Agamem Electronics Inc. **AA8600**

PRELIMINARY **Y/C MIX**

■ FEATURE

1. Y/C mix circuit
2. Output and Chrominance muting function
3. Output protection function
4. SAG correction function
5. A load sufficient for driving two circuits
6. Low power consumption, 60mw typical
7. Internal voltage clamp circuit

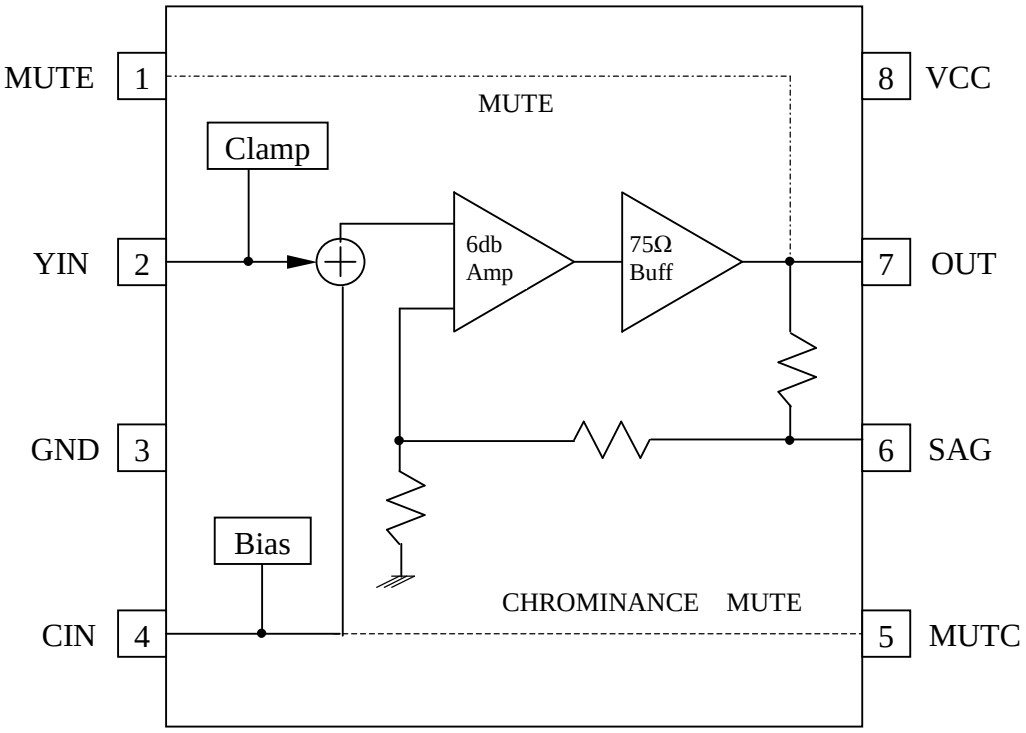
■ APPLICATION

- VCR
- Video Camera
- TV
- Video Player

■ DESCRIPTION

AA8600 is a Y/C mix with 6db gain, 75Ω output buffer and SAG correction. The 75Ω buffer is capable of driving two circuits. The SAG could reduce the capacitance of output coupling capacitor. The Y signal is clamped input, while the C signal is biased input. The power saving circuit provides the output and chrominance muting function. The IC is available in 8-pin TSSOP.

■ BLOCK DIAGRAM & PIN ASSIGNMENT



■ PIN DESCRIPTION

Symbol	Pin-No	Type	Function
MUTE	1	I	Output is muted as this pin is set to high
YIN	2	I	Composite Y input signal is clamped input
GND	3		Ground
CIN	4	I	Chrominance C input signal is bias input
MUTC	5	I	Only chrominance output signal is muted as this pin is set to high
SAG	6	O	SAG correction to reduce the capacitance of output coupling capacitor
OUT	7	O	Y/C mix output. As it is less than 0.6V, the protect circuit is triggered to enable the power saving function
VCC	8		Power supply

■ ABSOLUTE MAXIMUM RATING

Ta = 25 ℃

Parameter	Symbol	Rating			UNIT	CONDITION
		MIN	TYP	MAX		
Supply Voltage	**Vcc**	-0.3		8	V	
Operating Ambient Temperature	**Ta**	-25		75	℃	
Storage Temperature	**Ts**	-55		125	℃	

NOTE : Stress above those listed under “Absolute Maximum Rating” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational section of this specification is not implied. Exposure to absolute maximum rating conditions for the extended periods of time may affect device reliability.

