

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_{PP}, Output: 1.0V_{PP})
- Package Outline SSOP8
- Bipolar Technology

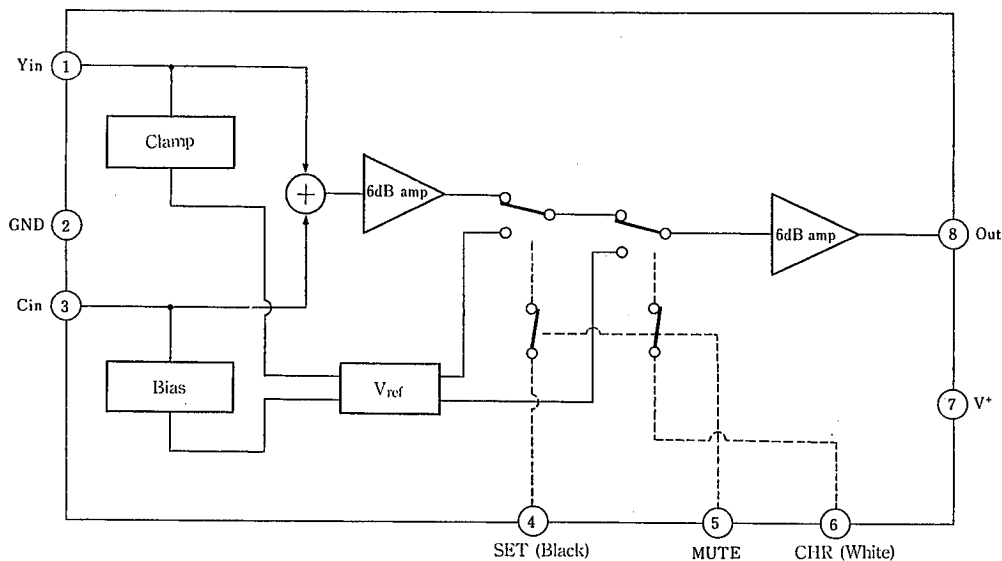
■ RECOMMENDED OPERATING CONDITION

- Operating Voltage V⁺ 4.5~5.1V

■ APPLICATION

- Video Camera

■ BLOCK DIAGRAM



NJM2509V

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	7.0	V
Power Dissipation	P _D	250	mW
Operating Temperature Range	T _{opr}	-20~+75	°C
Storage Temperature Range	T _{stg}	-40~+125	°C

■ ELECTRICAL CHARACTERISTICS

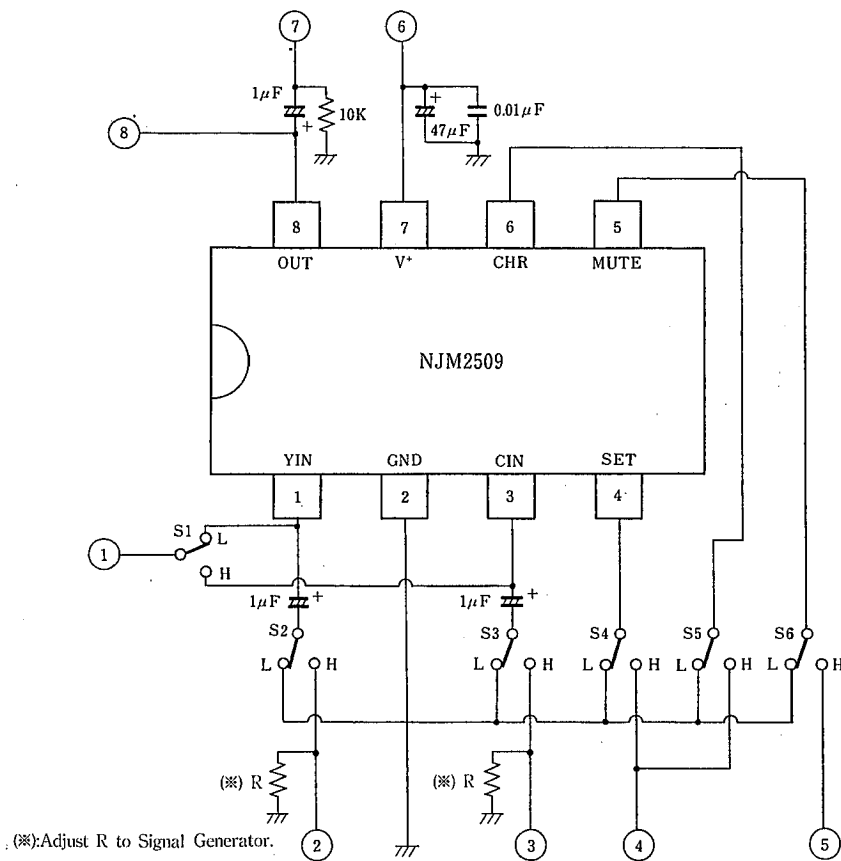
(V⁺=4.8V, Ta=25°C, R_L=10kΩ)

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

※1. Crosstalk:4.43MHz, 0.5V_{PP} Sine wave, V_{out}/V_{in}

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■ TEST CIRCUIT



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■ TERMINAL EXPLANATION

(V⁺=4.8V, T_a=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 ⁺	Supply Voltage	
4	SET	Character signal Input Pin Hi Black level Lo Composit signal		8	OUT	Output -1Vpp Composit signal, Impose Voltage	

MEMO

[CAUTION]

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