

## High-performance Video Driver Series



# Y/C MIX Circuit built-in Video Driver

**BA7664AFV**

No.09065EAT02

### ●Description

BA7664AFV is a 75Ω video driver, packaged in SSOP-B8, incorporating a 6dB amplifier, Y/C MIX circuit, sag compensation, and Mute function. This driver can drive two 75Ω loads. While the composite Y signal input is sync-tip-clamp, the chroma input has an internal termination at 20kΩ. The device also incorporates a power save circuit by activated when the output is under 0.2V.

### ●Features

- 1) A low consumption electric power movement
- 2) Built-in output mute circuit
- 3) Built-in power save circuit
- 4) Built-in output protection circuit
- 5) Low output coupling capacitor value can be used due to a built-in sag compensation circuit
- 6) The driver can have two loads (each channel)
- 7) Built-in Y/C MIX circuit

### ●Applications

DVD, DVC, DSC, STB, and visual instruments.

### ●Absolute maximum ratings (Ta=25°C)

| Parameter                   | Symbol | Limits   | Unit |
|-----------------------------|--------|----------|------|
| Power Supply Voltage        | Vcc    | 8        | V    |
| Power Dissipation           | Pd     | 350 *1   | mW   |
| Operating Temperature Range | Topr   | -25~+75  | °C   |
| Storage Temperature Range   | Tstg   | -55~+125 | °C   |

\*1 At the time of glass epoxy (FR-4) PCB mounting (70mm×70mm×1.6mm).  
Reduce by 3.5 mW/°C over 25°C

### ●Operating range (Ta=25°C)

| Parameter      | Symbol | Min | Typ | Max | Unit |
|----------------|--------|-----|-----|-----|------|
| Supply voltage | Vcc    | 4.5 | 5.0 | 5.5 | V    |

## ●Electrical characteristics

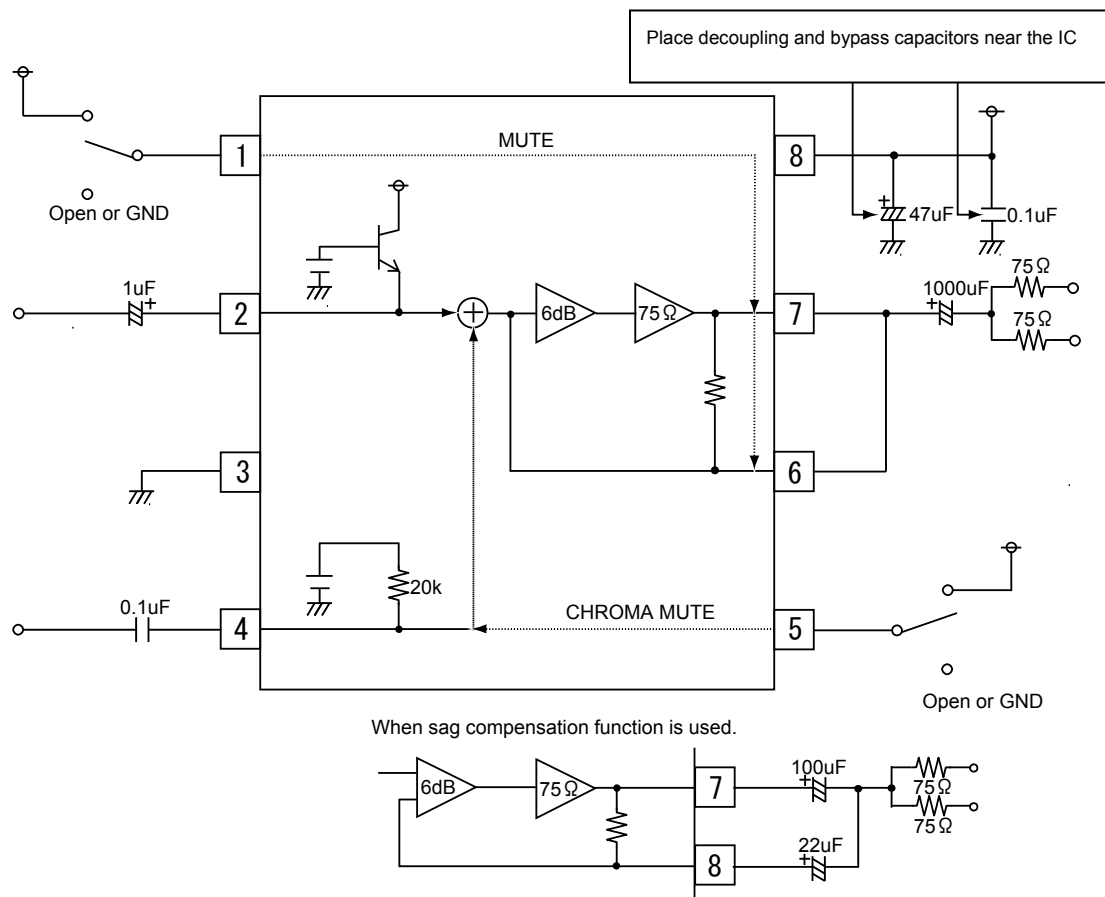
Electrical characteristics (unless otherwise specified,  $V_{CC}=5V$ ,  $T_a=25^\circ C$ )

