

### 3-INPUT VIDEO SUPER IMPOSER WITH 75Ω DRIVER

■ GENERAL DESCRIPTION

NJM2263 is 3-input, 1-output video switch with 75Ω driver circuit.

Two input are provided with sink chip clamp function, which adjust the DC level of video signal.

The other input of transistor open base can make control of luminance signal.

This video switch can be connected to TV monitor directly, as it has 75Ω driver circuit internally. NJM2263 is a high performance video switch with 10MHz frequency range and 70dB (at 4.43MHz) crosstalk, which is operated with 5V supply voltage.

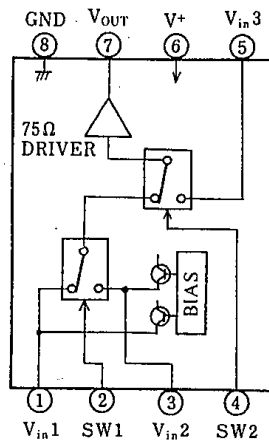
■ FEATURES

- Wide Operating Voltage (4.75~13V)
- 3 Input, 1 - Output
- Internal 75Ω Driver Circuit
- Internal Sink Chip Clamp Function (V<sub>IN1</sub>, V<sub>IN2</sub>)
- Internal luminance Signal Control Function (V<sub>IN3</sub>)
- Crosstalk 70dB(at 4.43MHz)
- Wide Operating Frequency Range 10MHz(2V<sub>P-P</sub> input)
- Package Outline DIP8, DMP8, SIP8
- Bipolar Technology

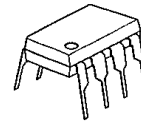
■ APPLICATIONS

- VCR, Video Camera, AV-TV, Video Disc Player.

■ BLOCK DIAGRAM



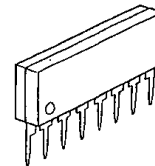
■ PACKAGE OUTLINE



NJM2263D



NJM 2263M



NJM 2263L

5

## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

| PARAMETER                   | SYMBOL           | RATINGS    | UNIT |
|-----------------------------|------------------|------------|------|
| Supply Voltage              | V <sup>+</sup>   | 15         | V    |
| Power Dissipation           | P <sub>d</sub>   | (DIP8) 500 | mW   |
|                             |                  | (DMP8) 300 | mW   |
|                             |                  | (SIP8) 800 | mW   |
| Operating Temperature Range | T <sub>opr</sub> | -20~+75    | °C   |
| Storage Temperature Range   | T <sub>stg</sub> | -40~+125   | °C   |

## ■ ELECTRICAL CHARACTERISTICS

(V<sup>+</sup>=5V, Ta=25±2°C)

| PARAMETERS                 | SYMBOLS         | TEST CONDITIONS   | MIN. | TYP. | MAX. | UNIT |
|----------------------------|-----------------|---|------|------|------|------|
| Recommended Supply Voltage | V <sup>+</sup>  |   | 4.75 | —    | 13.0 | V    |
| Operating Current          | I <sub>cc</sub> | S1=S2=S3=S4=S5=2  | —    | 16.5 | 23.0 | mA   |
| Voltage Gain               | G <sub>v</sub>  | V <sub>in</sub> =2.0V <sub>p-p</sub> , 100kHz V <sub>o</sub> /V <sub>i</sub>          | -0.8 | -0.3 | +0.2 | dB   |
| Frequency Characteristics  | G <sub>f</sub>  | V <sub>in</sub> =2.0V <sub>p-p</sub> , V <sub>o</sub> (10MHz)/V <sub>o</sub> (100kHz) | -1.0 | 0    | +1.0 | dB   |
| Differential Gain          | DG              | V <sub>in</sub> =2.0V <sub>p-p</sub> , Staircase, R <sub>L</sub> =150Ω                | —    | 0.3  | —    | %    |
| Differential Phase         | DP              | V <sub>in</sub> =2.0V <sub>p-p</sub> , Staircase, R <sub>L</sub> =150Ω                | —    | 0.3  | —    | deg  |
| Output Offset Voltage      | V <sub>os</sub> | S1=S2=S3=2, S4=2 → 1  | -30  | 0    | +30  | mV   |
| Crosstalk                  | CT              | V <sub>i</sub> =2.0V <sub>p-p</sub> , 4.43MHz   |      | -70  |      | dB   |
|                            |                 | V <sub>o</sub> /V <sub>i</sub><br>V <sub>in3</sub> Biased (note 2)                    | 2.4  | —    |      | dB   |
| Switch change Voltage      | V <sub>CH</sub> | Switch High Level Voltage   | —    | —    |      |      |
|                            | V <sub>CL</sub> | Switch Low Level Voltage  | —    | —    | 0.8  | V    |

Note 1) Unless otherwise specified, tested with the following conditions.

a) S1=1 S2=S3=S4=S5=2 b) S2=S4=1, S1=S3=S5=2 c) S3=S5=1, S1=S2=1, S4=1 or 2

Note 2) Tested with the following conditions.

a) S1=S4=1, S2=S3=2, S5=1 and 2 b) S2=1, S1=S3=S4=2, S5=1 and 2 c) S3=1, S1=S2=S5=2, S4=1 and 2