■ ELECTRICAL CHARACTERISTICS

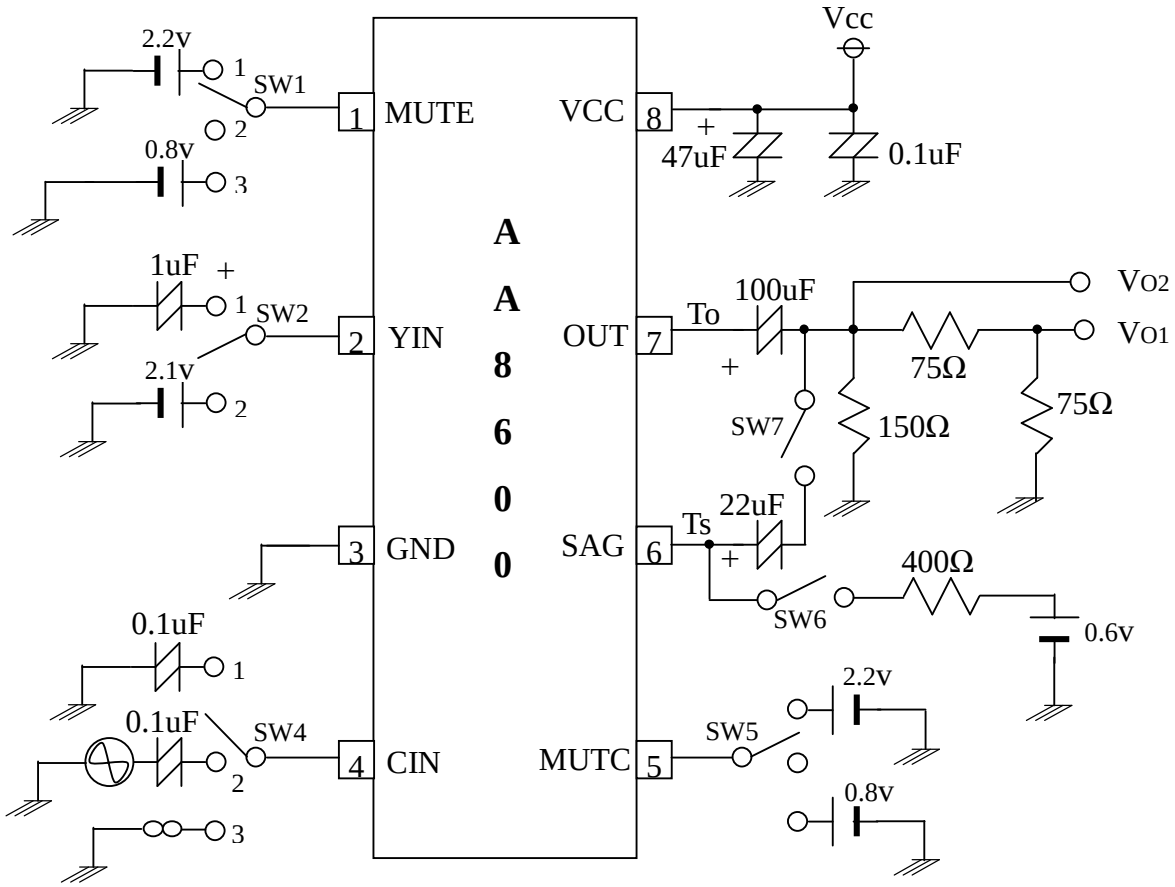
Ta = 25℃ , Vcc = 5V

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Supply Current	**Icc**		12.6	20	mA	No input Signal
Voltage Gain	**Gv**		-0.3		dB	Input Signal Freq = 4.43MHz, 1V_{P-P}, measure V_{O1}
Frequency Characteristic	**G_F**	-1.5	-0.5	0.5	dB	Input Signal Freq = 7MHz/1MHz, 1V_{P-P}, measure V_{O1}
Muting Attenuation	**M_T**		-64		dB	Input Signal Freq = 4.43MHz, 1V_{P-P}, measure V_{O1}
Muting High Level	**V_{MH}**	2.2		Vcc	V	
Muting Low Level	**V_{ML}**	GND		0.8	V	
Input Impedance	**Z_{IN}**	15	20	25	KΩ	CIN, 50uA
Muted Current	**I_M**		1	2.5	mA	MUTE = 'H'
SAG-Terminal Gain	**G_{SAG}**		48		dB	
Differential Gain	**DG**		1	2	%	V_{IN} = 1V_{P-P}, refer staircase signal
Differential Phase	**DP**		1	2.5	deg	V_{IN} = 1V_{P-P}, refer staircase signal

