

## VIDEO SUPER IMPOSER WITH Y-C MIXER

### ■ GENERAL DESCRIPTION

The NJM2509 is video super imposer, including Y/C mix circuit. Y-signal input terminal have sink-chip clamp function and it is applied to fixed DC level of video signal.

Impose voltage is fixed internally to white level and black level, and includes 6dB amplifier.

### ■ PACKAGE OUTLINE



NJM2509V

### ■ FEATURES

- Internal Y/C Mix Circuit
- Internal Clamp Circuit (Y Signal), Bias Circuit (C Signal)
- Impose voltage fixed internally to white level and black level.
- Internal 6dB AMP. (Input: 0.5V<sub>PP</sub>, Output: 1.0V<sub>PP</sub>)
- Package Outline SSOP8
- Bipolar Technology

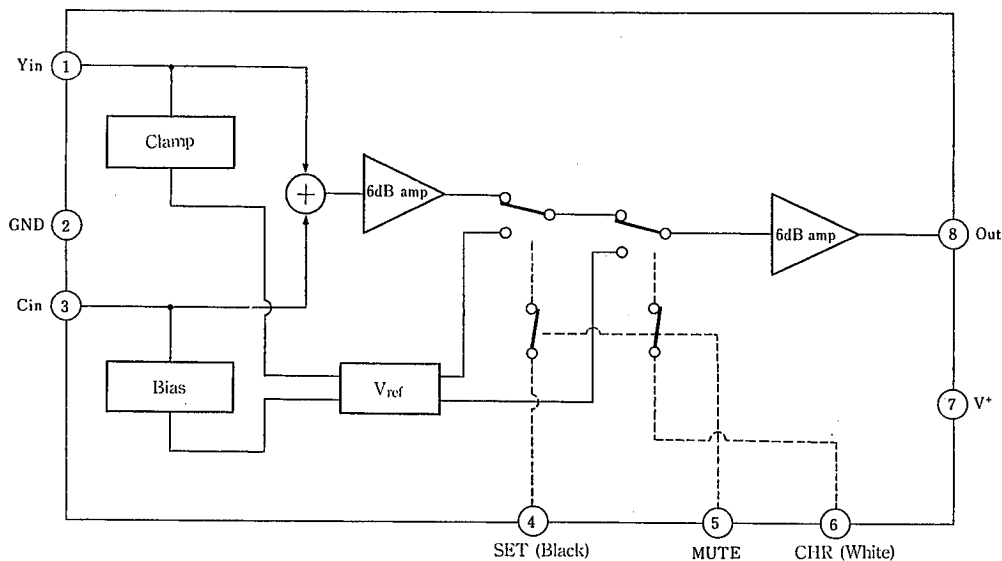
### ■ RECOMMENDED OPERATING CONDITION

- Operating Voltage V<sup>+</sup> 4.5~5.1V

### ■ APPLICATION

- Video Camera

### ■ BLOCK DIAGRAM



NJM2509V

## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	7.0	V
Power Dissipation	P <sub>D</sub>	250	mW
Operating Temperature Range	T <sub>opr</sub>	-20~+75	°C
Storage Temperature Range	T <sub>stg</sub>	-40~+125	°C

