

2-INPUT SINGLE VIDEO SWITCH

■ GENERAL DESCRIPTION

The NJM2233B is 2-input signal video switch selecting one of two video or audio signals. Its operating voltage is 4.75 to 13V and bandwidth is 10MHz. Crosstalk is 70dB (at 4.43MHz). It is applied to both NTSC and PAL VTR.

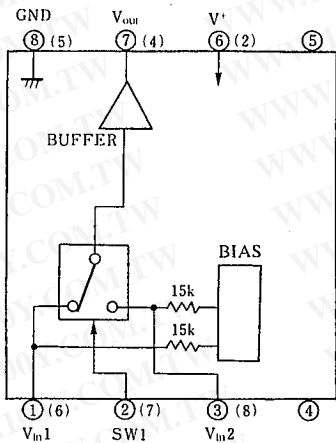
■ FEATURES

- Operating Voltage (4.75V~+13V)
- 2 Input-1 Output
- Crosstalk 70dB (at 4.43MHz)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

■ APPLICATION

- VCR Video Camera AV-TV Video Disc Player Audio

■ BLOCK DIAGRAM



○ DIP-8, DMP-8 (4, 5pin NC)
 () SIP-8 (1, 3pin NC)

■ PACKAGE OUTLINE



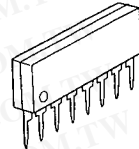
NJM2233BD



NJM2233BM

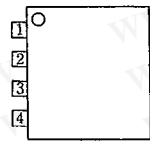


NJM2233BV



NJM2233BL

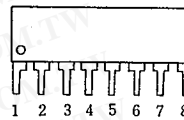
■ PIN CONFIGURATION



NJM2233BD
 NJM2233BM
 NJM2233BV

PIN FUNCTION

1. Vin1
2. SW1
3. Vin2
4. N.C.
5. N.C.
6. V+
7. Vout
8. GND



NJM2233BL

PIN FUNCTION

1. N.C.
2. V+
3. N.C.
4. Vout
5. GND
6. Vin1
7. SW1
8. Vin2

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■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------------|--------|-------------|------|
| Supply Voltage | V* | 15 | V |
| Power Dissipation | Pd | (DIP8) 500 | mW |
| | | (DMP8) 300 | mW |
| | | (SIP8) 800 | mW |
| | | (SSOP8) 250 | mW |
| Operating Temperature Range | Topr | -20~+75 | °C |
| Storage Temperature Range | Tstg | -40~+125 | °C |

■ ELECTRICAL CHARACTERISTICS

(V*=5V, Ta=25°C)

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|------------------------------|--------|--|------|------|------|------|
| Operating Voltage | V* | | 4.75 | — | 13.0 | V |
| Operating Current | ICC | S1=S2=S3=1 | — | 8.5 | 11.0 | mA |
| Frequency Characteristic (1) | Gf1 | Vi=2.5Vpp Vo(20Hz)/Vo (100kHz) | — | 0 | ±1.0 | dB |
| Frequency Characteristic (2) | Gf2 | Vi=2.0Vpp Vo(10MHz)/Vo(100kHz) | — | 0 | ±1.0 | dB |
| Voltage Gain | Gv | Vi=2.5Vpp, 100kHz, Vo/Vi | -0.5 | 0 | — | dB |
| Total Harmonic Distortion | THD | Vi=2.5Vpp, 1kHz | — | 0.01 | — | % |
| Differential Gain | DG | Vi=2Vpp standard staircase signal | — | 0 | — | % |
| Differential Phase | DP | Vi=2Vpp standard staircase signal | — | 0 | — | deg |
| Output Offset Voltage | Voff | S1=S2=1, S3=1→2, Vo voltage change | — | 0 | ±15 | mV |
| Crosstalk | CT | (S1=S3=1, S2=2) and (S1=S3=2, S2=1) Vi=2.0Vpp, 4.43MHz, Vo/Vi | — | -70 | — | dB |
| Switch Change Voltage | VCH | Garanteed voltage of all switch on | 2.4 | — | — | V |
| | VCL | Garanteed voltage of all switch off | — | — | 0.8 | V |
| Input Impedance | Ri | | — | 15 | — | kΩ |
| Output impedance | RO | | — | 10 | — | Ω |

