

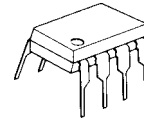
CHROMA SIGNAL HUE TINT CONTROLLER

■ GENERAL DESCRIPTION

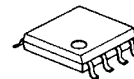
NJM2255 is a Chroma signal Hue, Tint controller IC, to be used for VCR, LCD & AV equipments.

In play back operation of video signals of VCRs, Hue and Tint of Chroma signal can be adjusted independently and continuously by the external DC voltage. **NJM2255** internalizes the variable capacitor in it, so that it can be operated with minimal external components.

■ PACKAGE OUTLINE



NJM2255D



NJM2255M

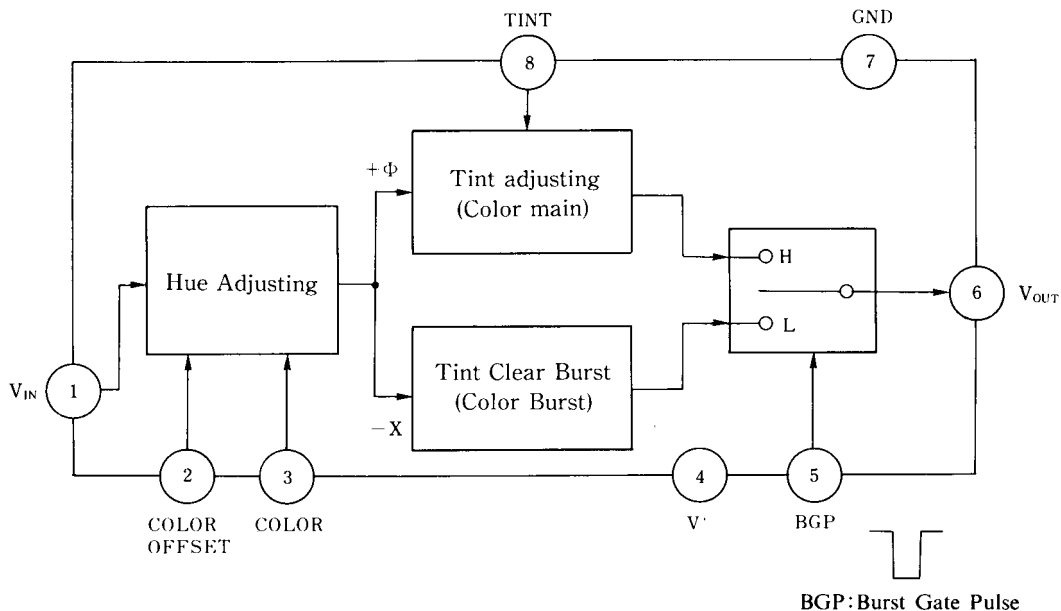
■ FEATURES

- Operating Voltage (+4.7V to +5.3V)
- Internalizing variable capacitor
- Internalizing changeable Gain Amplifier
- Hue and Tint of Chroma signals can be adjusted continuously by DC voltage (0V to 5V)
- Internalizing Dead Band Circuit
- Package Outline DIP8, DMP8
- Bipolar Technology

