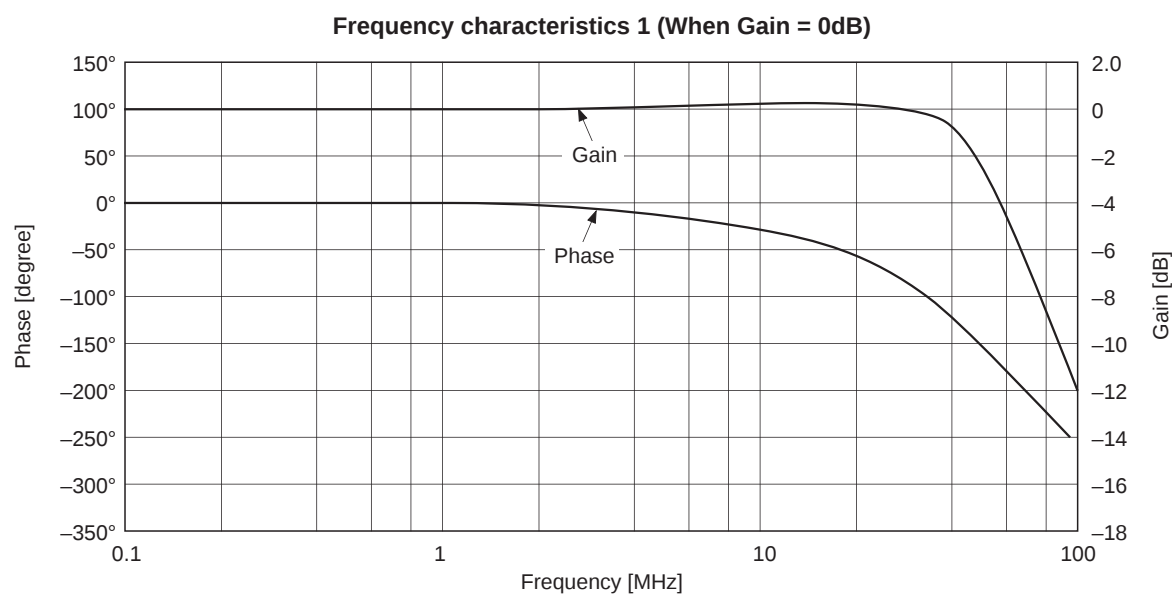
Electrical Characteristics Test Circuit



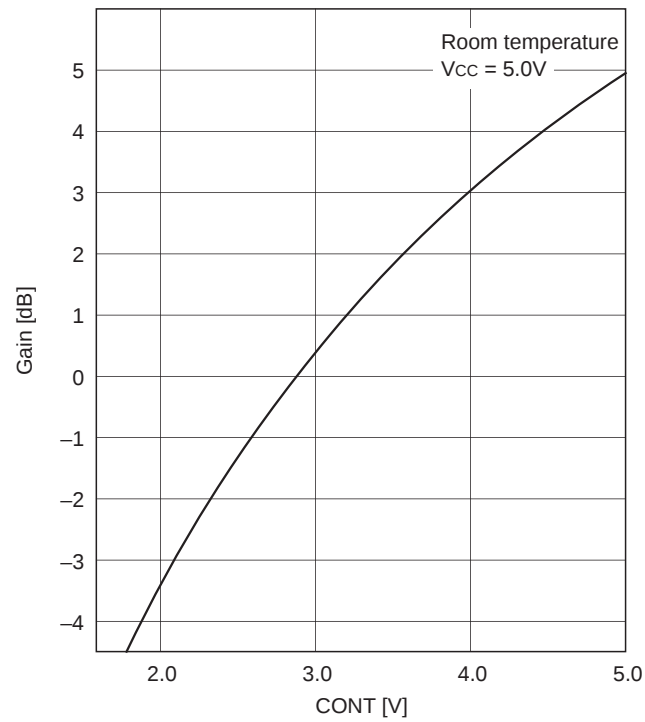
Application Circuit



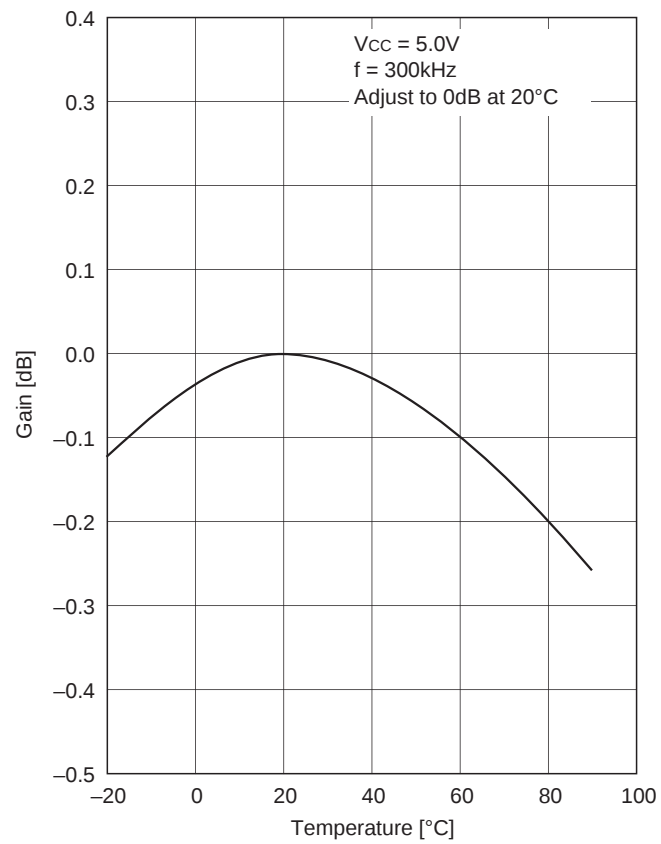
Application circuits shown are typical examples illustrating the operation of the devices. Sony cannot assume responsibility for any problems arising out of the use of these circuits or for any infringement of third party patent and other right due to same.



