

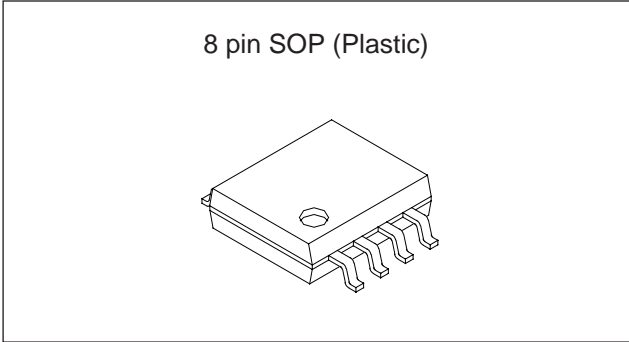
Electronic Volume

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



Applications

Video signals and other wide band VCA

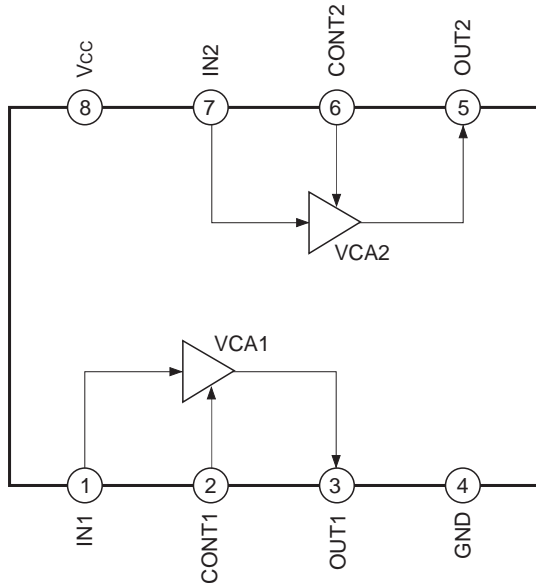
Operating Conditions

Supply voltage	V _{CC}	4.50 to 5.50	V
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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



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Pin Description

Pin No.	Symbol	Voltage		I/O resistance	Equivalent circuit	Description
		DC	AC			
1	IN1	2.5V	1.0Vp-p*	40kΩ		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*	—			<p>Input pin of gain control signal (CH2). At "Low" power save is possible.</p> <p>Low: 1V and below</p>
7	IN2	2.5V	1.0Vp-p*	40kΩ		<p>Signal input pin (CH2)</p>
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

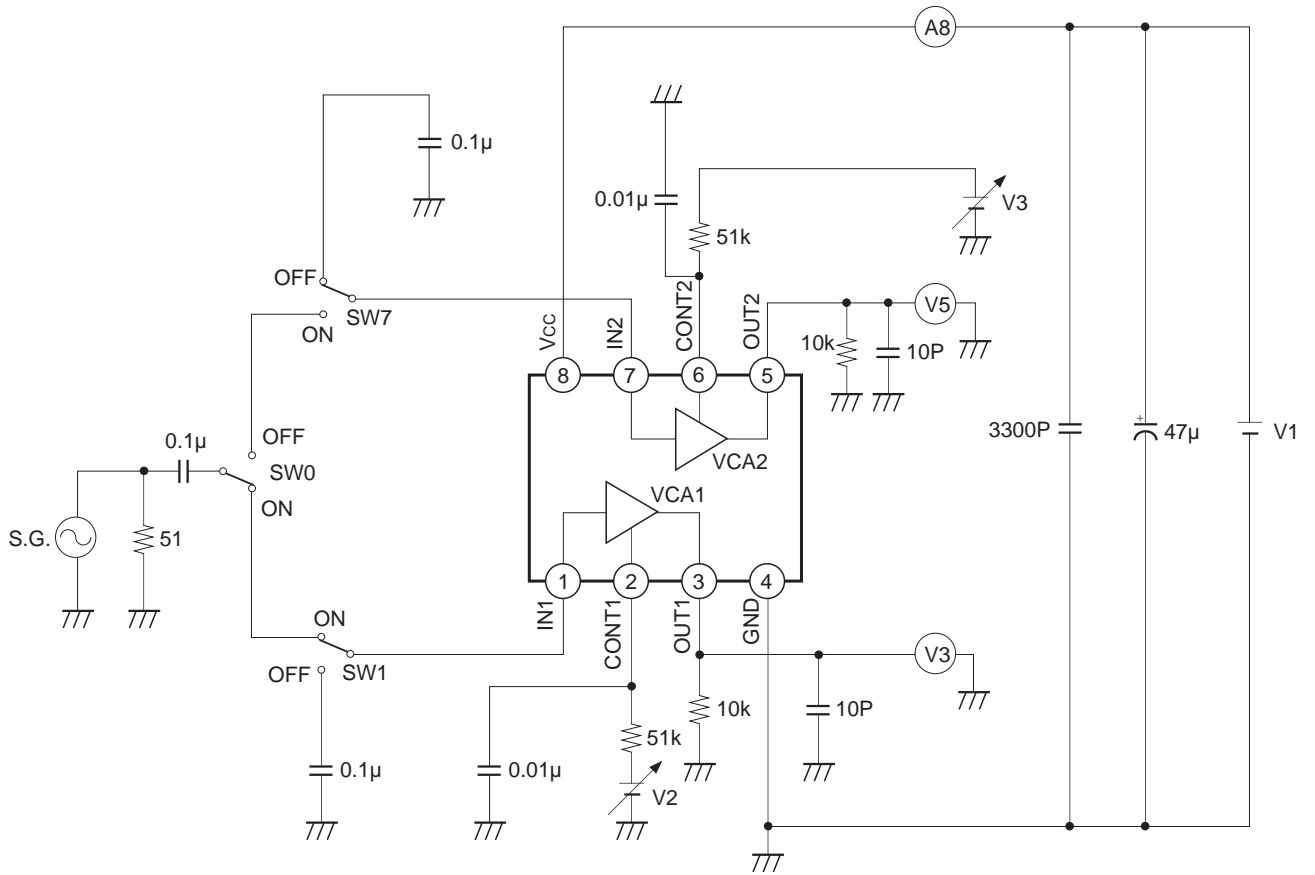
The input dynamic range is at a max of 1.4Vp-p. When the input signal exceeds 1.4Vp-p, the waveform may be clipped and deformed.