| Parameter                 | Symbol     | Min  | Typ  | Max      | Unit      | Conditions                        |
|---------------------------|------------|------|------|----------|-----------|-----------------------------------|
| Circuit Current           | $I_{CC}$   | 6.1  | 12.2 | 18.3     | mA        | No-signal                         |
| Maximum Output Level      | $V_{om}$   | 2.6  | 3.0  | -        | $V_{P-P}$ | $f=1kHz$ , $THD=1\%$ $V_{O2}$     |
| Voltage Gain              | $G_V$      | -1.0 | -0.2 | 0.6      | dB        | $f=4.43MHz$ , $1V_{pp}/V_{O1}$    |
| Frequency Characteristics | $G_F$      | -1.5 | -0.5 | 0.5      | dB        | $f=7MHz/1MHz$ , $1V_{P-P}/V_{O1}$ |
| MUTE Attenuation          | $M_T$      | -    | -60  | -        | dB        | $f=4.43MHz$ , $1V_{P-P}/V_{O1}$   |
| Mute Threshold "H"        | $V_{THH}$  | 2.2  | -    | $V_{CC}$ | V         | -                                 |
| Mute Threshold "L"        | $V_{THL}$  | 0    | -    | 0.7      | V         | -                                 |
| Input Impedance           | $Z_{IN}$   | 16   | 20   | 24       | $k\Omega$ | Chroma input terminal             |
| Supply Current in Mute    | $I_{MUTE}$ | -    | 1.3  | 2.6      | mA        | MUTEA "H"                         |

Guaranteed design parameters (unless otherwise specified,  $V_{CC}=5V$ ,  $T_a=25^\circ C$ )

| Parameter          | Symbol | Min | Typ | Max | Unit | Conditions                                  |
|--------------------|--------|-----|-----|-----|------|---------------------------------------------|
| Differential Gain  | DG     | -   | 1.0 | 2.0 | %    | $V_{IN}=1V_{P-P}$ Standard staircase signal |
| Differential Phase | DP     | -   | 0.5 | 2.0 | DEG  | $V_{IN}=1V_{P-P}$ Standard staircase signal |

## ●Block diagram / Application circuit



※ Make sure to take into account the tolerance characteristics of the external components, as well as the IC power dissipation limits.

