

# Video Amplifier Monolithic IC MM1031

## Outline

This IC is a 6dB amp for video signals (Y or composite signals). Gain is fixed at 6dB and it is used in 75 $\Omega$  output circuits.

## Features

1. For video signal (Y or composite) amplification
2. Built-in clamp circuit
3. 75 $\Omega$  driver built in
4. Frequency response        7MHz
5. Current consumption        4mA typ.
6. Power supply voltage       5V

## Package

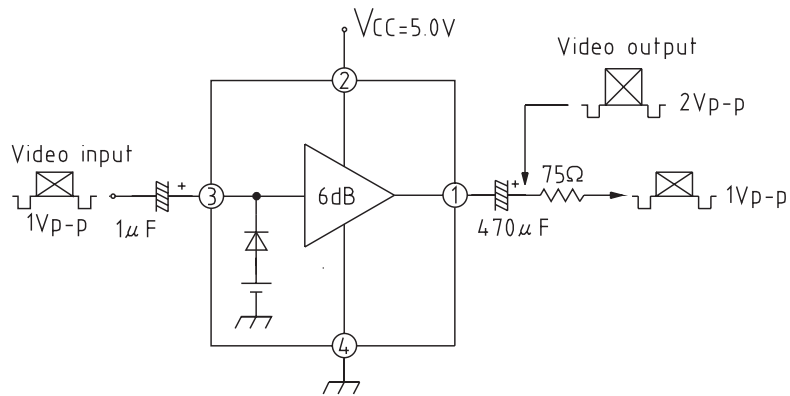
- MMP-4A (MM1031XM)
- SIP-5A (MM1031XS)

## Applications

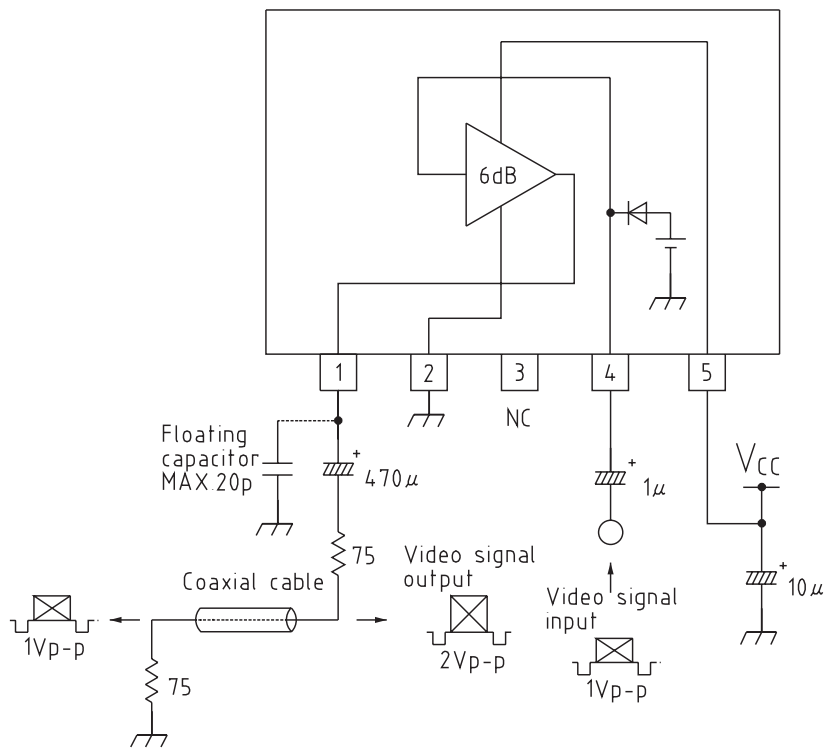
1. TV
2. Free-standing VCanding VCR
3. VCR w3. VCR with camera
4. Ot

Block Diagram

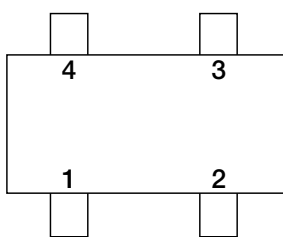
MMP-4A



SIP-5A



Pin Description



MMP-4P

Pin no.		Pin name
MMP-4A	SIP-5A	
1	1	Output
2	5	Vcc
3	4	Input
4	2	GND

**Absolute Maximum Ratings** (Ta=25°C)

Item	Symbol	Ratings	Units
Storage temperature	T <sub>STG</sub>	-40~+125	°C
Operating temperature	T <sub>OPR</sub>	-20~+75	°C
Power supply voltage	V <sub>CC</sub> max.	7	V
Allowable loss	P <sub>D</sub>	200 (MMP-4A) 300 (SIP-5A)	mW

