

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).

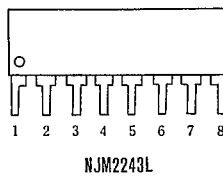
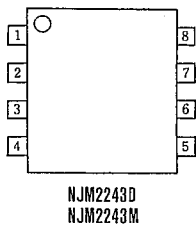
■ FEATURES

- 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

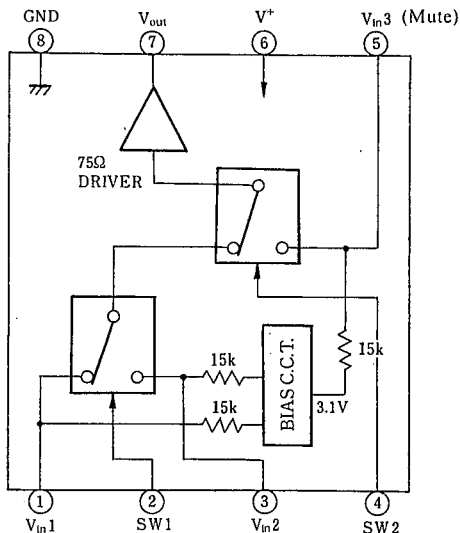


PIN FUNCTION

1. V_{in1}
2. SW1
3. V_{in2}
4. SW2
5. V_{in3}
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_{in1}
H	L	V_{in2}
L/H	H	V_{in3}

■ ABSOLUTE MAXIMUM RATINGS

($T_a=25^\circ\text{C}$)

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}	$-20\sim+75$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-40\sim+125$	$^\circ\text{C}$

■ ELECTRICAL CHARACTERISTICS

($V^+=9\text{V}$, $T_a=25^\circ\text{C}$)

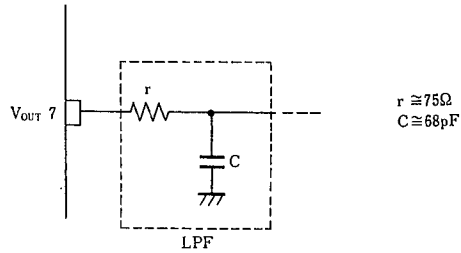
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Recommended Supply Voltage	V^+		8.5	—	13.0	V
Operating Current	I_{CC}	$S1=S2=S3=S4=S5=2$	13.0	18.5	25.0	mA
Voltage Gain	G_V	$V_{in}=2.0V_{p,p}$, 100kHz, V_O/V_i , $R_L=150\Omega$	-0.8	-0.3	+0.2	dB
Frequency Characteristics	G_f	$V_{in}=2.0V_{p,p}$, $V_O(10\text{MHz})/V_O(100\text{kHz})$,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

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

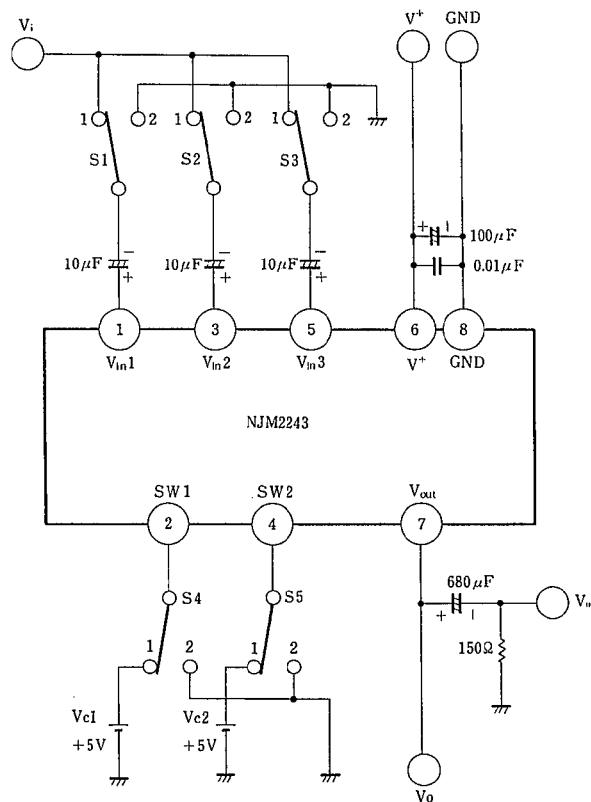
- a) $S1=1$, $S2=S3=S4=S5=2$ b) $S2=S4=1$, $S1=S3=S5=2$ c) $S3=S5=1$, $S1=S2=2$, $S4=1$ or 2

■ APPLICATION

Oscillation Prevention on light loading conditions
Recommended under circuit



■ TEST CIRCUIT



DC Voltage Each Terminal
Typ. on Test Circuit $T_a = 25^\circ\text{C}$

Terminal Name	V_{IN1}	SW1	V_{IN2}	SW2	V_{IN3}	V^+	V_{OUT}	GND
DC Voltage	$\frac{3}{5} V^+$	—	$\frac{3}{5} V^+$	—	$\frac{3}{5} V^+$	—	$\frac{2}{5} V^+ - 0.7$	—

■ EQUIVALENT CIRCUIT

PIN NO.	PIN FUNCTION	INSIDE EQUIVALENT CIRCUIT	PIN NO.	PIN FUNCTION	INSIDE EQUIVALENT CIRCUIT
1	V _{IN1}		5	V _{IN3} (Mute)	
2	SW 1		6	V ⁺	
3	V _{IN2}		7	V _{OUT}	
4	SW 2		8	GND	

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MEMO

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