

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).

■ 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

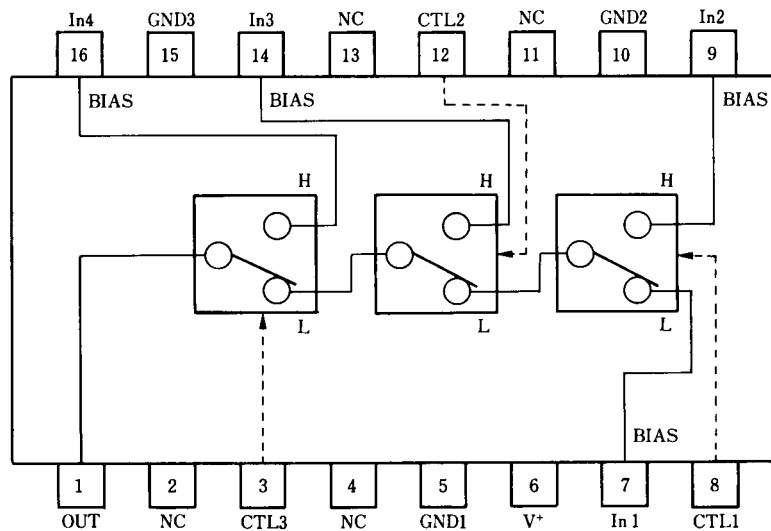
■ RECOMMENDED OPERATING CONDITION

- Operating Voltage V⁺ 4.75 to 13.0V

■ APPLICATIONS

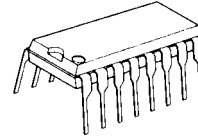
- VCR, Video Camera, AV-TV, Video Disk Player.

■ BLOCK DIAGRAM

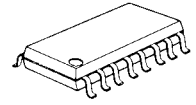


NJM2293D
NJM2293M

■ PACKAGE OUTLINE



NJM2293D



NJM2293M

NJM2293

■ 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 mW
Operating Temperature Range	T_{opr}	-40 to +85	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +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)	4.5	6.5	8.5	mA
Operating Current (2)	I_{CC2}	$V^+ = 9\text{V}$ (Note1)	5.8	8.3	10.8	mA
Voltage Gain	G_V	$V_i = 100\text{kHz}$, $2V_{P-P}$, 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 Phase	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

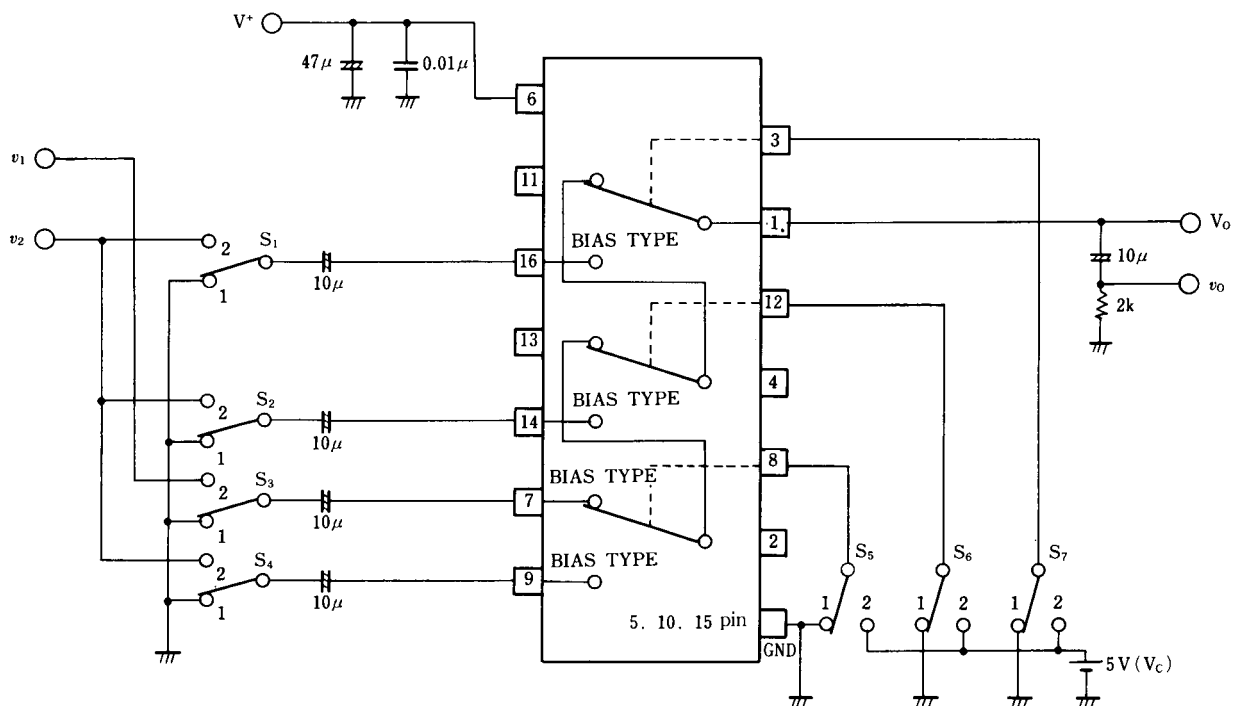
(Note1) $S_1 = S_2 = S_3 = S_4 = S_5 = S_6 = S_7 = 1$

(Note2) $S_1 = S_2 = S_3 = S_4 = 1$ Measure the output DC voltage difference

a) $S_5 = S_6 = S_7 = 1$, b) $S_7 = 2$, $S_5 = S_6 = 1$

c) $S_6 = 2$, $S_5 = 1$ d) $S_5 = 2$

■ TEST CIRCUIT

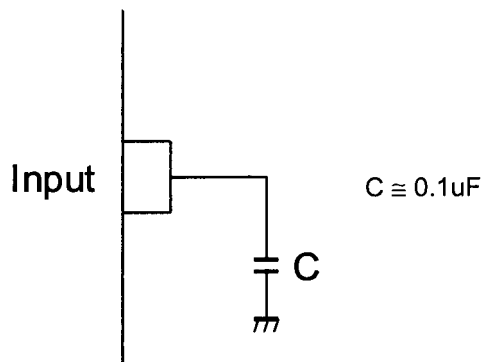


■ TERMINAL EXPLANATION

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 0.1 μ F capacitor between INPUT and GND for bias type input at mute mode.



[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.