**Electrical Characteristics** (Except where noted otherwise, Ta=25°C, V<sub>CC</sub>=5.0V)

Item	Symbol	Measurement circuit	Measurement conditions	Min.	Typ.	Max.	Units
Operating power supply voltage	V <sub>CC</sub>	V <sub>CC</sub>		4.7	5.0	5.3	V
Consumption current	I <sub>d</sub>	V <sub>CC</sub>			4.0	7.0	mA
Voltage gain	G <sub>v</sub>	TP2	SI Sweep signal, 1V <sub>P-P</sub> , 0.1MHz	5.5	6.0	6.5	dB
Frequency characteristic	f <sub>c1</sub>	TP2	SI Sweep signal, 1V <sub>P-P</sub> 7MHz/0.1MHz *	-1	0	1	dB
Output dynamic range	V <sub>OP-P</sub>	TP2	SI Square wave, 1.5V <sub>P-P</sub> , 16kHz	2.6			V <sub>P-P</sub>
Differential gain	DG	SO	SI Staircase wave, 1V <sub>P-P</sub> , APL=10, 50, 90%		1	3	%
Differential phase	DP	SO	SI Staircase wave, 1V <sub>P-P</sub> , APL=10, 50, 90%		1	3	deg
Input clamping voltage	V <sub>c</sub>	TP1			2.0		V

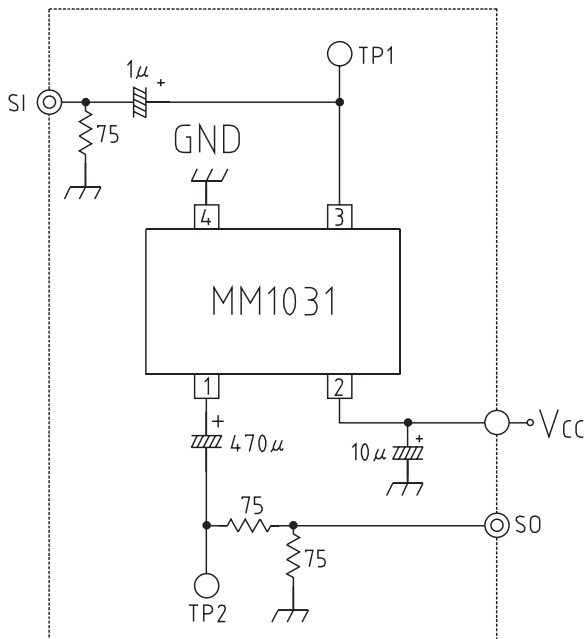
Note : Frequency response f<sub>c</sub>

Given video output for 1.0V<sub>P-P</sub>, 0.1MHz sweep signal input as V1, and output for 7MHz input as V2, f<sub>c1</sub> is obtained as follows.

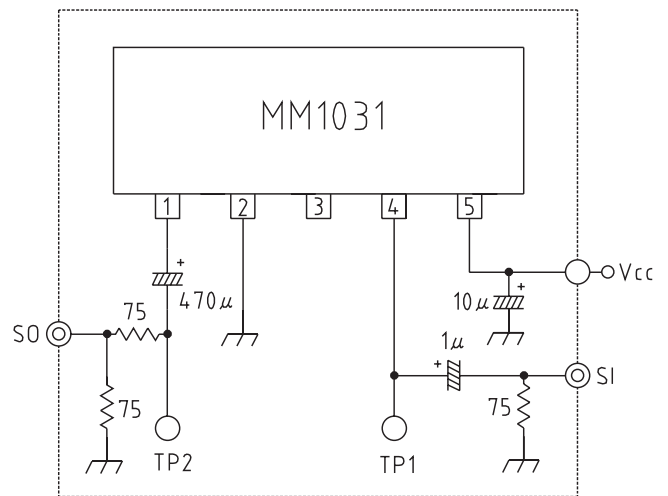
$$f_{c1} = 20 \text{LOG} \frac{V2}{V1} \text{ dB}$$

Measuring Circuit

MMP-4A

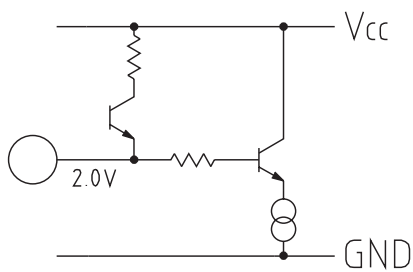


SIP-5A



Equivalent Circuit Diagram

Input pin(MMP:-3P/SIP:-4P)



Output pin(MMP:-1P/SIP:-1P)