Electrical Characteristics

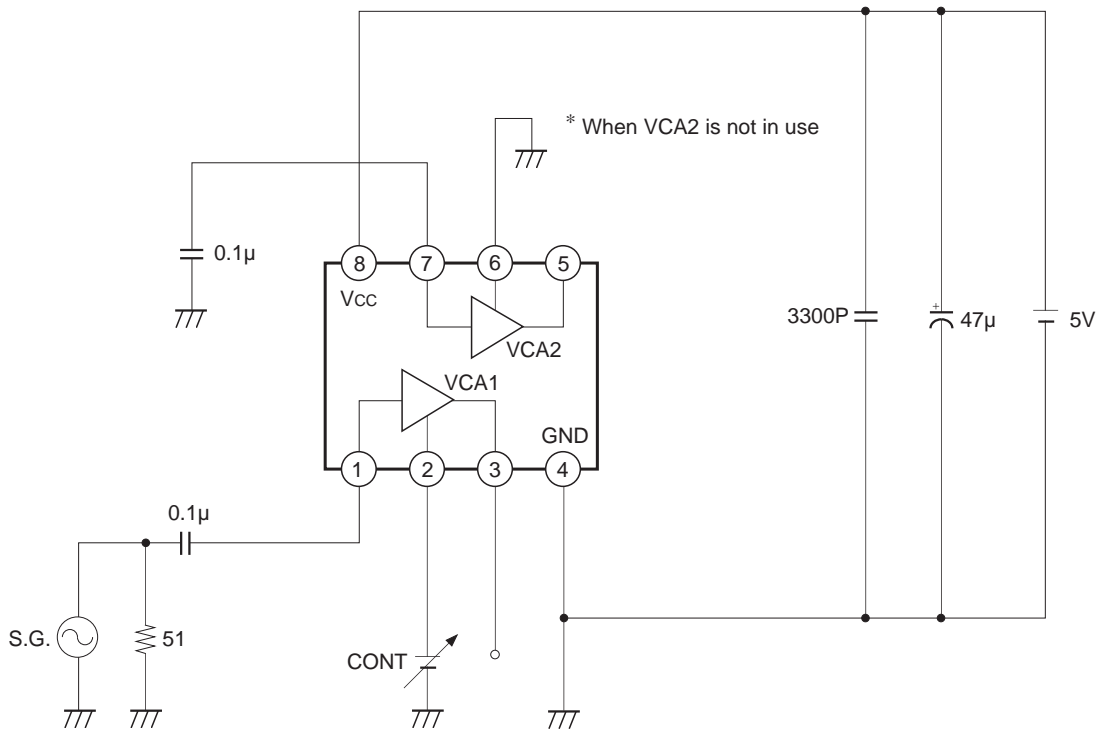
(Ta = 25°C, Vcc = 5.0V, See Electrical Characteristics Test Circuit.)

Item		Symbol	Test conditions					SW set to ON	Test point	Test method	Min.	Typ.	Max.	Unit
			Input conditions			CONT voltage (V)	Freq							
			IN	Level	IN									
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	$\frac{20\text{MHz level}}{300\text{kHz level}}$	-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						

