

3-INPUT VIDEO SWITCH WITH 75 Ω DRIVER

■ GENERAL DESCRIPTION

The NJM2244 is a three input integrated video switch which selects one video or audio signal from three input signals.

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

Its operating supply voltage range is 5 to 12V and bandwidth is 10MHz. Crosstalk is 70dB (at 4.43MHz).

NJM2244 contains clamp function and it can be operated while setting DC level fixed in position of the video signal.

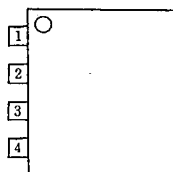
■ FEATURES

- Operating Voltage 4.75 ~ 13V
- 3 Input-1 Output
- Internal Driver Circuit for 75 Ω Impedance
- Muting Function available
- Internal Clamp Function
- Low power Dissipation 16.5mA
- Cross-talk 70dB(at 4.43MHz)
- Wide Frequency Range 10MHz(2V_{P-P} Input)
- Package Outline DIP8, DMP8, SIP8
- Bipolar Technology

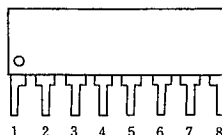
■ APPLICATION

- VCR Video Camera AV-TV Video Disc Player

■ PIN CONFIGURATION



NJM2244D
NJM2244M



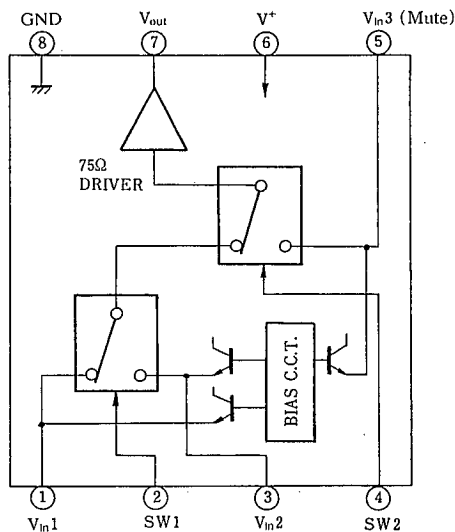
NJM2244L

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 _{IN 1}
H	L	V _{IN 2}
L/H	H	V _{IN 3}

note): Input clamp voltage is about 2/5 of supply voltage.

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V*	15	V
Power Dissipation	Pd	(DIP8) 500	mW
		(DMP8) 300	mW
		(SIP8) 800	mW
Operating Temperature Range	T _{opr}	-20~+75	°C
Storage Temperature Range	T _{stg}	-40~+125	°C

■ ELECTRICAL CHARACTERISTICS

(V*=5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Recommended Supply Voltage	V*		4.75	—	13.0	V
Operating Current	I _{CC}	S1=S2=S3=S4=S5=2	11.5	16.5	22.0	mA
Voltage Gain	G _V	V _{in} =2.0V _{p-p} , 100kHz, V _O /V _i , R _L =150Ω	-0.8	-0.3	+0.2	dB
Frequency Characteristic	G _f	V _{in} =2.0V _{p-p} , V _O (10MHz)/V _O (100kHz) R _L =150Ω	-1.0	—	+1.0	dB
Differential Gain	DG	V _{in} =2.0V _{p-p} , staircase, R _L =150Ω	—	0.3	—	%
Differential Phase	DP	V _{in} =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	—	0	±30	mV
Crosstalk	CT	V _{in} =2V _{p-p} , 4.43MHz, V _O /V _i	—	-70	—	dB
Switch Change Voltage	V _{CH}	All inside SW:ON	2.4	—	—	V
	V _{CL}	All inside SW:OFF	—	—	0.8	V

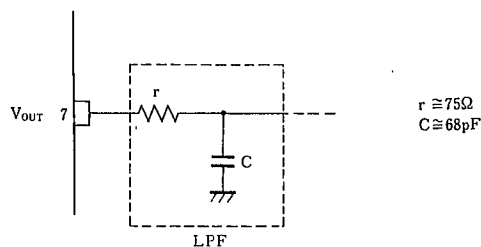
(note) Unless specified, tested with three mode below.

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

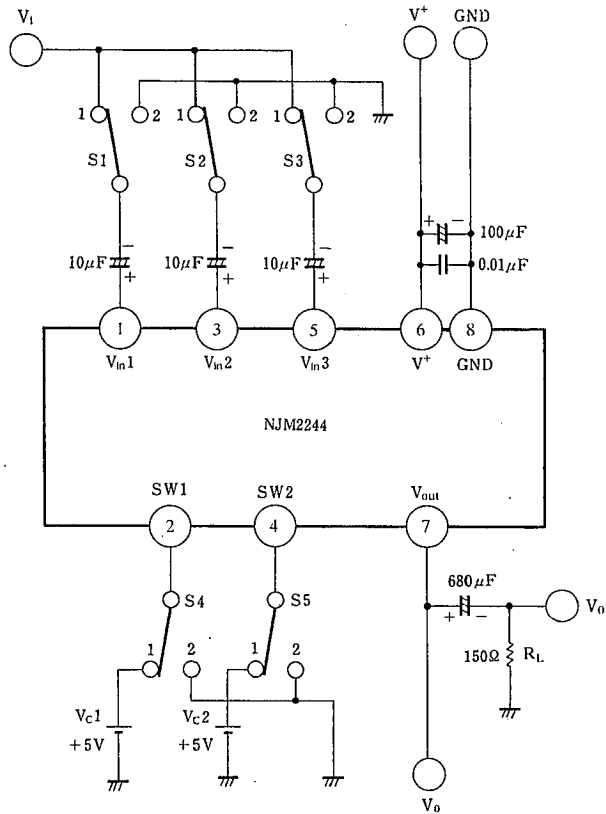
■ APPLICATION

Oscillation Prevention on light loading conditions
Recommended under circuit

This IC requires 1MΩ resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.



■ 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	$\frac{2}{5} V^+$	—	$\frac{2}{5} V^+$	—	$\frac{2}{5} V^+$	—	$\frac{2}{5} V^+ - 0.7$	—

■ EQUIVALENT CIRCUIT

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

MEMO

[CAUTION]

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