

Video signal switcher

BA7021

The BA7021 is a switching IC developed for use in VCRs and televisions. It contains a three-channel analog multiplexer, a built-in mute, and video clamp.

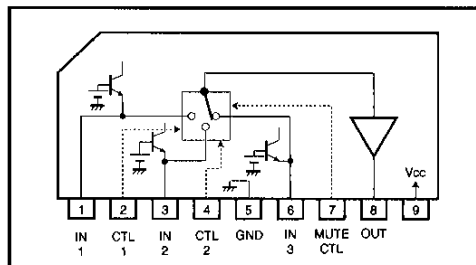
● Applications

Video cassette recorders, televisions and video disc players

● Features

- 1) 3-input / 1-output.
- 2) Built-in video clamp circuit.
- 3) Built-in mute circuit.
- 4) Operates of a 5V (Typ.) power supply and has low power consumption.

● Block diagram



● Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------|------------------|---------|------|
| Power supply voltage | V _{cc} | 10 | V |
| Power dissipation | P _d | 950 * | mW |
| Operating temperature | T _{opr} | -25~60 | °C |
| Storage temperature | T _{stg} | -55~125 | °C |

* Reduced by 9.5mW for each increase in Ta of 1°C over 25°C.

● Electrical characteristics (Unless otherwise specified Ta=25°C and V_{cc}=5.0V)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------|-----------------|------|------|------|------------------|--|
| Operating voltage | V _{cc} | 4.5 | 5.0 | 6.0 | V | — |
| Quiescent current | I _q | — | 5.0 | 8.0 | mA | — |
| Maximum output level | V _{OM} | 1.9 | 2.7 | — | V _{P-P} | Switch operation 1 |
| Voltage gain | G _v | -0.5 | 0.0 | +0.5 | dB | f=1MHz, V _{IN} =2V _{P-P} , Switch operation 1 |
| Interchannel crosstalk | C _T | — | -55 | -45 | dB | f=4.43MHz, V _{IN} =2V _{P-P} , Switch operation 2 |
| Mute function | C _{TM} | — | -50 | -40 | dB | f=4.43MHz, V _{IN} =2V _{P-P} , Switch operation 3 |
| Frequency characteristic | ΔG _v | -0.5 | 0.0 | +0.5 | dB | f=4.43MHz / 1MHz, V _{IN} =2V _{P-P} , Switch operation 1 |
| CTL pin switch level | V _{TH} | 0.1 | 0.7 | 2.0 | V | 2pin, 4pin, 7pin |

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● Measurement circuit

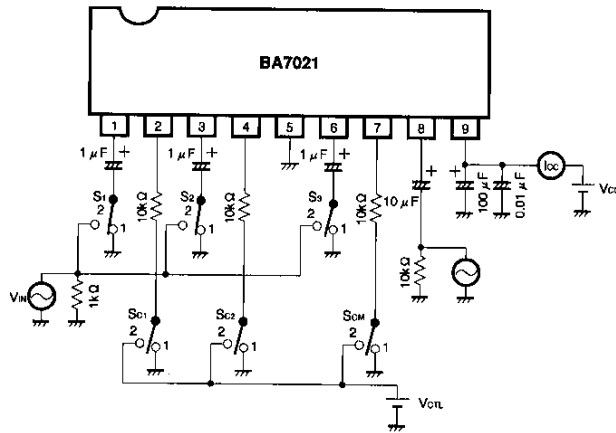
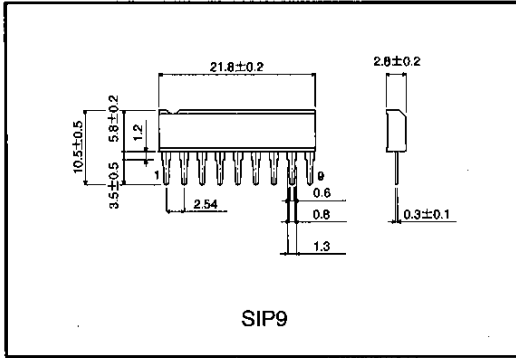


Fig.1

● Switch table

| Measurement parameter | Input mode | S ₁ | S ₂ | S ₃ | Sc ₁ | Sc ₂ | Sc _M | Remarks | |
|-----------------------|-----------------------------|----------------|----------------|----------------|------------------|-----------------|-----------------|------------------|------------------|
| 1 | Input/output characteristic | 1pin | 2 | 1 | 1 | 2 | 1 | 1pin→8pin | |
| | | 3pin | 1 | 2 | 1 | 1 | 2 | 3pin→8pin | |
| | | 6pin | 1 | 1 | 2 | 1 | 1 | 1 | 6pin→8pin |
| 2 | Crosstalk | 1pin | 2 | 1 | 2 | 1 | 1 | Input from pin 3 | |
| | | | 1 | 2 | | | | Input from pin 6 | |
| | | 3pin | 2 | 1 | 1 | 2 | 1 | Input from pin 1 | |
| | | | 1 | 2 | Input from pin 6 | | | | |
| | | 6pin | 2 | 1 | 1 | 1 | 1 | 1 | Input from pin 1 |
| | | | 1 | 2 | | | | Input from pin 3 | |
| 3 | Muting | 1pin | 2 | 1 | 1 | 2 | 1 | 2 | |
| | | 3pin | 1 | 2 | 1 | 1 | 2 | 2 | |
| | | 6pin | 1 | 1 | 2 | 1 | 1 | 1 | 2 |

● External dimensions (Units: mm)



Video signal selection switches

AV switches