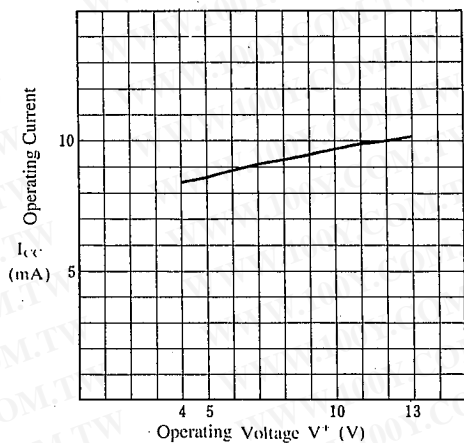
■ CONTROL SIGNAL - OUTPUT SIGNAL

| SW 1 | OUTPUT SIGNAL |
|------|---------------|
| L | Vix 1 |
| H | Vix 2 |

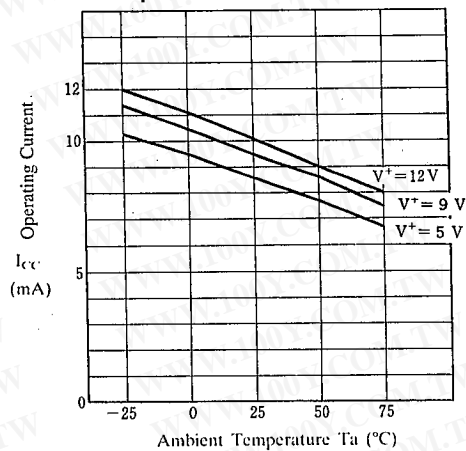
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■ TYPICAL CHARACTERISTICS

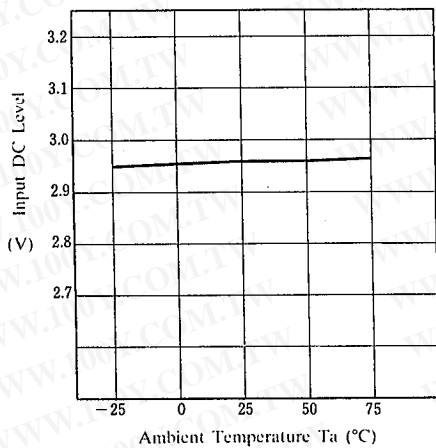
Operating Current (Ta=25°C)



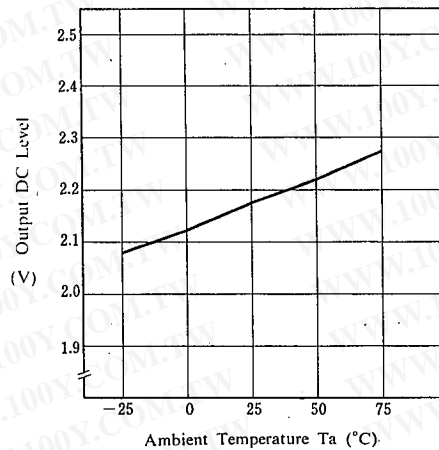
Operating Current (Ta=25°C)



Input DC Level (Ta=25°C, V+=5V)

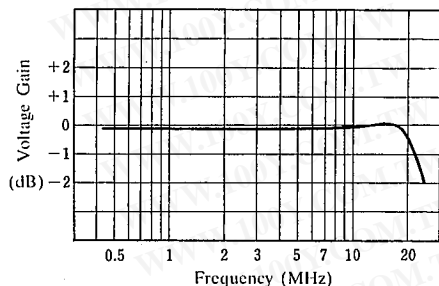


Output DC Level (V+=5V)



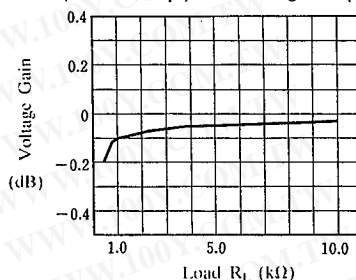
Voltage Gain

(V+=5V, 2Vp-p staircase signal input RL=1kΩ)

