

3-INPUT VIDEO SWITCH WITH 6dB AMPLIFIER

■ GENERAL DESCRIPTION

The **NJM2245** is a three input integrated video switch which selects one video or audio signal from three input signals.

It contains 6dB amplifier and its operating supply voltage range is 8.5 to 13V and bandwidth is 5MHz. Crosstalk is 65dB (at 4.43MHz).

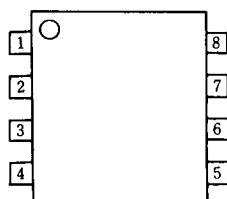
■ FEATURES

- Operating Voltage 8.5 to 13V
- 3 Input-1 Output
- Internal 6dB Amplifier
- Muting Function available
- Cross-talk 65dB (at 4.43MHz)
- Wide Frequency Range 5MHz (1V_{P-P} Input)
- Package Outline DIP8, DMP8, SIP8
- Bipolar Technology

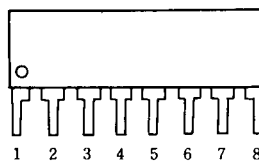
■ APPLICATION

- VCR AV-TV Video Disc Player

■ PIN CONFIGURATION



NJM2245D
NJM2245M

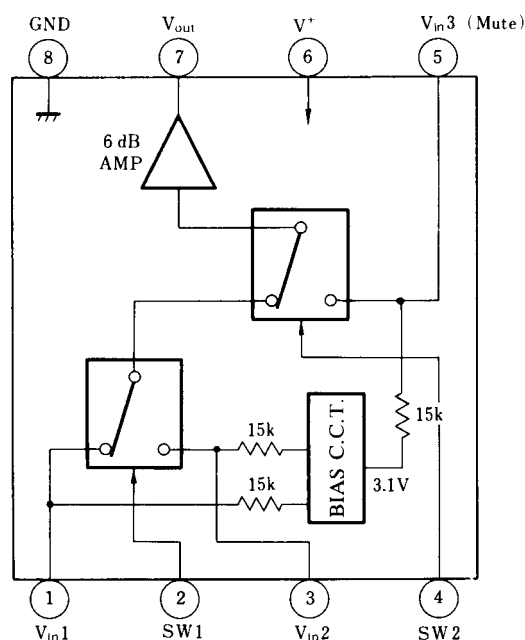


NJM2245L

PIN FUNCTION

1. V_{IN1}
2. SW1
3. V_{IN2}
4. SW2
5. V_{IN3}
6. V⁺
7. V_{OUT}
8. GND

■ BLOCK DIAGRAM



■ INPUT CONTROL SIGNAL-OUTPUT SIGNAL

SW1	SW2	OUTPUT SIGNAL
L	L	V _{IN1}
H	L	V _{IN2}
L/H	H	V _{IN3}

NJM2245

■ 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}	-40 to +85	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +125	$^\circ\text{C}$

■ ELECTRICAL CHARACTERISTICS

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

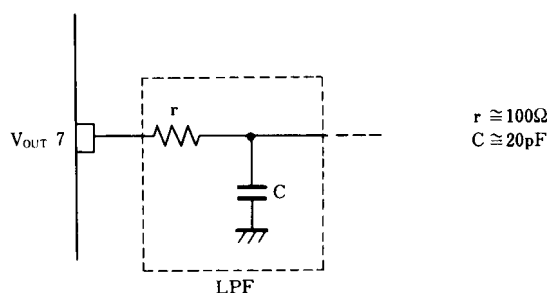
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Recommended Supply Voltage	V^+		8.5	-	13.0	V
Operating Current	I_{CC}	$S1 = S2 = S3 = S4 = S5 = 2$	10.0	16.5	23.0	mA
Voltage Gain	G_V	$V_{in} = 1.0V_{P-P}$, 100kHz, V_O / V_i , $R_L = 1k\Omega$	5.7	6.2	6.7	dB
Frequency Characteristic	G_f	$V_{in} = 1.0V_{P-P}$, V_O (10MHz) / V_O (100kHz) $R_L = 1k\Omega$	-1.0	-	+1.0	dB
Differential Gain	DG	$V_{in} = 1.0V_{P-P}$, staircase, $R_L = 1k\Omega$	-	0.3	-	%
Differential Phase	DP	$V_{in} = 1.0V_{P-P}$, staircase, $R_L = 1k\Omega$	-	0.3	-	deg.
Output Offset Voltage	V_{off}	$S1 = S2 = S3 = 2$, $S5 = 1 \rightarrow 2$ V_O : voltage change	-	-	± 60	mV
Crosstalk	CT	$V_{in} = 1.0V_{P-P}$, 4.43MHz, V_O / V_i	-	-65	-	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	-	k Ω