■ APPLICATIONS

- VCR, LCD, AV equipments

■ BLOCK DIAGRAM

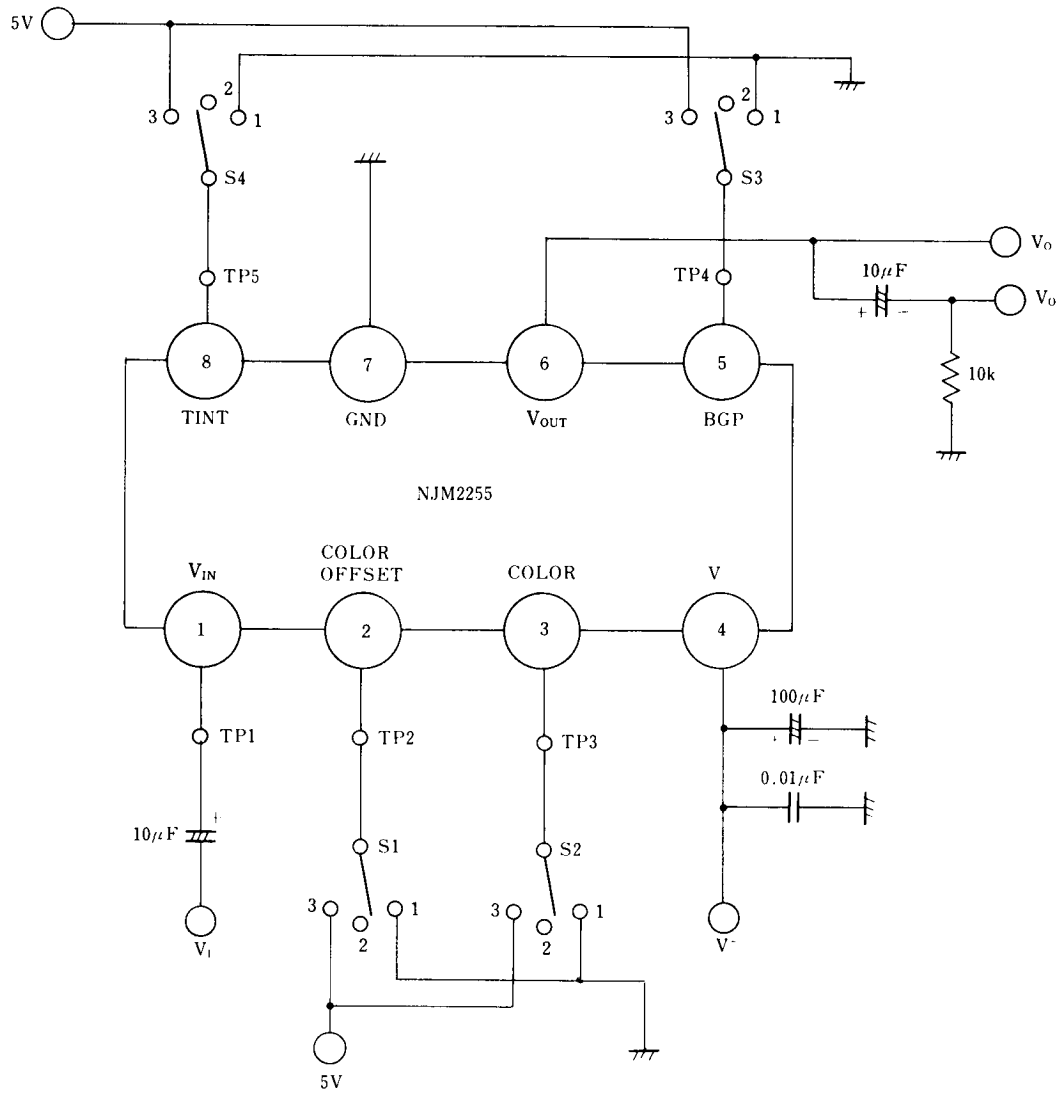


■ CONTROL INPUT - OUTPUT SIGNAL

| SW1 | Output Signal |
|-----|---------------|
| H | Color Main |
| L | Color Burst |

NJM2255

■ TEST CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS

($T_a = 25^\circ\text{C}$)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|-----------------------------|-----------|-------------|------------------|
| Supply Voltage | V^+ | 7 | V |
| Power Dissipation | P_D | 500 | mW |
| Operating Temperature Range | T_{opr} | -20 to +75 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -40 to +125 | $^\circ\text{C}$ |

■ ELECTRICAL CHARACTERISTICS

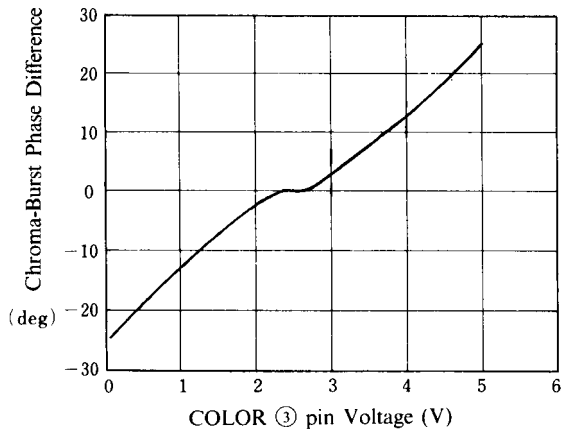
($V^+ = 5\text{V}$, $T_a = 25^\circ\text{C}$)

