



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



VIDEO SUPER INPOSER WITH Y-C MIXER

■ GENERAL DESCRIPTION

The **NJU2509** 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 : 1.0 V_{P-P})
- Package Outline SSOP8
- Bipolar Technology

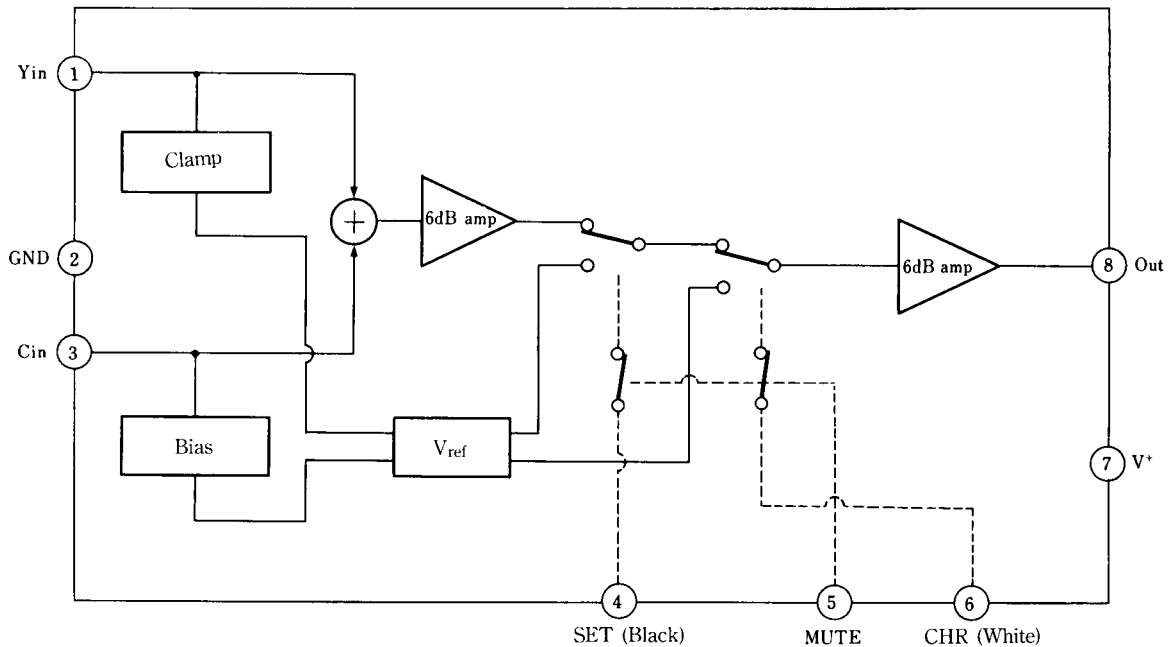
■ RECOMMENDED OPERATING CONDITION

- Operating Voltage V⁺ 4.5V to 5.1V

■ APPLICATION

- Video Camera

■ BLOCK DIAGRAM



NJM2509V

NJM2509

■ ABSOLUTE MAXIMUM RATINGS

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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	7.0	V
Power Dissipation	P_D	250	mW
Operating Temperature Range	T_{opr}	-20 to +75	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +125	$^\circ\text{C}$