■ MUTE MODE

Function	MUTE	MUTC
Output Muting	H	NA
Chrominance Muting	L	H

■ MEASUREMENT CIRCUIT

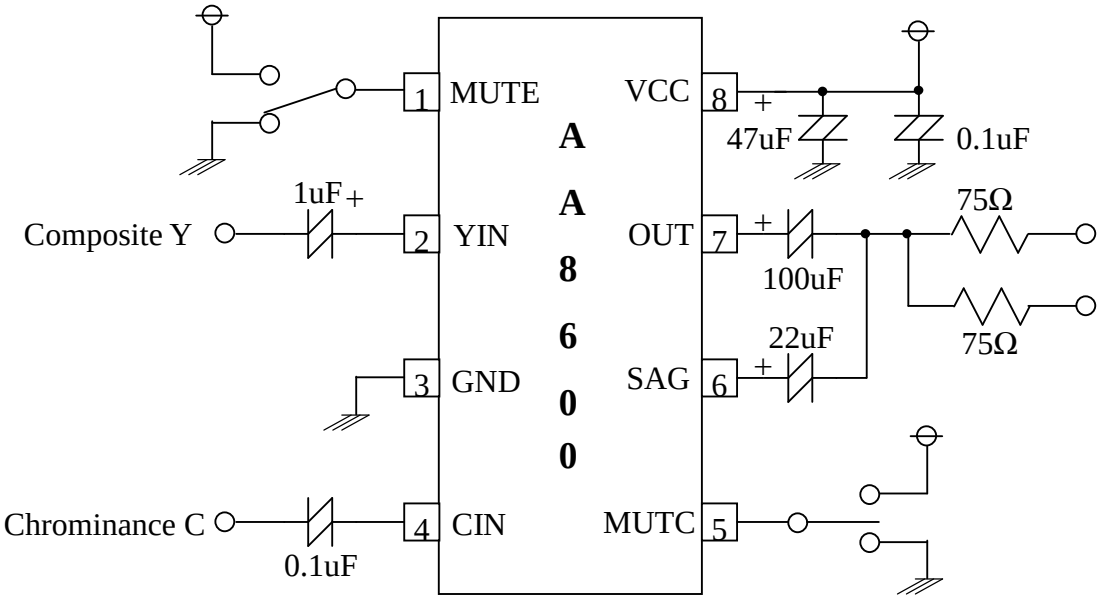
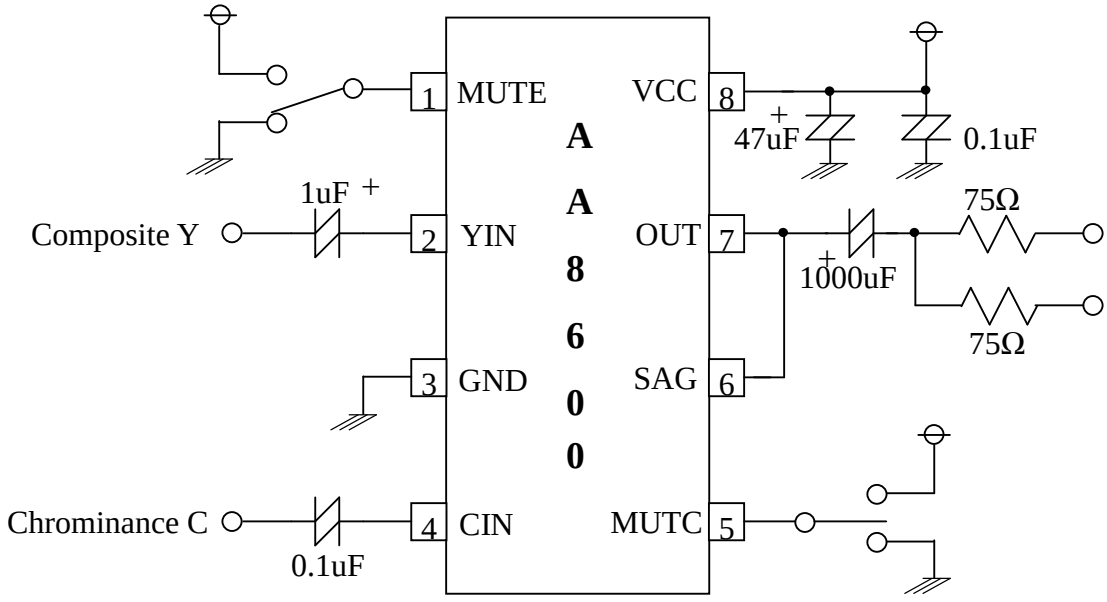


■ MEASUREMENT CONDITIONS

Parameter	Symbol	SW Condition						Measurement Method
		1	2	4	5	6	7	
Supply Current	**Icc**	2	1	1	2	O	C	No signal input
Voltage Gain	**Gv**	3	2	2	3	O	C	Input a 4.43MHz, 1Vp-p sine wave from CIN and then measure the output level from V_{O1}
Frequency Characteristic	**G_F**	3	1	2	3	O	C	**G_{V1M}** : voltage gain at input frequency=1MHz **G_{V7M}** : voltage gain at input frequency=7MHz $G_F=G_{V7M}-G_{V1M}$
Output Mute	**M_T**	1	1	2	3	O	C	Input a 4.43MHz, 1Vp-p sine wave and then measure the output level from V_{O1}
Chrominance Mute	**M_C**	3	2	2	1	O	C	Same as output muting
Input Impedance	**Z_{IN}**	3	1	3	3	O	C	Measure the input voltage V_{IS} & the open voltage V_{IO} when a 50uA is introduced. The $Z_{IN} = \|V_{IS}-V_{IO}\| / 50uA$
Muted Current	**I_M**	1	1	1	2	O	C	Measure the current of power supply when mute is set at high
AG Terminal Gain	**G_{SAG}**	3	2	2	3	O	C	Measure the value of Ts and To at the first as V_{S1} & V_{O1} and the value at second condition as V_{S2} & V_{O2}, respectively. $G_{SAG}= 20\log\{(V_{S2} - V_{S1}) / (V_{O2} - V_{O1})\}$
		3	2	2	3	C	O	

■ APPLICATION

➢ With SAG



➢ Without SAG