3-INPUT VIDEO SWITCH WITH 75Ω DRIVER

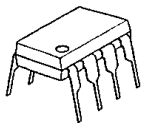
■ GENERAL DESCRIPTION

The NJM2243 is a three input integrated video switch which selects one video or audio signal from three input signals.

It contains driver circuit for 75Ω load and is able to connect to TV monitor.

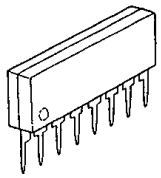
Its operating supply voltage range is 9 to 12V and bandwidth is 10MHz. Crosstalk is 70dB (at 4.43MHz).

■ PACKAGE OUTLINE



NJM2243D

NJM2243M



NJM2243L

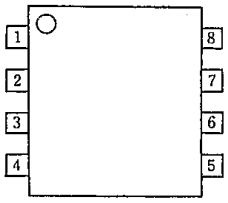
■ FEATURES

- Operating Voltage 9～13V
- 3 Input-1 Output
- Internal Driver Circuit for 75Ω Impedance
- Muting Function available
- Low power Dissipation 15mA
- Cross-talk 70dB(at 4.43MHz)
- Wide Frequency Range 10MHz
- Package Outline DIP8, DMP8, SIP8
- Bipolar Technology

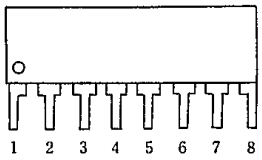
■ APPLICATION

- VCR Video Camera AV-TV Video Disc Player

■ PIN CONFIGURATION



NJM2243D
NJM2243M



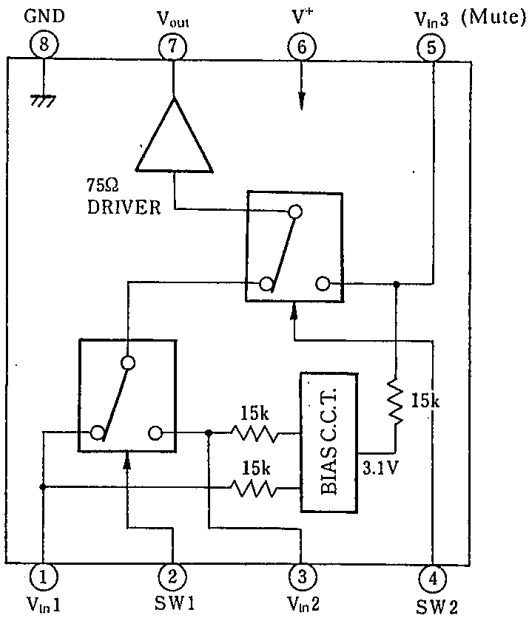
NJM2243L

PIN FUNCTION

1. $V_{in}1$
2. SW1
3. $V_{in}2$
4. SW2
5. $V_{in}3$
6. V^+
7. V_{out}
8. GND

■ BLOCK DIAGRAM

Pin Connection



■ INPUT CONTROL SIGNAL-OUTPUT SIGNAL

SW 1	SW 2	OUTPUT SIGNAL
L	L	$V_{IN}1$
H	L	$V_{IN}2$
L/H	H	$V_{IN}3$

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	15	V
Power Dissipation	P_D	(DIP8) 500	mW
		(DMP8) 300	mW
		(SIP8) 800	mW
Operating Temperature Range	T_{opr}	−20～+75	℃
Storage Temperature Range	T_{stg}	−40～+125	℃

■ ELECTRICAL CHARACTERISTICS

(V^+=9V, Ta=25℃)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Recommended Supply Voltage	V^+		8.5	—	13.0	V
Operating Current	I_{CC}	S1=S2=S3=S4=S5=2	13.0	18.5	25.0	mA
Voltage Gain	G_V	Vin=2.0V_{P-P}, 100kHz, Vo/Vi, R_L=150Ω	−0.8	−0.3	+0.2	dB
Frequency Characteristics	G_f	Vin=2.0V_{P-P}, V_O(10MHz)/V_O(100kHz),R_L=1kΩ	−1.0	—	+1.0	dB
Differential Gain	DG	Vin=2.0V_{P-P}, staircase, R_L=150Ω	—	0.3	—	%
Differential Phase	DP	Vin=2.0V_{P-P}, staircase, R_L=150Ω	—	0.3	—	deg.
Output Offset Voltage	V_{off}	S1=S2=S3=2, S5=1→2 V_O:Voltage change	—	—	±30	mV
Crosstalk	CT	Vin=2V_{P-P}, 4.43MHz, Vo/Vi	—	−70	—	dB
Switch Change Voltage	V_{CH}	All inside Sw:ON	2.4	—	—	V
	V_{CL}	All inside Sw:OFF	—	—	0.8	V
Input Impedance	R_I		—	15	—	kΩ

(note) Unless specified, tested with three mode below.