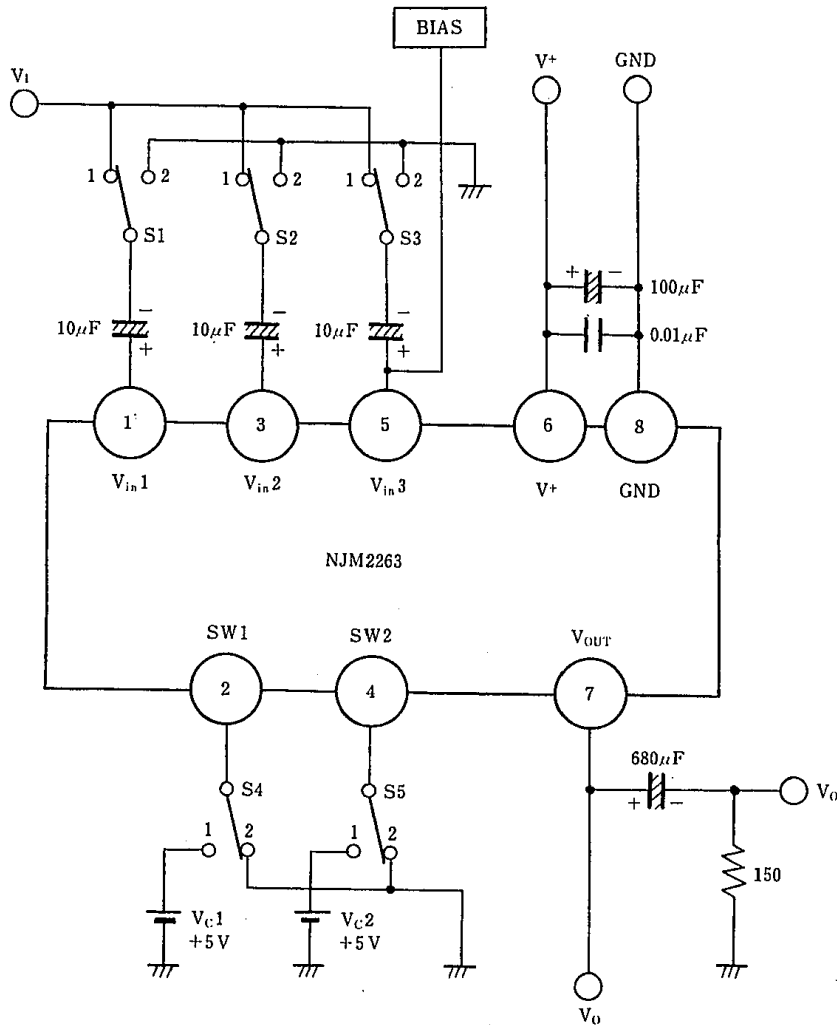
Note 3) The Clamp Input Voltage of Vin 1 and Vin 2 is approximately, (2×V<sup>+</sup>)/5. (In case of V<sup>+</sup>=5V, about 20V)

## ■ SWITCH CONTROL SIGNAL-OUTPUT SIGNAL

| SW1 | SW2 | OUTPUT SIGNAL    |
|-----|-----|------------------|
| L   | L   | V <sub>in1</sub> |
| H   | L   | V <sub>in2</sub> |
| L/H | H   | V <sub>in3</sub> |

5

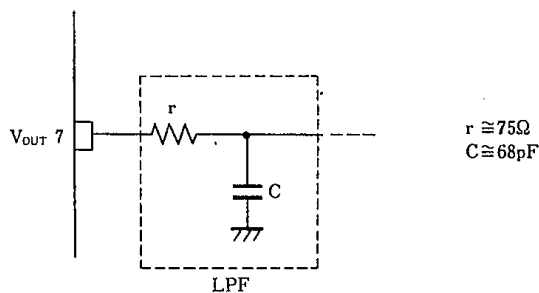
## TEST CIRCUIT



## APPLICATION

Oscillation Prevention on light loading conditions  
Recommended under circuit

This IC requires  $1M\Omega$  resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.



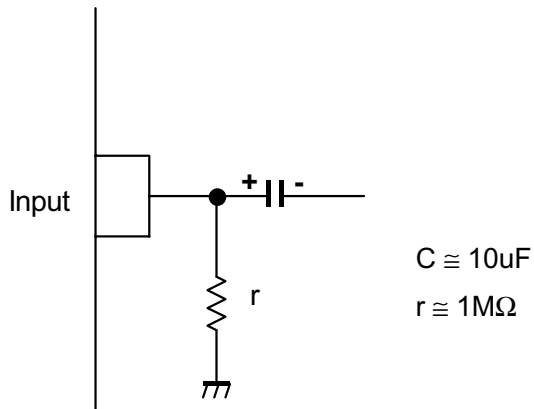
■ EQUIVALENT CIRCUIT

| PIN NO. | PIN FUNCTION      | INSIDE EQUIVALENT CIRCUIT | PIN NO. | PIN FUNCTION      | INSIDE EQUIVALENT CIRCUIT |
|---------|-------------------|---------------------------|---------|-------------------|---------------------------|
| 1       | V <sub>IN 1</sub> |                           | 5       | V <sub>IN 3</sub> |                           |
| 2       | SW 1              |                           | 6       | V+                |                           |
| 3       | V <sub>IN 2</sub> |                           | 7       | V <sub>OUT</sub>  |                           |
| 4       | SW 2              |                           | 8       | GND               |                           |

5

## ■APPLICATION

This IC requires  $1\text{M}\Omega$  resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.



This IC requires  $0.1\mu\text{F}$  capacitor between INPUT and GND,  $1\text{M}\Omega$  resistance between INPUT and GND for clamp type input at mute mode.

