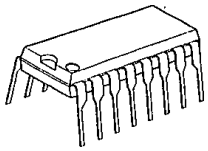
4-INPUT 1MUTE VIDEO SWITCH

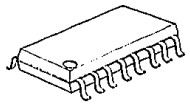
■ GENERAL DESCRIPTION

The NJM2293 is a switching IC for switching over from one audio or video input signal to another. It is a higher efficiency video switch, featuring the operating voltage 4.75 to 13V, the frequency feature 7MHz, and then the Crosstalk 75dB (at 4.43MHz).

■ PACKAGE OUTLINE



NJM2293D



NJM2293M

■ FEATURES

- 4 Input-1 Output
- Operating Voltage (+4.75V～+13V)
- Crosstalk 75dB(at 4.43MHz)
- Wide Bandwidth Frequency 7MHz($2V_{P-P}$ Input)
- Package Outline DIP16, DMP16.
- Bipolar Technology

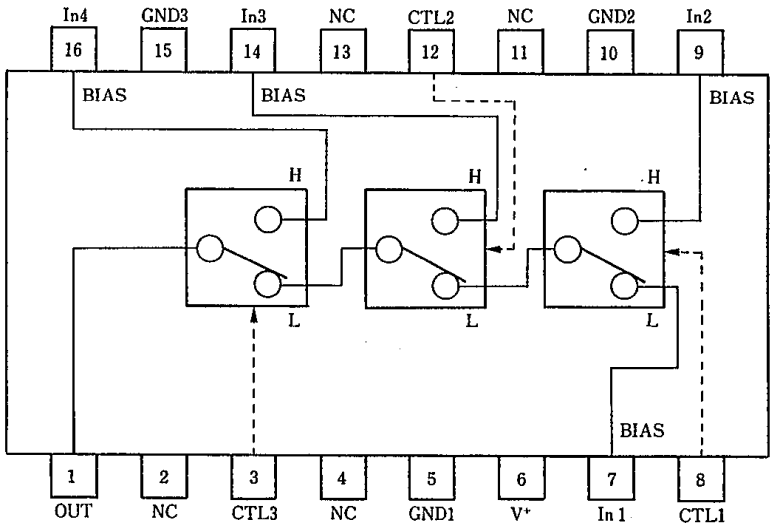
■ RECOMMENDED OPERATING CONDITION

● Operating Voltage	V^+	4.75～13.0V

■ APPLICATIONS

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

■ BLOCK DIAGRAM



NJM2293D
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■ MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	14	V
Power Dissipation	P_D	(DIP-16) 700	mW
		(DMP-16) 350	mW
Operating Temperature Range	T_{opr}	−40～+85	℃
Storage Temperature Range	T_{stg}	−40～+125	℃

■ ELECTRICAL CHARACTERISTICS

(V^+=5V, Ta=25℃)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current (1)	$I_{CC}1$	V^+=5V (Note1)	4.5	6.5	8.5	mA
Operating Current (2)	$I_{CC}2$	V^+=9V (Note1)	5.8	8.3	10.8	mA
Voltage Gain	G_V	V_I =100kHz, $2V_{P-P}$, V_O/V_I	−0.7	−0.2	+0.3	dB
Frequency Gain (1)	G_F1	V_I =$2V_{P-P}$, V_O(7MHz)/V_O(100kHz)	−1.0	0	+1.0	dB
Frequency Gain (2)	G_F2	V_I =$1V_{P-P}$, V_O(10MHz)/V_O(100kHz)	—	0	—	dB
Differential Gain	DG	V_I =$2V_{P-P}$, Standerd Staircase Signal	—	0.3	—	%
Differential Phasa	DP	V_I =$2V_{P-P}$, Standerd Staircase Signal	—	0.3	—	deg
OutPut offset Voltage	V_{OS}	(Note2)	−4.5	0	+45	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=1 Measure the output DC voltage difference