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

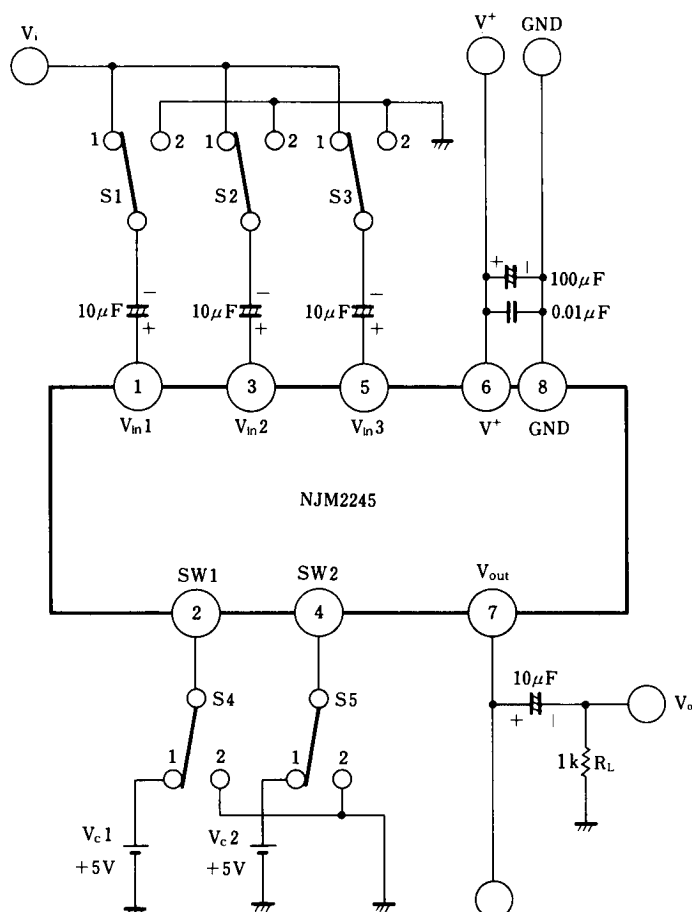
a) $S1 = 1$, $S2 = S3 = S4 = S5 = 2$ b) $S2 = S4 = 1$, $S1 = S3 = S5 = 2$ c) $S1 = S2 = 2$, $S3 = S5 = 1$, $S4 = 1$ or 2

■ APPLICATION

Oscillation Prevention on light loading conditions Recommended under circuit.



■ TEST CIRCUIT



DC Voltage Each Terminal

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

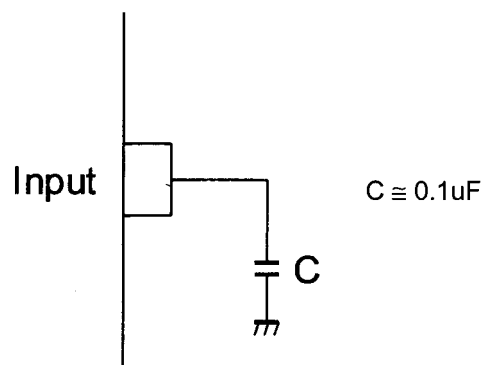
Terminal Name	V_{IN1}	SW1	V_{IN2}	SW2	V_{IN3}	V^+	V_{OUT}	GND
DC Voltage	$\frac{2}{5}V^+$	-	$\frac{2}{5}V^+$	-	$\frac{2}{5}V^+$	-	$\frac{2}{5}V^+ - 2.1$	-

■ EQUIVALENT CIRCUIT

PIN NO.	PIN FUNCTION	INSIDE EQUIVALENT CIRCUIT	PIN NO.	PIN FUNCTION	INSIDE EQUIVALENT CIRCUIT
1	V _{IN1}		5	V _{IN3} (Mute)	
2	SW1		6	V ⁺	
3	V _{IN2}		7	V _{OUT}	
4	SW2		8	GND	

■ APPLICATION

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



[CAUTION]

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