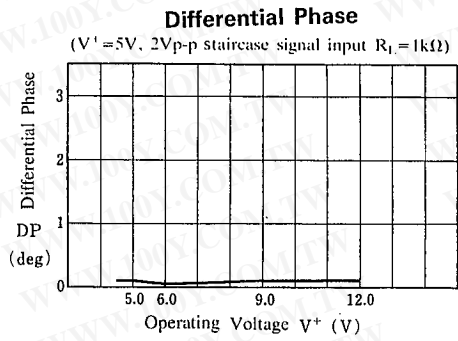
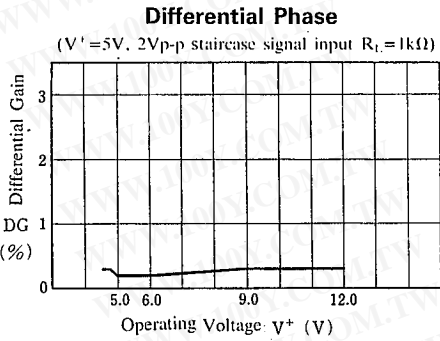
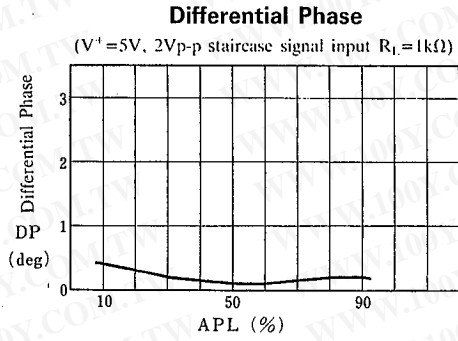
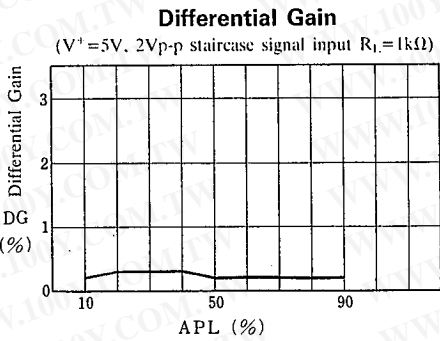
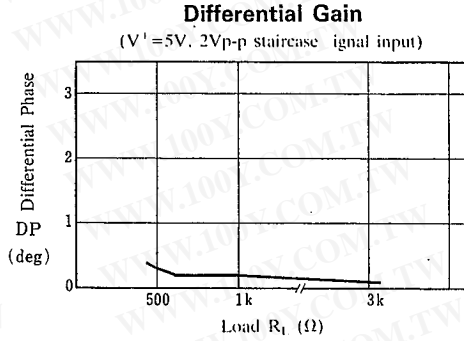
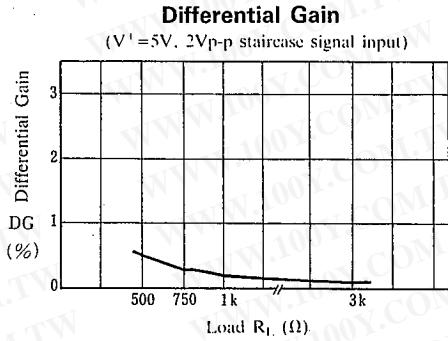


Voltage Gain

(V+=5V, 2Vp-p staircase signal input)