| PARAMETER | SYMBOL | SWITCH | | | | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|-------------------------------|----------|--------|----|----|----|---|------|------|------|------|
| | | S1 | S2 | S3 | S4 | | | | | |
| Operating Current | I_{cc} | 2 | 2 | 2 | 2 | No signal | - | 22.0 | 28.0 | mA |
| Voltage Gain 1 | GC | 2 | 2 | 3 | 2 | V_{OUT} / V_{IN} | -1.0 | 0 | 1.0 | dB |
| Voltage Gain 2 | GB | 2 | 2 | 1 | 2 | V_{OUT} / V_{IN} | -1.0 | 0 | 1.0 | dB |
| Hue Offset | T1 | 2 | 2 | | 2 | $S3 = 1 / 3 V_{OUT}$ Phase difference | -3.5 | 0 | 3.5 | deg |
| Hue Changeable width 1 | T2 | 2 | 3 | | 2 | $S3 = 1 / 3 V_{OUT}$ Phase difference | 20 | 22 | - | deg |
| Hue Changeable width 2 | T3 | 2 | 1 | | 2 | $S3 = 1 / 3 V_{OUT}$ Phase difference | - | -22 | -20 | deg |
| Tint Changeable width 1 | GC | 2 | 2 | | 2 | Gain ($S3 = 3$) - Gain ($S3 = 1$) | -0.6 | 0 | 0.6 | dB |
| Tint Changeable width 2 | GB | 2 | 2 | | 3 | Gain ($S3 = 3$) - Gain ($S3 = 1$) | 4.5 | 5.5 | - | dB |
| Tint Changeable width 3 | T1 | 2 | 2 | | 1 | Gain ($S3 = 3$) - Gain ($S3 = 1$) | - | - | -20 | dB |
| Hue Offset Adjustment width 1 | OSTH | 3 | 2 | | 2 | $S3 = 1 / 3 V_{OUT}$ | - | - | -3.5 | deg |
| Hue Offset Adjustment width 2 | OSTL | 1 | 2 | | 2 | $S3 = 1 / 3 V_{OUT}$ | 3.5 | - | - | deg |
| BGP Threshold Voltage 1 | VTHH | 2 | 2 | 3 | 2 | Switch on level | 2.2 | - | 5.0 | V |
| BGP Threshold Voltage 2 | VTHL | 2 | 2 | 3 | 2 | Switch off level | 0 | - | 0.8 | V |
| Secondary Distortion 1 | HC | 2 | 2 | 3 | 2 | 3.58MHz, 700mV _{P-P} Sine Wave | - | -37 | -33 | dB |
| Secondary Distortion 2 | HB | 2 | 2 | 1 | 2 | 3.58MHz, 700mV _{P-P} Sine Wave | - | -37 | -33 | dB |

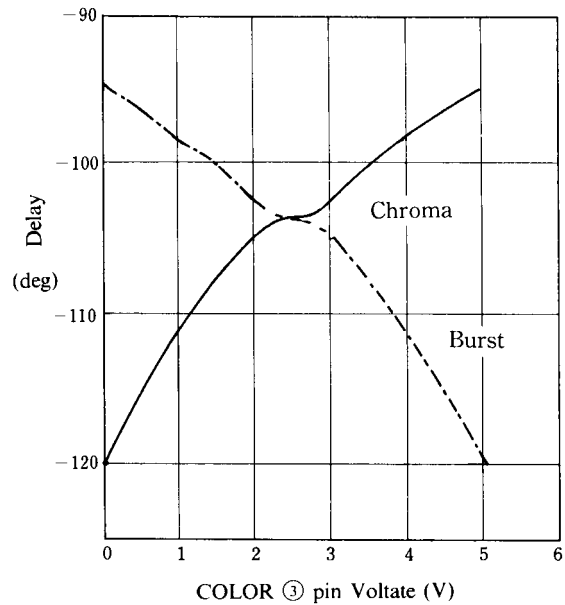
Note Unless otherwise specified, input signal is 3.58MHz and 300mV_{P-P} sine wave.

■ TYPICAL CHARACTERISTICS

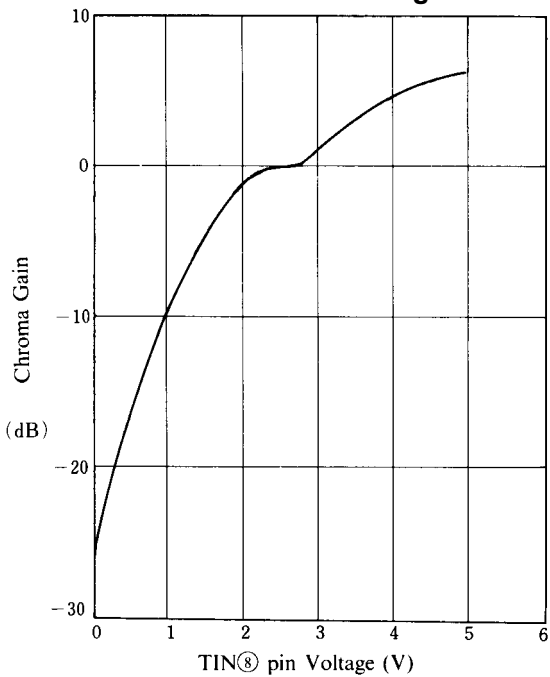
Hue Control Voltage vs. Tint Changeable feature



Hue Control Voltage vs. Input Delay feature



Color Control Voltage vs. Chroma Gain Changeable



[CAUTION]

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