

Video signal switcher with test pattern generator

BA7024

The BA7024 is a switching IC with built-in test-signal generator developed for use in VCRs. A frequency divider is used to divide a 500kHz reference signal and produce the horizontal synchronization signal and white signal. The test pattern image is two white lines on a black background.

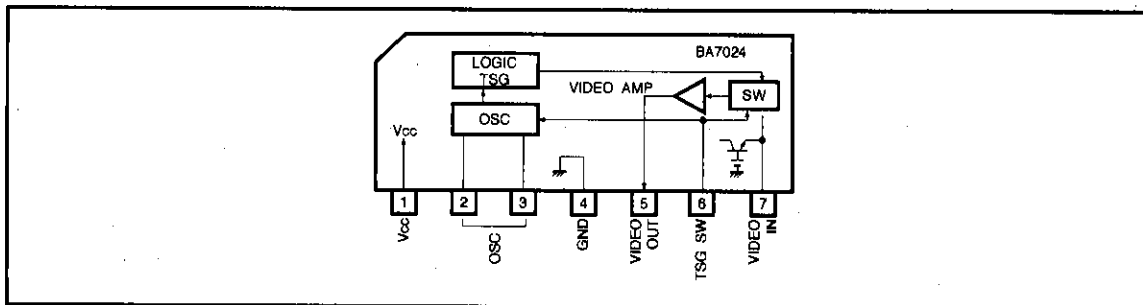
●Applications

Video cassette recorders

●Features

- 1) TSG generator circuit and video signal switch on one chip.
- 2) 5V power supply.
- 3) Small 7-pin SIP package.

●Block diagram



●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------------------|------------------|---------|------|
| Power supply voltage | V _{cc} | 8.0 | V |
| Power dissipation | P _d | 400 * | mW |
| Operating temperature | T _{opr} | -25~60 | °C |
| Storage temperature | T _{stg} | -55~125 | °C |

* Reduced by 4.0mW for each increase in Ta of 1°C over 25°C.

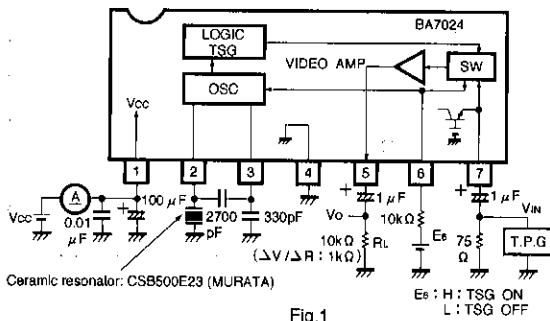
● Recommended operating conditions (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|----------------------|-----------------|------|------|------|------|
| Power supply voltage | V _{CC} | 4.5 | 5.0 | 6.0 | V |

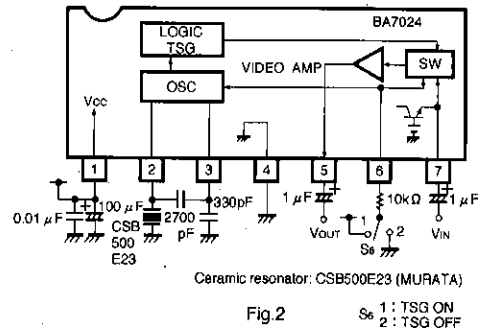
● Electrical characteristics (Unless otherwise specified Ta=25°C and V_{CC}=5V)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions | Measurement circuit |
|--------------------------------|------------------|------|---------|------|------|---|---------------------|
| Circuit current | I _{CC} | — | 7.5 | 11.5 | mA | E _b =3V, TSG operating | Fig.1 |
| <Video amplifier> | | | | | | | |
| Voltage gain | G _v | -0.5 | 0 | 0.5 | dB | f=1MHz, V _{IN} =2V _{p-p} | Fig.1 |
| Frequency characteristic | F | -0.5 | 0 | 0.5 | dB | f=1~5MHz | Fig.1 |
| Crosstalk | CT | -40 | -55 | — | dB | TSG mode, V block oscillation stopped, E _b =3V | Fig.1 |
| <TSG> | | | | | | | |
| V/S ratio | V/S | 7/3 | 6.5/3.5 | 6/4 | — | E _b =3V | Fig.1 |
| Peak level | V _{TSG} | 0.84 | 0.92 | 1.04 | V | E _b =3V | Fig.1 |

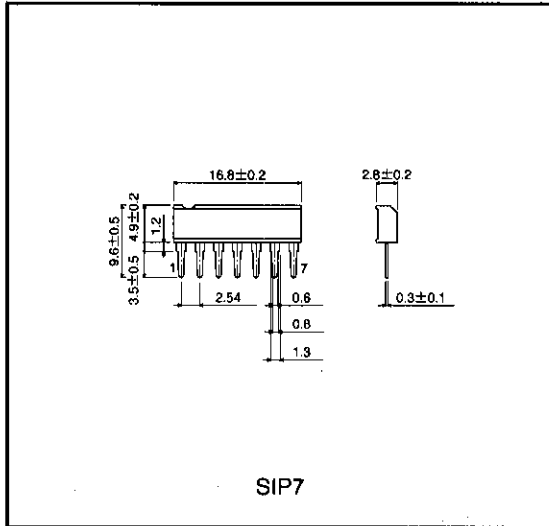
● Measurement circuit



● Application example



●External dimensions (Units: mm)



Test pattern generator

VCR components