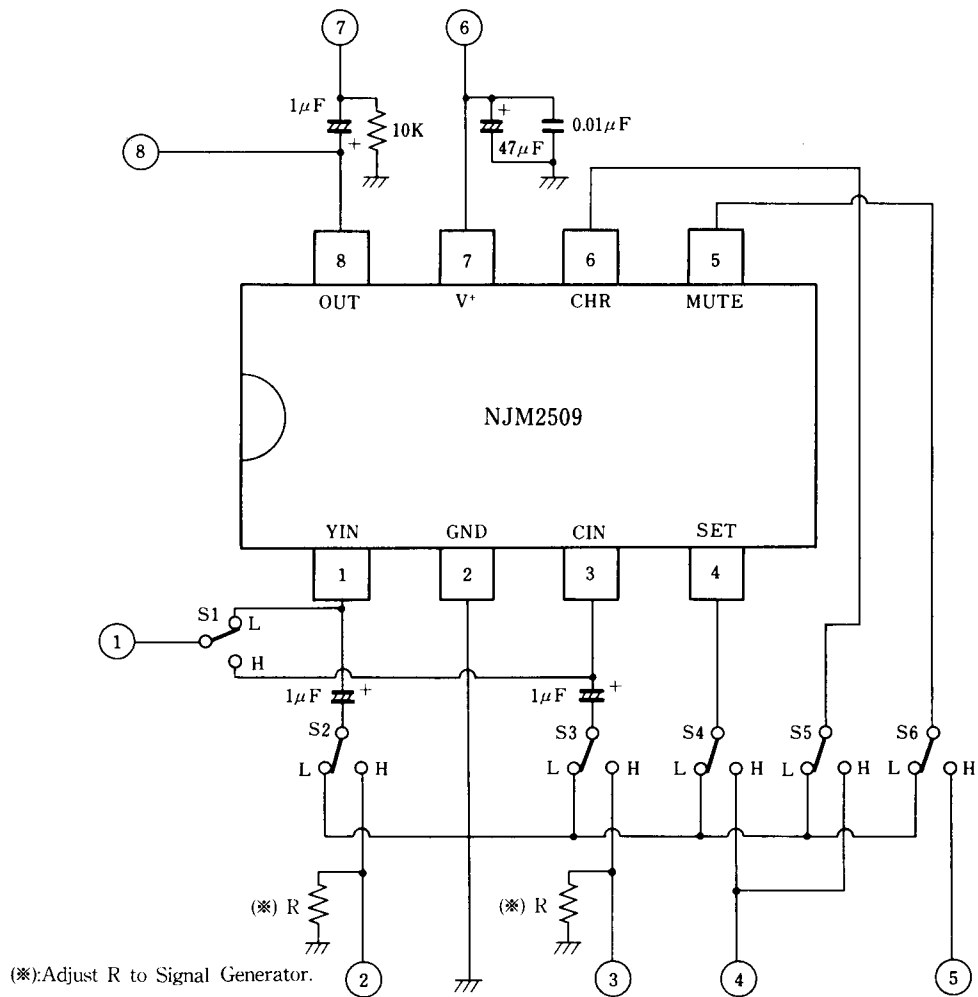
■ ELECTRICAL CHARACTERISTICS

($V^+ = 4.8\text{V}$, $T_a = 25^\circ\text{C}$, $R_L = 10\text{k}\Omega$)

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_o (10MHz) / v_o (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 C_{in}	-	30	-	k Ω
Differential Gain	DG	0.5V _{P-P} , 10STEP Stair wave	-	-	3.0	deg
Differential Phasa	DP	0.5V _{P-P} , 10STEP Stair wave	-	-	3.0	%
BACKGROUND	V_{ch}	BACKGROUND SW : ON	2.4	-	-	V
Switch Change Voltage	V_d	BACKGROUND SW : OFF	-	-	0.8	V
CHR MUTE	V_{chMUTE}	CHRMUTE SW : ON	2.4	-	-	V
Switch Change Voltage	V_dMUTE	CHRMUTE SW : OFF	-	-	0.8	V
Crosstalk 1	CT1	$C_{in} \rightarrow$ BACKGROUND VOLTAGE (*1)	-	-50	-	dB
Crosstalk 2	CT2	$C_{in} \rightarrow$ CHR VOLTAGE (*2)	-	-50	-	dB
Crosstalk 3	CT3	$Y_{in} \rightarrow$ BACKGROUND VOLTAGE (*1)	-	-50	-	dB
Crosstalk 4	CT4	$Y_{in} \rightarrow$ CHR VOLTAGE (*1)	-	-50	-	dB

*1. Crosstalk : 4.43MHz. 0.5V_{P-P} Sine wave, V_{out} / V_{in}

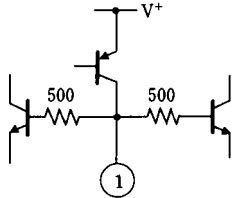
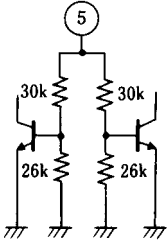
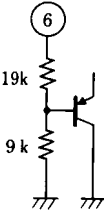
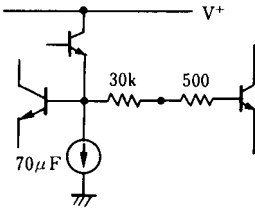
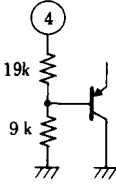
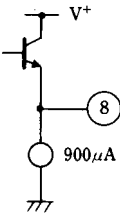
■ TEST CIRCUIT



NJM2509

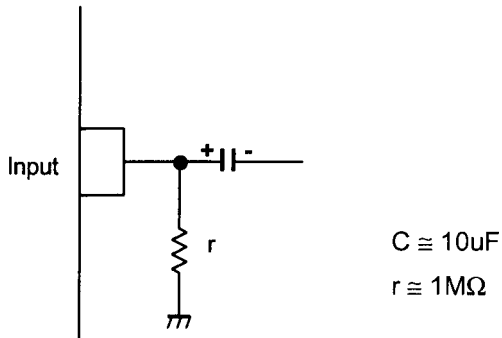
■ TERMINAL EXPLANATION

($V^+ = 4.8V, T_a = 25^\circ C$)

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	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, 0.5V _{PP} C-signal		7	V ⁺	Supply voltage	
4	SET	Character signal Input Pin H Black level i L Composit o signal		8	OUT	Output-1 V _{PP} Composit signal, ImPOSE Voltage	

■ APPLICATION

This IC requires $1M\Omega$ resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.



[CAUTION]
 The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.