Gain vs. CONT voltage characteristics



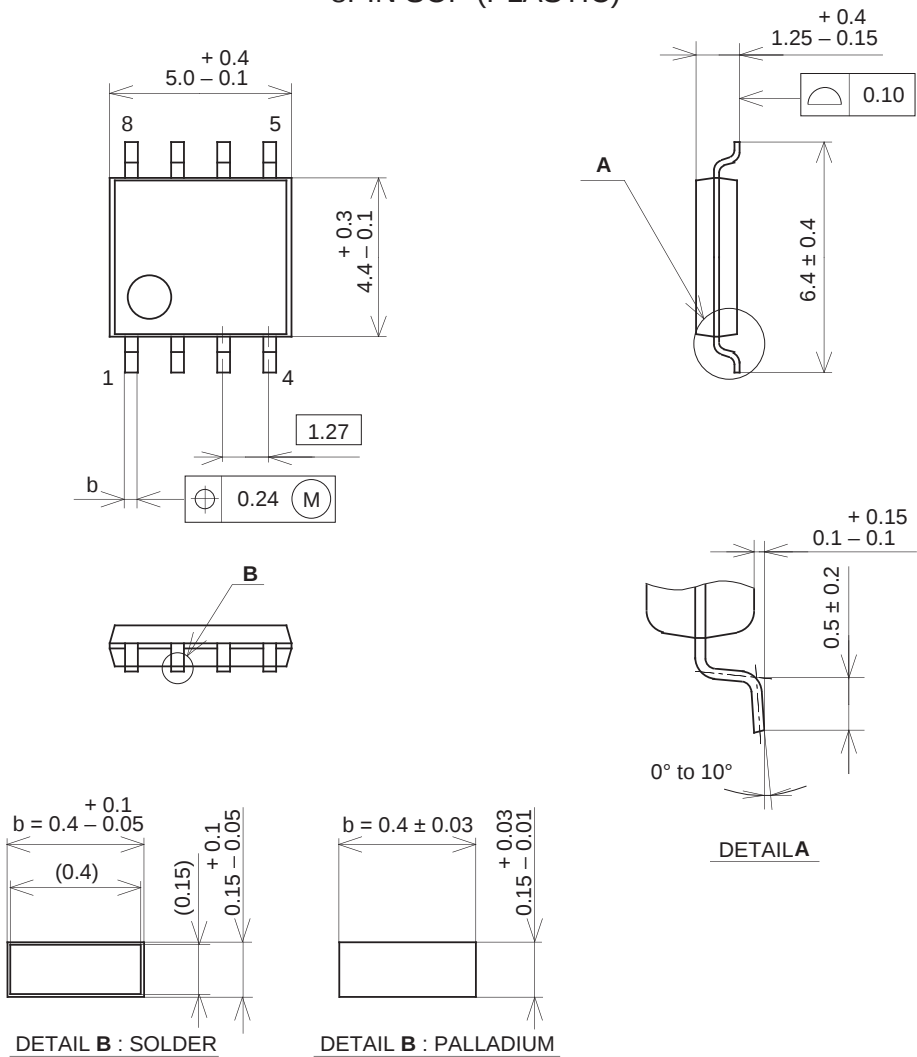
Gain vs. Temperature characteristics



Package Outline

Unit: mm

8PIN SOP (PLASTIC)



PACKAGE STRUCTURE

SONY CODE	SOP-8P-L03
EIAJ CODE	SOP008-P-0225
JEDEC CODE	

PACKAGE MATERIAL	EPOXY RESIN
LEAD TREATMENT	SOLDER/PALLADIUM PLATING
LEAD MATERIAL	42/COPPER ALLOY
PACKAGE MASS	0.1g

NOTE : PALLADIUM PLATING
This product uses S-PdPPF (Sony Spec.-Palladium Pre-Plated Lead Frame).