

3-INPUT/2-INPUT VIDEO SWITCH

■ GENERAL DESCRIPTION

The NJM2503 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. 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).

■ FEATURES

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

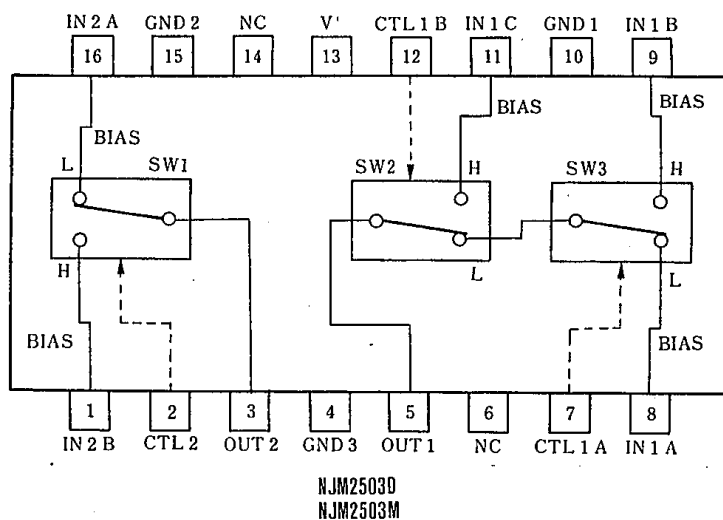
■ RECOMMENDED OPERATING CONDITION

- Operating Voltage V^+ 4.75~13.0V

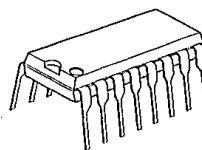
■ APPLICATIONS

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

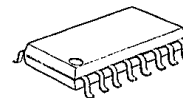
■ BLOCK DIAGRAM



■ PACKAGE OUTLINE



NJM2503D



NJM2503M

■ MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V*	14	V
Power Dissipation	P _D	(DIP 16) 700 (DMP 16) 350	mW mW
Operating Temperature Range	T _{opr}	-40~+85	°C
Storage Temperature Range	T _{stg}	-40~+125	°C

■ ELECTRICAL CHARACTERISTICS

(V*=5V, Ta=25°C)

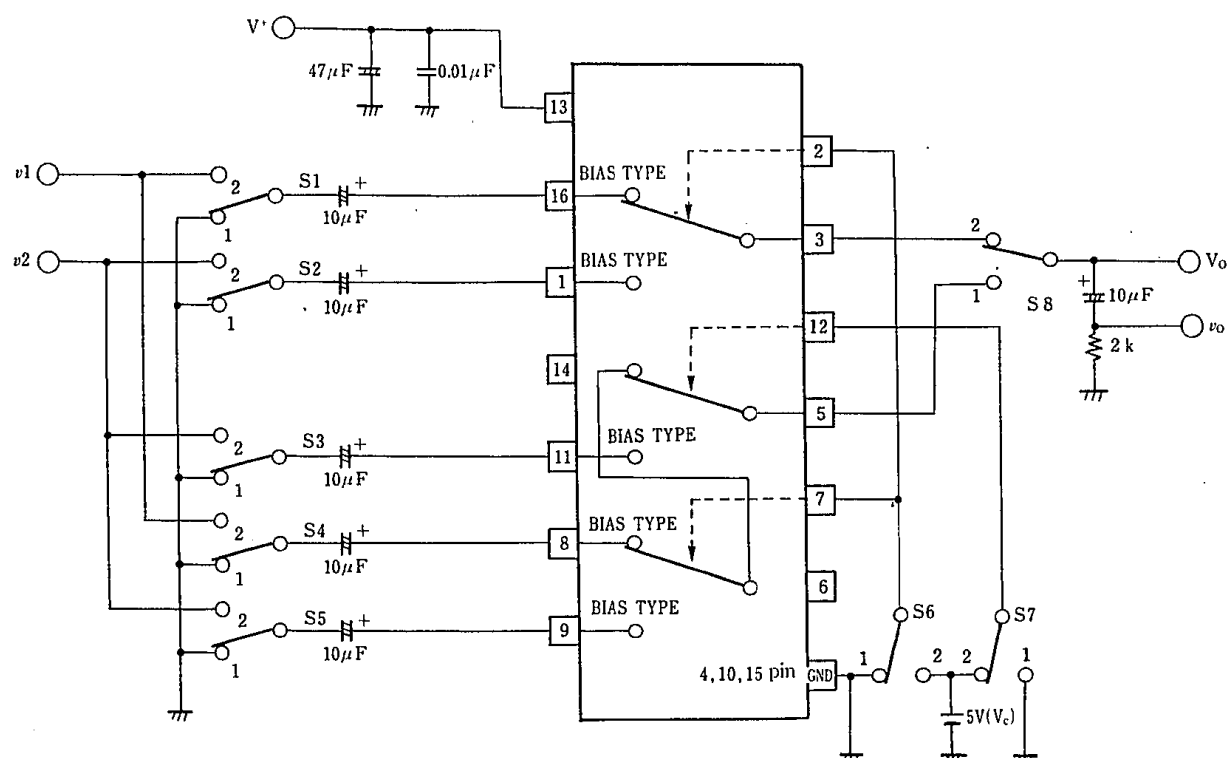
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current (1)	I _{CC1}	V*=5V (Note1)	6.8	9.8	12.8	mA
Operating Current (2)	I _{CC2}	V*=9V (Note1)	8.7	12.5	16.3	mA
Voltage Gain	G _v	V _i = 100kHz, 2V _{P-P} , V _O /V _i	-0.6	-0.1	+0.4	dB
Frequency Gain	G _F 1	V _i = 2V _{P-P} , V _O (10MHz)/V _O (100kHz)	-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)	-10	0	+10	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