a) S1=1, S2=S3=S4=S5=2 b) S2=S4=1, S1=S3=S5=2 c) S3=S5=1, S1=S2=2, S4=1 or 2

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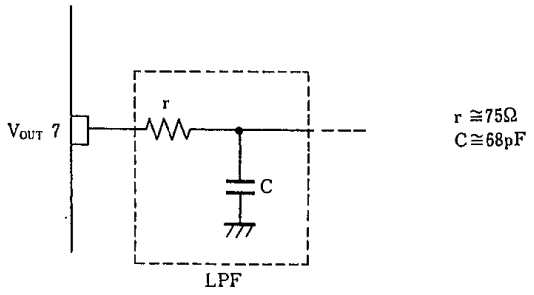
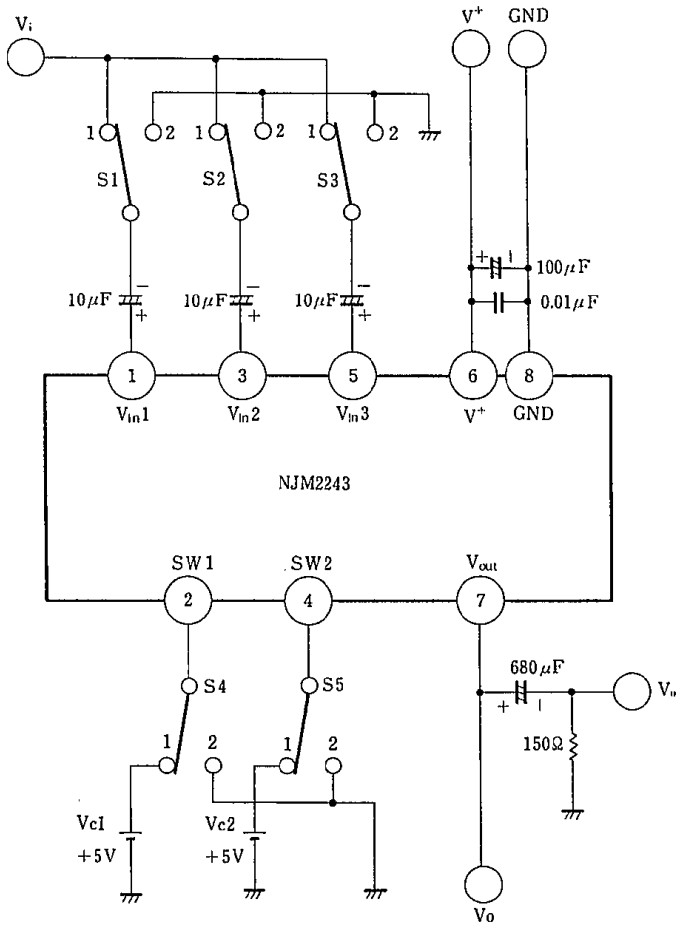
■ APPLICATION

Oscillation Prevention on light loading conditions
Recommended under circuit



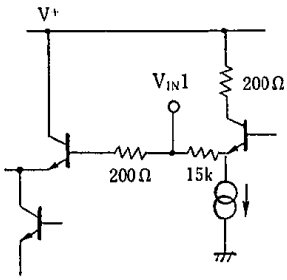
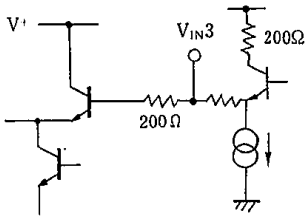
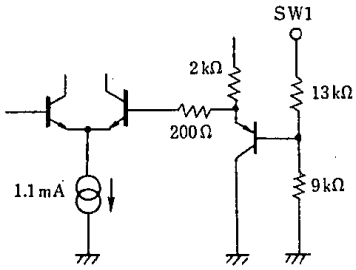
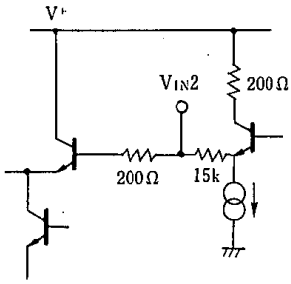
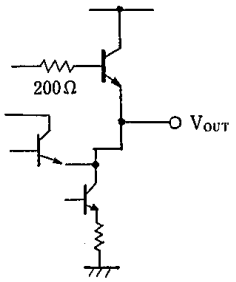
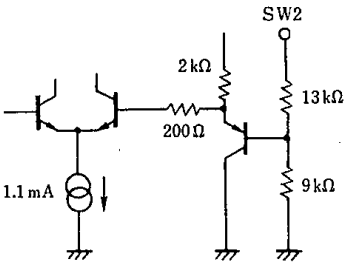
■ TEST CIRCUIT



DC Voltage Each Terminal
Typ. on Test Circuit Ta =25℃

Terminal Name	$V_{IN}1$	SW1	$V_{IN}2$	SW2	$V_{IN}3$	V^+	V_{OUT}	GND
DC Voltage	$\frac{3}{5}V^+$	—	$\frac{3}{5}V^+$	—	$\frac{3}{5}V^+$	—	$\frac{2}{3}V^+-0.7$	—

■ EQUIVALENT CIRCUIT

PIN NO.	PIN FUNCTION	INSIDE EQUIVALENT CIRCUIT	PIN NO.	PIN FUNCTION	INSIDE EQUIVALENT CIRCUIT
1	$V_{IN}1$		5	$V_{IN}3$ (Mute)	
2	SW 1		6	V^+	
3	$V_{IN}2$		7	V_{OUT}	
4	SW 2		8	GND	

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■APPLICATION

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