

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 Ω output circuits.

Features

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

Package

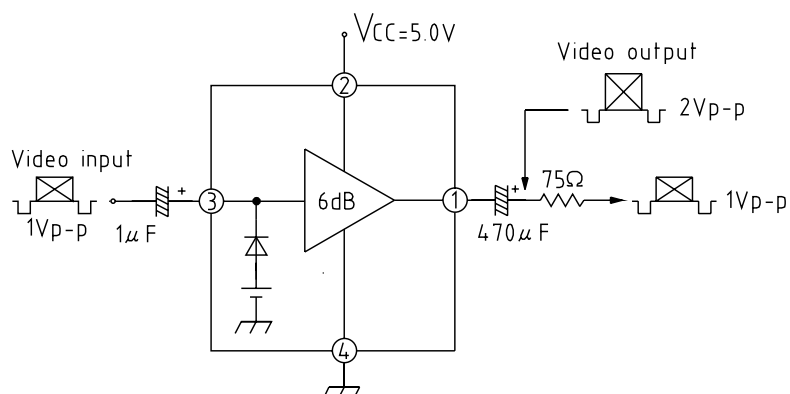
MMP-4A (MM1031XM)
SIP-5A (MM1031XS)

Applications

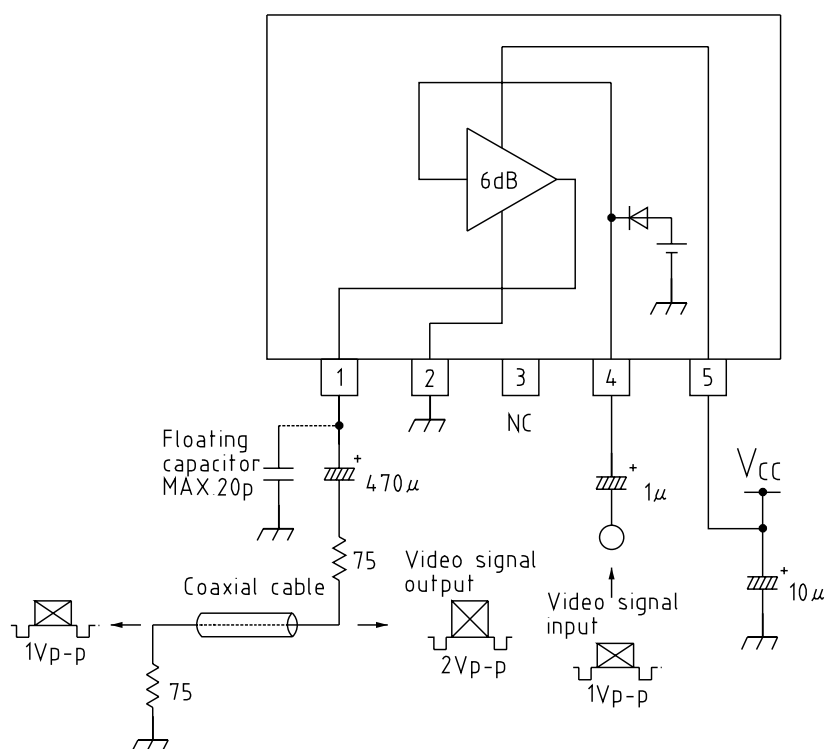
1. TV
2. Free-standing VCanding VCR
3. VCR w3. VCR with camera
4. Ot

Block Diagram

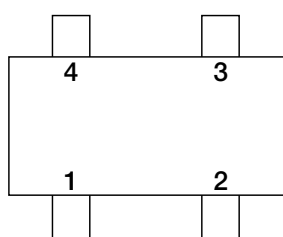
MMP-4A



SIP-5A



Pin Description



MMP-4P

Pin no.		Pin name
MMP-4A	SIP-5A	
1	1	Output
2	5	V _{CC}
3	4	Input
4	2	GND

Absolute Maximum Ratings (Ta=25°C)

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

Electrical Characteristics (Except where noted otherwise, Ta=25°C, V_{CC}=5.0V)

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

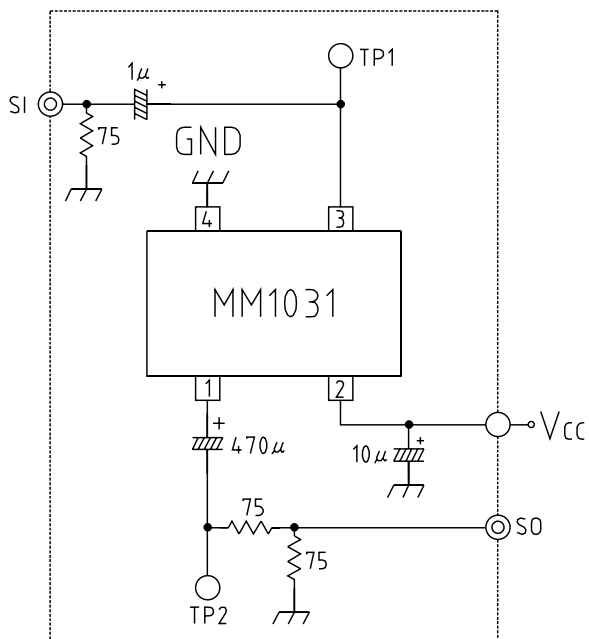
Note : Frequency response f_c

Given video output for 1.0V_{P-P}, 0.1MHz sweep signal input as V₁, and output for 7MHz input as V₂, f_{c1} is obtained as follows.

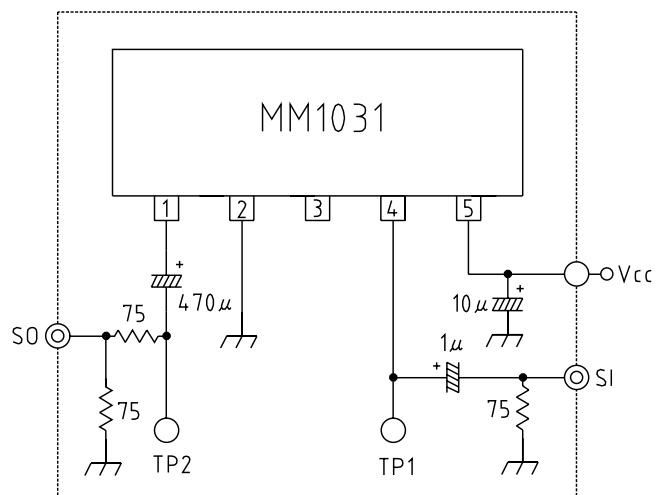
$$f_{c1} = 20 \log \frac{V_2}{V_1} \text{ dB}$$

Measuring Circuit

■ MMP-4A

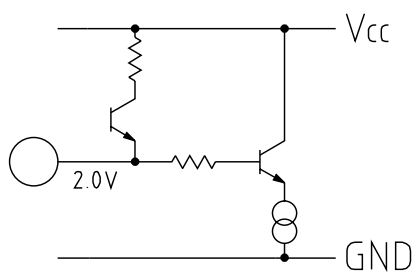


■ SIP-5A



Equivalent Circuit Diagram

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



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

