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

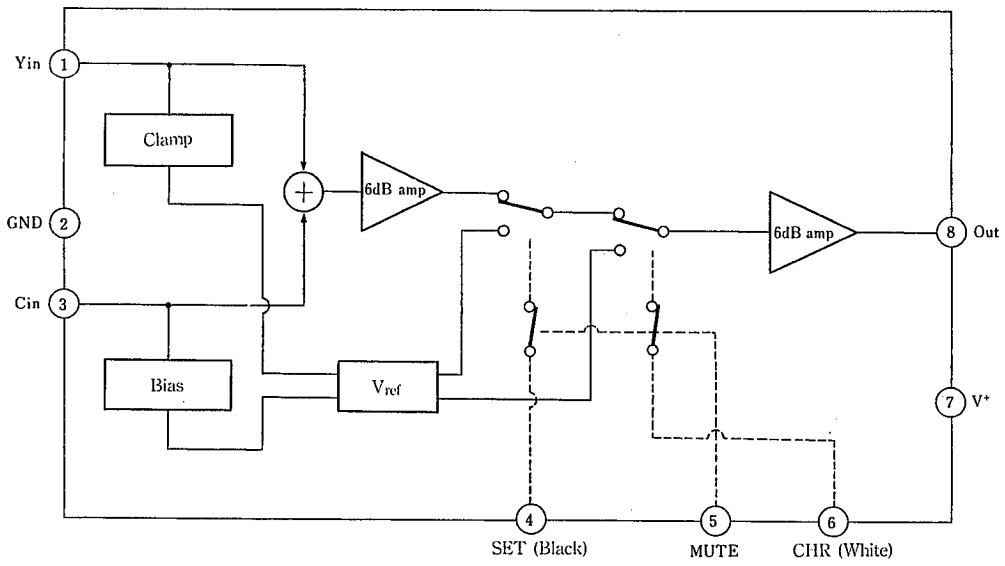
■ RECOMMENDED OPERATING CONDITION

• Operating Voltage	V^+	4.5~5.1V

■ APPLICATION

- Video Camera

■ BLOCK DIAGRAM



NJM2509V

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	7.0	V
Power Dissipation	P_D	250	mW
Operating Temperature Range	T_{opr}	−20~+75	℃
Storage Temperature Range	T_{stg}	−40~+125	℃

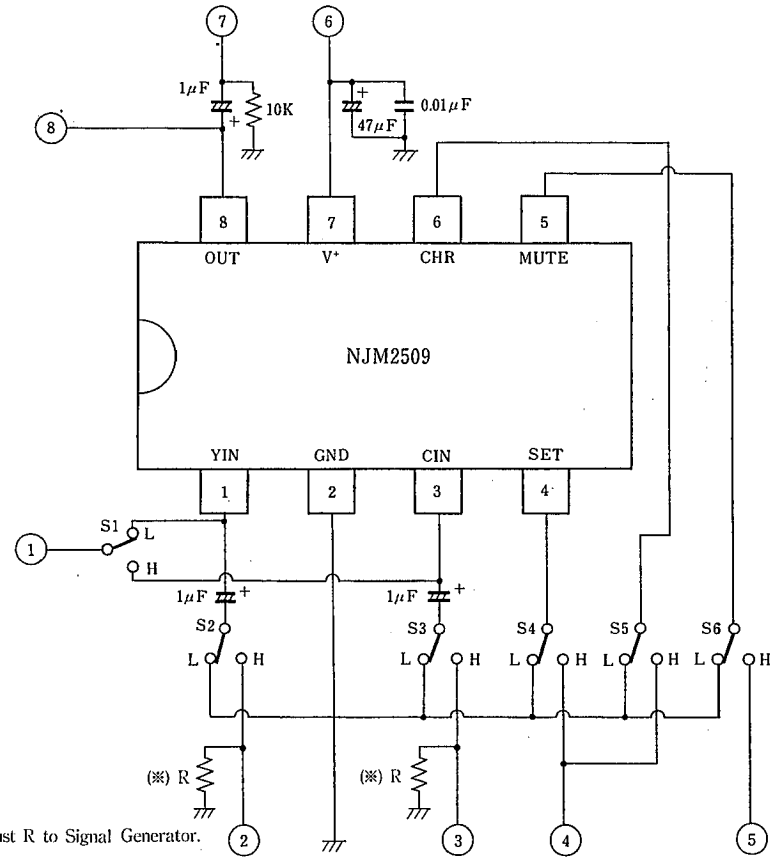
■ ELECTRICAL CHARACTERISTICS

(V^+=4.8V, Ta=25℃, 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 Phasa	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}

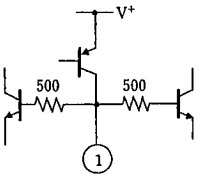
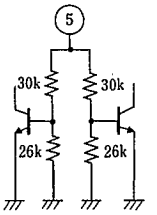
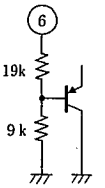
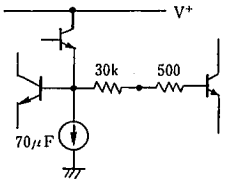
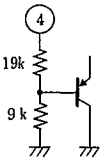
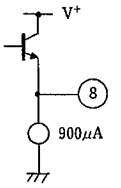
■ TEST CIRCUIT



(※):Adjust R to Signal Generator.

■ TERMINAL EXPLANATION

(V^+=4.8V, Ta=25℃)

PIN NO.	UNIT	FUNCTION	EQUIVALENT CIRCUIT	PIN NO.	UNIT	FUNCTION	EQUIVALENT CIRCUIT
1	YIN	Input:2.5V clamp 0.5V_{PP} Y-signal or Compozitto signal		5	MUTE	Ckaractor signal ON/OFF Switch Hi: Charactor signal OFF Lo: Charactor Signal ON	
2	GND	GROUND		6	CHR	Charactor signal Input pin Hi: White level Lo: Composit signal	
3	CIN	Input:2.5V Bias, 0.5V_{PP} C-signal		7	V^+	Supply Voltage	
4	SET	Charactor signal Input Pin Hi: Black level Lo: Composit signal		8	OUT	Output-1V_{PP} Composit signal, Impose Voltage	

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