a) S5=S6=S7=1, b) S7=2, S5=S6=1

c) S6=2, S5=1 d) S5=2

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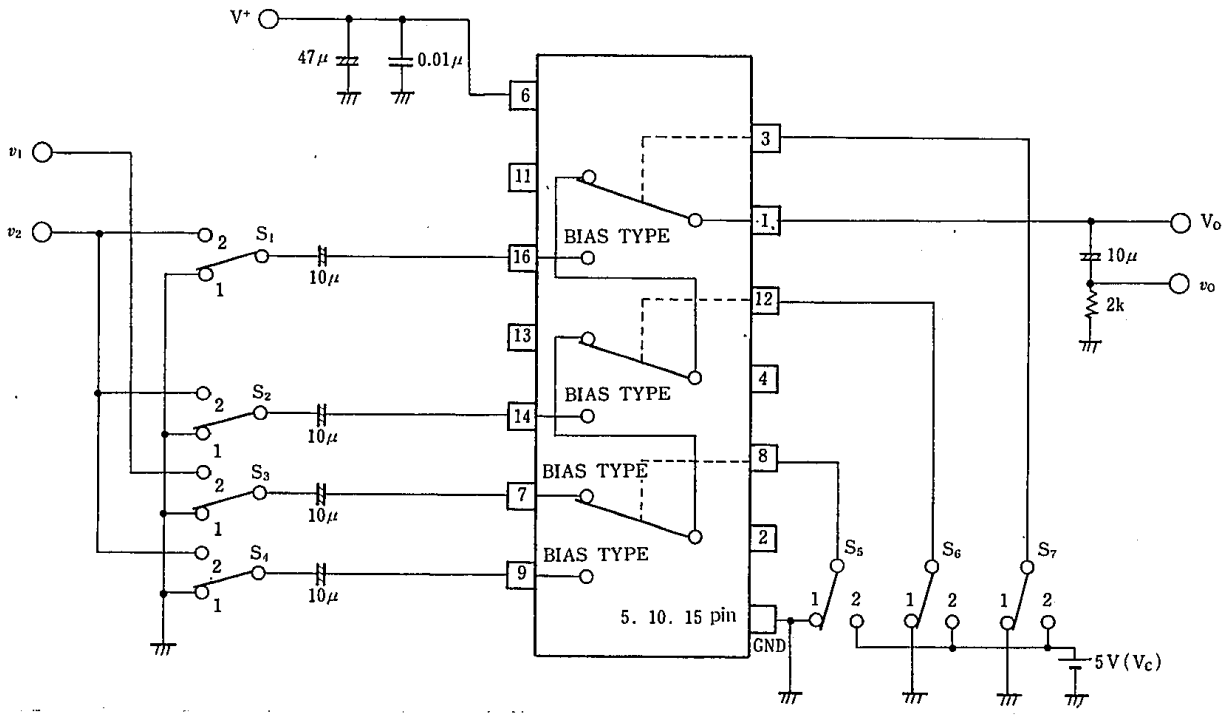
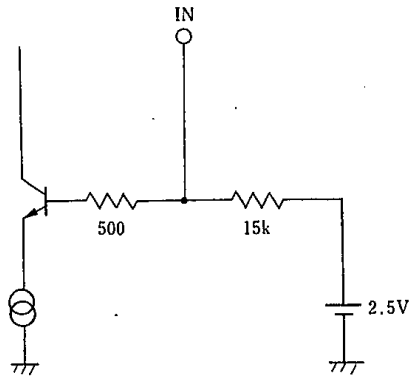
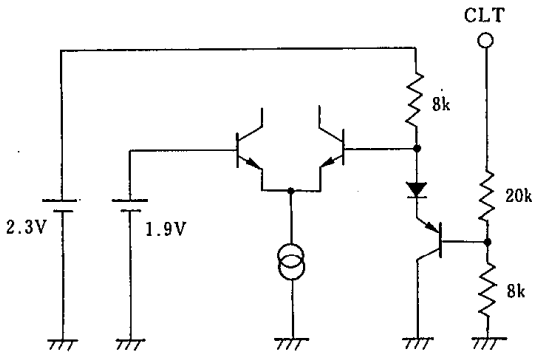
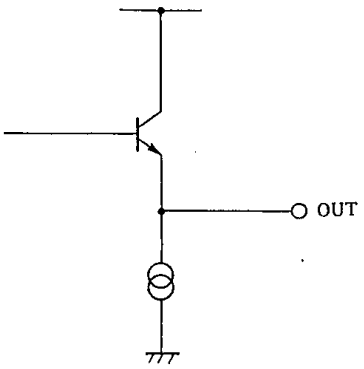
■ TEST CIRCUIT



■ TERMINAL EXPLANATION

PIN NO.	PIN NAME	VOLTAGE	INSIDE EQUIVALENT CIRCUIT
7 9 14 16	IN 1 IN 2 IN 3 IN 4 (Input)	2.5V	
8 12 3	CTL1 CTL2 CTL3 (Switching)		
1	OUT (Output)	1.8V	
6	V^+	5 V	
5 10 15	GND 1 GND 2 GND 3		

■APPLICATION

This IC requires 0.1uF capacitor between INPUT and GND for bias type input at mute mode.