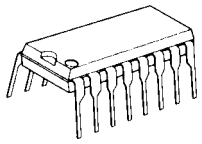
4-INPUT 1MUTE VIDEO SWITCH

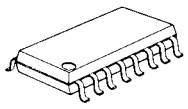
■ GENERAL DESCRIPTION

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 (+4.75 to +13V)
- Crosstalk 75dB (at 4.43MHz)
- Wide Bandwidth Frequency 7MHz ($2V_{P-P}$ Input)
- Package Outline DIP16, DMP16
- Bipolar Technology

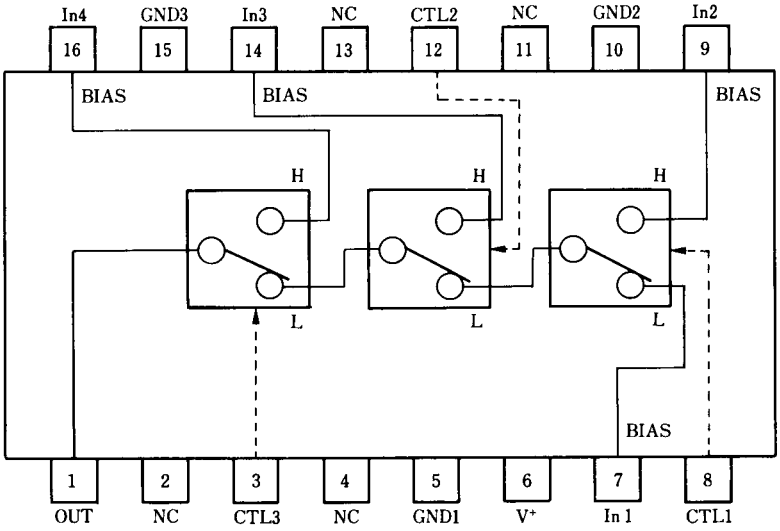
■ RECOMMENDED OPERATING CONDITION

- Operating Voltage V^+ 4.75 to 13.0V

■ APPLICATIONS

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

■ BLOCK DIAGRAM



NJM2293D
NJM2293M

■ MAXIMUM RATINGS

(T_a = 25ºC)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	14	V
Power Dissipation	P_D	(DIP16) 700 (DMP16) 350	mW mW
Operating Temperature Range	T_{opr}	-40 to +85	ºC
Storage Temperature Range	T_{stg}	-40 to +125	ºC

■ ELECTRICAL CHARACTERISTICS

(V^+ = 5V, T_a = 25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current (1)	I_{CC1}	V^+ = 5V (Note1)	4.5	6.5	8.5	mA
Operating Current (2)	I_{CC2}	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 = $2V_{P-P}$, Standard Staircase Signal	-	0.3	-	%
Differential Phasa	DP	V_I = $2V_{P-P}$, Standard 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