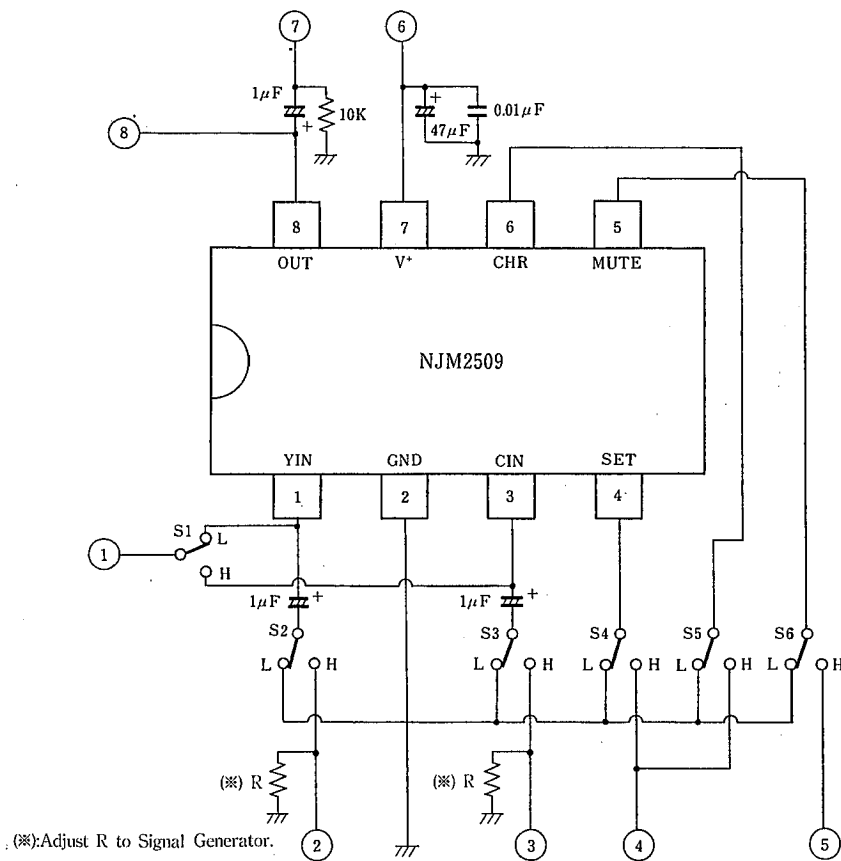
## ■ ELECTRICAL CHARACTERISTICS

(V<sup>+</sup>=4.8V, Ta=25°C, R<sub>L</sub>=10kΩ)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I <sub>cc</sub>		5.3	7.0	8.7	mA
Clamp Voltage	V <sub>cmp</sub>		2.4	2.5	2.6	V
Bias Voltage	V <sub>bias</sub>		2.4	2.5	2.6	V
Voltage Gain	G <sub>v</sub>	V <sub>out</sub> /V <sub>in</sub> 100kHz, 0.5V <sub>P-P</sub> Sine Wave	6.0	6.3	6.8	dB
Frequency Characteristic	G <sub>f</sub>	0.5V <sub>P-P</sub> Sine Wave v <sub>0</sub> (10MHz)/v <sub>0</sub> (100kHz)	-0.7	-0.2	+0.3	dB
Background Voltage	V <sub>set</sub>	From Pedestal Level	5.0	15.0	20.0	IRE
CHR. VOLTAGE	V <sub>chr</sub>	From Pedestal Level	65.0	75.0	85.0	IRE
Input Resistance	R <sub>in</sub>	Input Cin	—	30	—	kΩ
Differential Gain	DG	0.5V <sub>P-P</sub> , 10 STEP Stair wave	—	—	3.0	deg
Differential Phase	DP	0.5V <sub>P-P</sub> , 10 STEP Stair wave	—	—	3.0	%
BACKGROUND	V <sub>ch</sub>	BACKGROUND SW:ON	2.4	—	—	V
Switch Change Voltage	V <sub>cl</sub>	BACKGROUND SW:OFF	—	—	0.8	V
CHR MUTE	V <sub>ch</sub> MUTE	CHRMUTE SW:ON	2.4	—	—	V
Switch Change Voltage	V <sub>cl</sub> MUTE	CHRMUTE SW:OFF	—	—	0.8	V
Crosstalk 1	CT1	C <sub>in</sub> →BACKGROUND VOLTAGE (※1)	—	-50	—	dB
Crosstalk 2	CT2	C <sub>in</sub> →CHR VOLTAGE (※2)	—	-50	—	dB
Crosstalk 3	CT3	Y <sub>in</sub> →BACKGROUND VOLTAGE (※1)	—	-50	—	dB
Crosstalk 4	CT4	Y <sub>in</sub> →CHR VOLTAGE (※2)	—	-50	—	dB

※1. Crosstalk:4.43MHz, 0.5V<sub>PP</sub> Sine wave, V<sub>out</sub>/V<sub>in</sub>

## ■ TEST CIRCUIT



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## ■ TERMINAL EXPLANATION

(V<sup>+</sup>=4.8V, T<sub>a</sub>=25°C)

PIN NO.	UNIT	FUNCTION	EQUIVALENT CIRCUIT	PIN NO.	UNIT	FUNCTION	EQUIVALENT CIRCUIT
1	YIN	Input: 2.5V clamp 0.5Vpp Y-signal or Compositito signal		5	MUTE	Character signal ON/OFF Switch  Hi   Character signal OFF Lo   Character Signal ON	
2	GND	GROUND		6	CHR	Character signal Input pin  Hi   White level Lo   Composit signal	
3	CIN	Input: 2.5V Bias, 0.5Vpp C-signal		7	V <sup>+</sup>	Supply Voltage	
4	SET	Character signal Input Pin  Hi   Black level Lo   Composit signal		8	OUT	Output-1Vpp Composit signal, Impose Voltage	

## MEMO

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