Fig.1

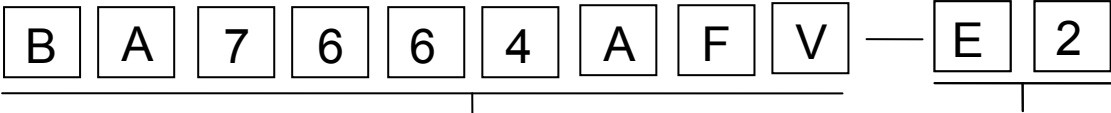
### ●Equivalent circuit

| Pin.No | Pin name           | IN | OUT | Voltage       | Equivalent circuit | Function                                                                                                                                                                          |
|--------|--------------------|----|-----|---------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1<br>5 | MUTEA<br>MUTEB     | ○  | —   | —             |                    | Mute control terminal<br><br>Pin1 MUTEA - "H" = mute on<br>Pin5 MUTEB - "H" = only<br>chroma mute on                                                                              |
| 2      | Y <sub>IN</sub>    | ○  | —   | 2.0V          |                    | Signal input terminal<br><br>Sync-tip-clamp input for the<br>composite Y signal.                                                                                                  |
| 3      | GND                | —  | —   | 0V            |                    | Ground terminal                                                                                                                                                                   |
| 4      | C <sub>IN</sub>    | ○  | —   | 2.0V          |                    | Signal input terminal<br><br>This pin is a chroma signal<br>input. Input terminal is 20kΩ.                                                                                        |
| 6<br>7 | MIXOUT2<br>MIXOUT1 | —  | ○   | 0.9V<br>0.95V |                    | Signal output terminal<br><br>Pin7 is Y/C MIX signal<br>output terminal.<br>Power save mode is active<br>when output is set under<br>0.2V.<br>Pin6 is a sag compensator<br>input. |
| 8      | V <sub>CC</sub>    | —  | —   | 5.0V          |                    | Power supply terminal                                                                                                                                                             |

### ●Cautions on use

- Numbers and data in entries are representative design values and are not guaranteed values of the items.
- Although ROHM is confident that the example application circuit reflects the best possible recommendations, be sure to verify circuit characteristics for your particular application. Modification of constants for other externally connected circuits may cause variations in both static and transient characteristics for external components as well as this ROHM IC. Allow for sufficient margins when determining circuit constants.
- Absolute maximum ratings  
Use of the IC in excess of absolute maximum ratings, such as the applied voltage or operating temperature range (Topr), may result in IC damage. Assumptions should not be made regarding the state of the IC (short mode or open mode) when such damage is suffered. A physical safety measure, such as a fuse, should be implemented when using the IC at times where the absolute maximum ratings may be exceeded.
- GND potential  
Ensure a minimum GND pin potential in all operating conditions. Make sure that no pins are at a voltage below the GND at any time, regardless of whether it is a transient signal or not.
- Thermal design  
Perform thermal design, in which there are adequate margins, by taking into account the permissible dissipation (Pd) in actual states of use.
- Short circuit between terminals and erroneous mounting  
Pay attention to the assembly direction of the ICs. Wrong mounting direction or shorts between terminals, GND, or other components on the circuits, can damage the IC.
- Operation in strong electromagnetic field  
Using the ICs in a strong electromagnetic field can cause operation malfunction.

●Selection of order type

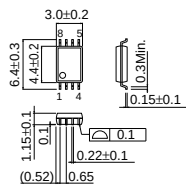


TYPE  
BA7664AFV

Package, Foaming specifications

SSOP-B8

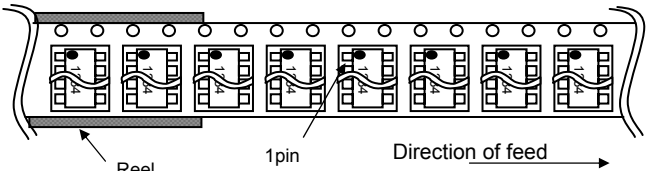
<Dimension>



(Unit:mm)

<Tape and Reel information>

|                   |                                                                                                                                                             |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tape              | Embossed carrier tape                                                                                                                                       |
| Quantity          | 2500pcs                                                                                                                                                     |
| Direction of feed | E2<br>(Correct direction: 1pin of product should be at the upper left when you hold reel with the left hand, and you pull out the tape with the right hand) |



※Orders are available in complete units only.

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