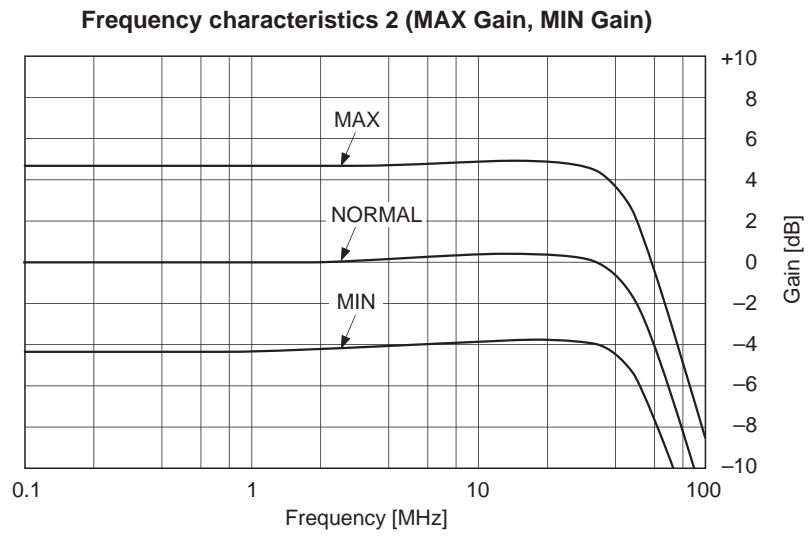
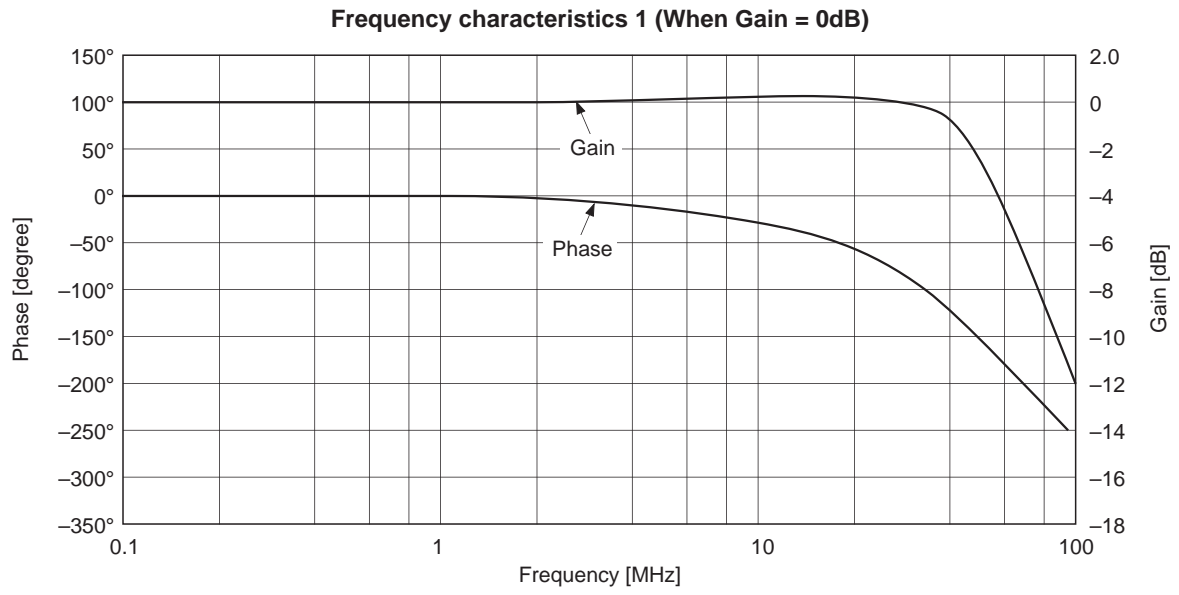
Electrical Characteristics Test Circuit



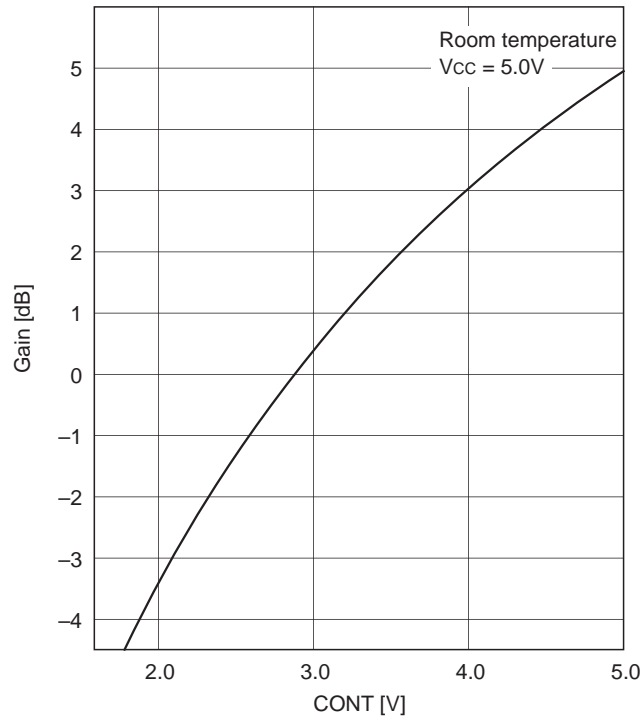
Application Circuit



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Gain vs. CONT voltage characteristics



Gain vs. Temperature characteristics