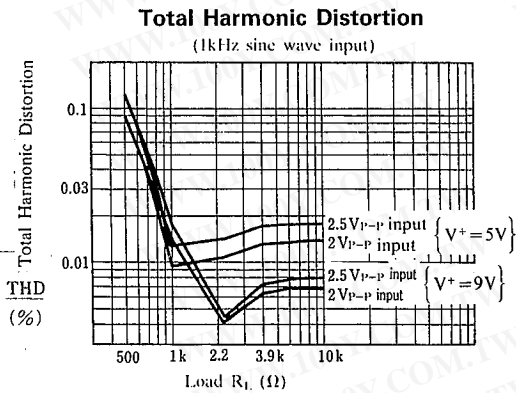
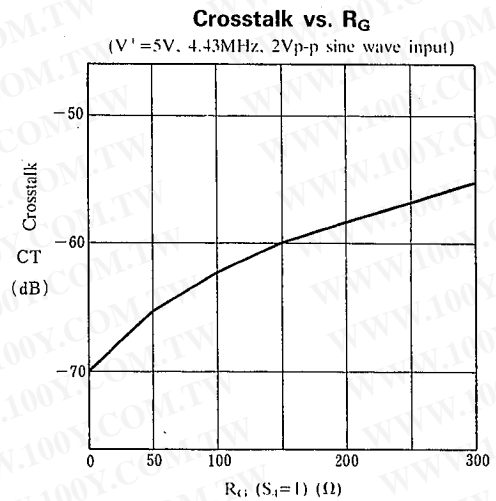
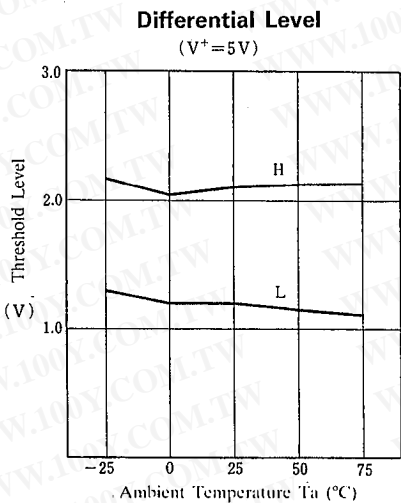
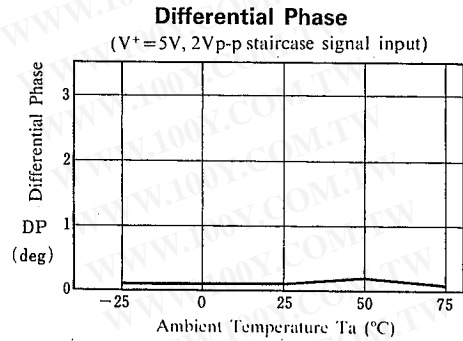
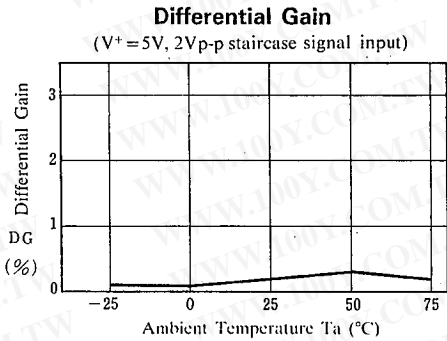


■ TYPICAL CHARACTERISTICS



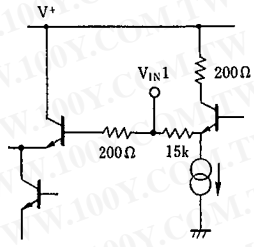
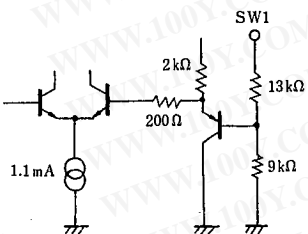
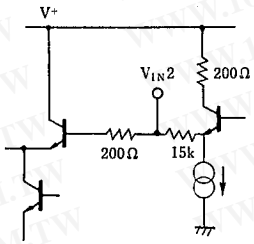
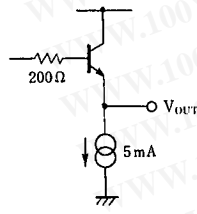
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■ EQUIVALENT CIRCUIT

| PIN NO. | SYMBOL | INSIDE EQUIVALENT CIRCUIT | PIN NO. | SYMBOL | INSIDE EQUIVALENT CIRCUIT |
|---------|-------------------|--|---------|------------------|--|
| 1 | V _{IN 1} |  | 5 | NC | _____ |
| 2 | SW 1 |  | 6 | V ⁺ | _____ |
| 3 | V _{IN 2} |  | 7 | V _{OUT} |  |
| 4 | NC | _____ | 8 | GND | _____ |

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NJM2233B

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MEMO

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