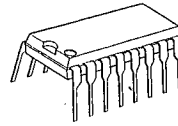


3-INPUT/2-INPUT VIDEO SWITCH

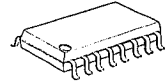
■ GENERAL DESCRIPTION

The NJM2513 is a switching IC for switching over from one audio or video input signal to another. Internalizing 3 input-1 output, and 2 input-1 output and then each set can be operated independently. Side of 2 input-1 output are "Clamp type", and they can be operated while setting DC level fixed in position of the video signal. It is a higher efficiency video switch, featuring the operating voltage 4.75 to 13V, the frequency feature 10MHz, and then the Crosstalk 75dB (at 4.43MHz).

■ PACKAGE OUTLINE



NJM2513D



NJM2513M

■ FEATURES

- Operating Voltage (+4.75V ~ +13V)
- 3 Input-1 Output/2 Input-1 output
- Crosstalk 75dB(at 4.43MHz)
- Wide Bandwidth Frequency 10MHz(2V_{P-P} Input)
- Package Outline DIP16, DMP16
- Bipolar Technology

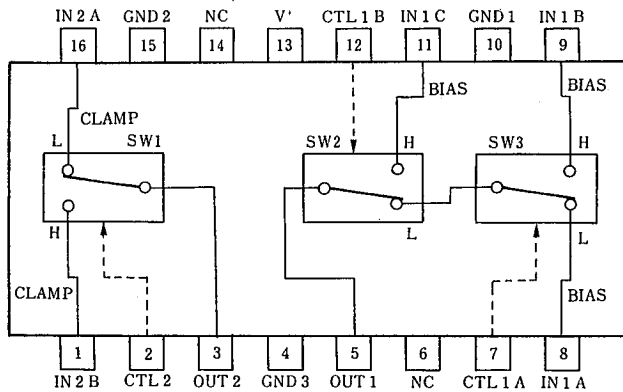
■ RECOMMENDED OPERATING CONDITION

- Operating Voltage V⁺ 4.75~13.0V

■ APPLICATIONS

- VCR, Video Camera, AV-TV, Video Disk Player.

■ BLOCK DIAGRAM



NJM2513D
NJM2513M

■ MAXIMUM RATINGS

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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^*	14	V
Power Dissipation	P_d	(DIP16) 700 (DMP16) 350	mW
Operating Temperature Range	T_{opr}	$-40 \sim +85$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-40 \sim +125$	$^\circ\text{C}$

■ ELECTRICAL CHARACTERISTICS

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

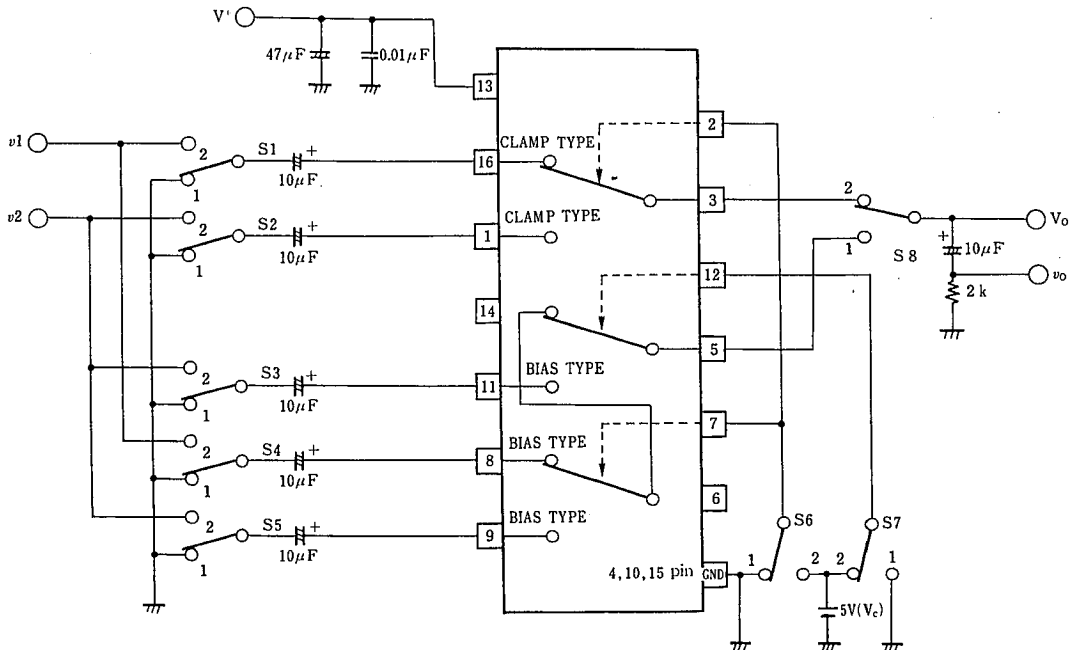
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current (1)	I_{cc1}	$V^*=5\text{V}$ (Note1)	6.7	9.7	12.7	mA
Operating Current (2)	I_{cc2}	$V^*=9\text{V}$ (Note1)	8.6	12.3	16.0	mA
Voltage Gain	G_v	$V_i = 100\text{kHz}$, $2V_{p-p}$, V_o/V_i	-0.6	-0.1	+0.4	dB
Frequency Gain	G_F	$V_i = 2V_{p-p}$, $V_o(10\text{MHz})/V_o(100\text{kHz})$	-1.0	0	+1.0	dB
Differential Gain	DG	$V_i = 2V_{p-p}$, Standard Staircase Signal	—	0.3	—	%
Differential Phase	DP	$V_i = 2V_{p-p}$, Standard Staircase Signal	—	0.3	—	deg
OutPut offset Voltage (1)	V_{os1}	(Note2)	-15	0	+15	mV
OutPut offset Voltage (2)	V_{os2}	(Note3)	-25	0	+25	mV
Crosstalk	CT	$V_i = 2V_{p-p}$, 4.43MHz, V_o/V_i	—	-75	—	dB
Switch Change Over Voltage	V_{cH}	All inside Switches ON	2.5	—	—	V
Switch Change Over Voltage	V_{cL}	All inside Switches OFF	—	—	1.0	V

(Note1) $S1=S2=S3=S4=S5=S6=S7=1$

(Note2) $S1=S2=S3=S4=S5=1$, $S8=2$, $S7=1$, $S6=1 \rightarrow 2$ Measure the output DC voltage difference

(Note3) $S1=S2=S3=S4=S5=1$, $S8=1$, $S7=1$, $S6=1 \rightarrow 2$ ($S6=1$, $S7=1 \rightarrow 2$) Measure the output DC voltage difference

■ TEST CIRCUIT



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

■ TERMINAL EXPLANATION

PIN NO.	PIN NAME	VOLTAGE	INSIDE EQUIVALENT CIRCUIT
8 9 11	IN 1 A IN 1 B IN 1 C (Input)	2.5V $\left(\frac{1}{2}V^+\right)$	
16 1	IN 2 A IN 2 B (Input)	1.5V $\left(\frac{3}{10}V^+\right)$	
7 12 2	CTL 1 A CTL 1 B CTL 2 (Switching)		
5	OUT 1 (Output)	1.8V $\left(\frac{1}{2}V^+ - 0.7\right)$	
3	OUT 2 (Output)	0.8V $\left(\frac{3}{10}V^+ - 0.7\right)$	
13	V+	5V	
15 4 10	GND 1 GND 2 GND 3		

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MEMO

[CAUTION]

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