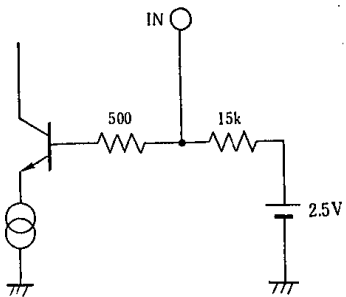
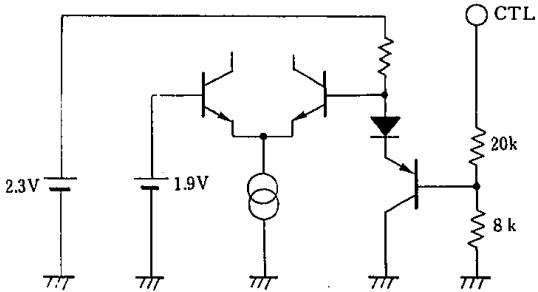
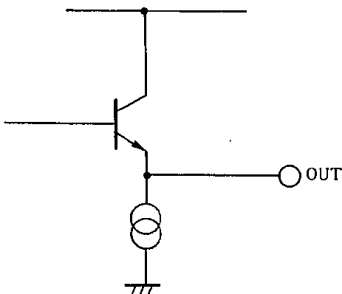
(Note2) S1=S2=S3=S4=S5=1, S8=2, S7=1, S6=1→2 Measure the output DC voltage difference

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

■ TEST CIRCUIT

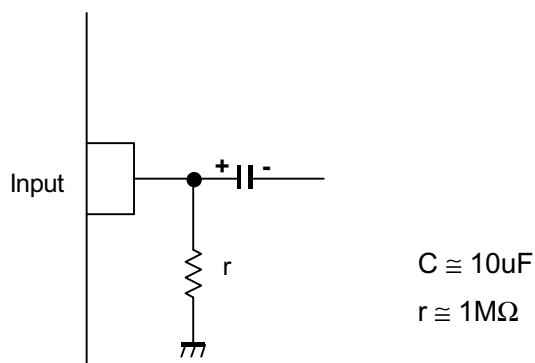


■ TERMINAL EXPLANATION

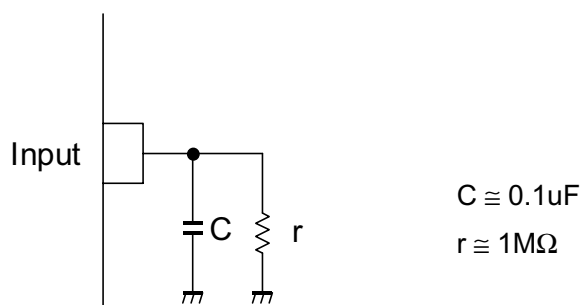
PIN No.	PIN NAME	VOLTAGE	INSIDE EQUIVALENT CIRCUIT
8 9 11 16 1	IN 1 A IN 1 B IN 1 C IN 2 A IN 2 B (Input)	2.5V $\left(\frac{1}{2}V^+\right)$	
7 12 2	CTL 1 A CTL 1 B CTL 2 (Switching)		
5	OUT 1 (Output)	1.8V $\left(\frac{1}{2}V^+ - 0.7\right)$	
3	OUT 2 (Output)	1.8V $\left(\frac{1}{2}V^+ - 0.7\right)$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

■APPLICATION

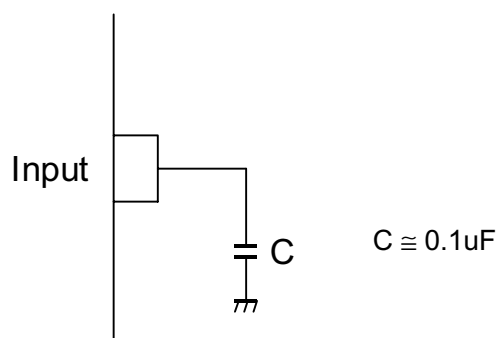
This IC requires $1\text{M}\Omega$ resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.



This IC requires $0.1\mu\text{F}$ capacitor between INPUT and GND, $1\text{M}\Omega$ resistance between INPUT and GND for clamp type input at mute mode.



This IC requires $0.1\mu\text{F}$ capacitor between INPUT and GND for bias type input at mute mode.



[CAUTION]
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