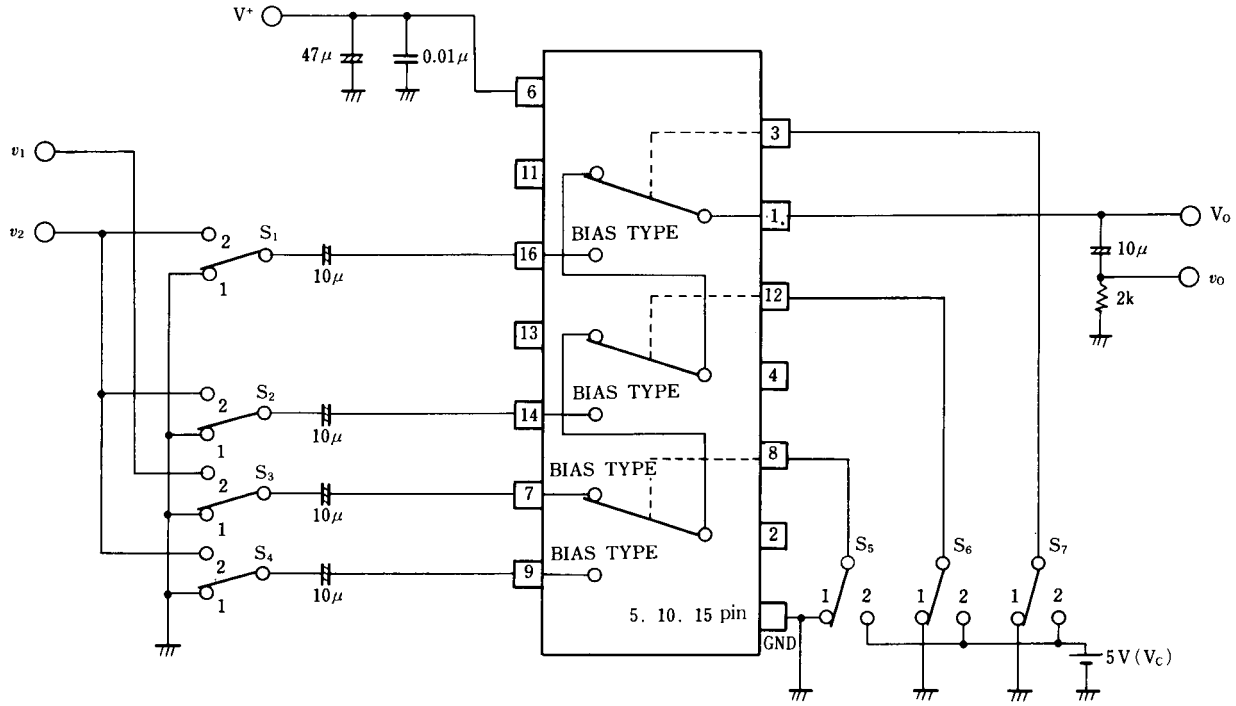
(Note1) S1 = S2 = S3 = S4 = S5 = S6 = S7 = 1

(Note2) S1 = S2 = S3 = S4 =1 Measure the output DC voltage difference

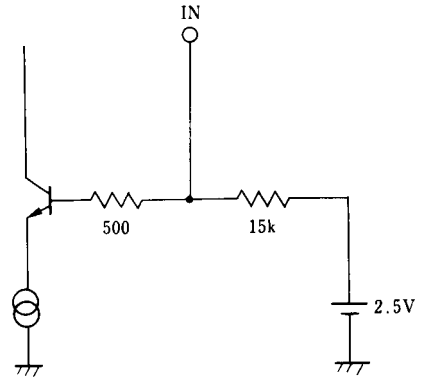
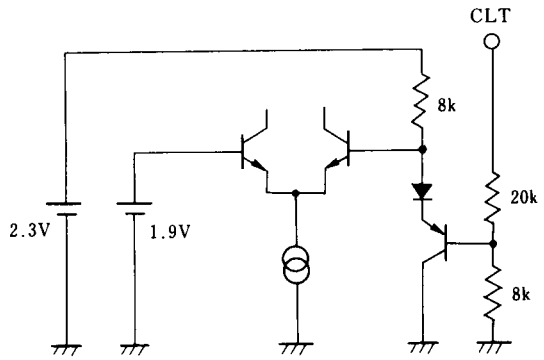
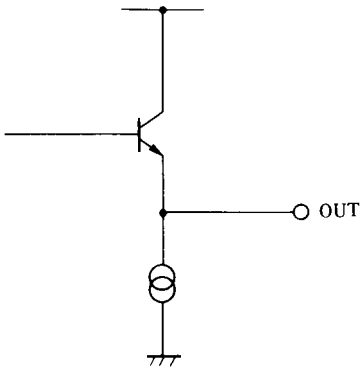
a) S5 = S6 = S7= 1, b) S7 = 2, S5 = S6 = 1

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

■ 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	CTL 1 CTL 2 CTL 3 [Switching]		
1	OUT [Output]	1.8V	
6	V^+	5V	
5 10 15	GND 1 GND 2 GND 3		

■ APPLICATION

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