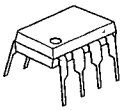
3-INPUT VIDEO SUPER IMPOSER

■ GENERAL DESCRIPTION

The NJM2248 is 3-input video switch for video and audio signal. Two input terminals have sink-chip clamp function and so it is applied to fixed DC level of video sighal. The other input terminal is transistor base input for luminant signal and so luminant level may be easily fixed by outer circuit. Its operating supply voltage range is 4.75 to 13V and bandwidth is 10MHz. Cross-talk is 70dB (at 4.43MHz).

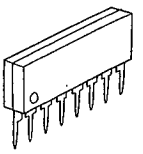
■ PACKAGE OUTLINE



NJM2248D

NJM2248M

NJM2248V



NJM2248L

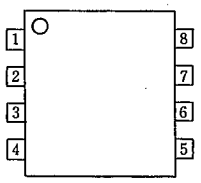
■ FEATURES

- Operating Voltage (+4.75V～+13V)
- 3 Input-1 Output
- Internal Clamp Function ($V_{IN}1$, $V_{IN}2$)
- Internal Luminance Signal Control Function ($V_{IN}3$)
- Cross-talk 70dB(at 4.43MHz)
- Wide Frequency Range
- Package Outline DIP8, DMP8, SIP8, (SSOP8)
- Bipolar Technology

■ APPLICATION

- VCR, Video Camera, AV-TV, Video Disc Player

■ PIN CONFIGURATION



NJM2248D
NJM2248M
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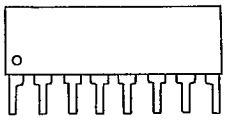
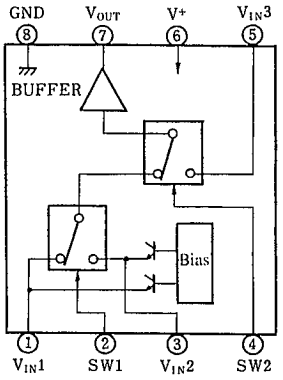


NJM2248L

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



■ 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
		(SSOP8) 250	mW
		(SIP8) 800	mW
Operating Temperature Range	T_{opr}	−20～+75	℃
Storage Temperature Range	T_{stg}	−40～+125	℃

■ ELECTRICAL CHARACTERISTICS

(V^+=5V, Ta=25℃)

PARAMETERS	SYMBOLS	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT.
Recommended Supply Voltage	V^+		4.75	—	13.0	V
Operating Current	I_{CC}	S1=S2=S3=S4=S5=1	—	10.5	14.0	mA
Voltage Gain	G_V	V_I=2.5V_{P-P},100kHz, V_O/V_I	−0.5	—	+0.5	dB
Frequency Characteristics	G_f	V_I=2.0V_{P-P}, V_O(10MHz)/V_O(100kHz)	−1.0	0	+1.0	dB
Differential Gain	DG	V_I=2V_{P-P}, Staircase Signal	—	0	—	%
Differential Phase	DP	V_I=2V_{P-P}, Staircase Signal	—	0	—	deg
Cross-talk	CT	V_I=2.0V_{P-P}, 4.43MHz, V_O/V_I (note 1)	—	−70	—	dB
Switch Change Voltage	V_{CH}	All inside SW: ON	2.4	—	—	V
	V_{CL}	All inside SW: OFF	—	—	0.8	V
Output Impedance	R_O		—	10	—	Ω

(Note 1) : Tested on all combination except three below.
a) S1=2, S4=S5=1 b) S2=2, S4=2, S5=1 C) S3=2, S5=2

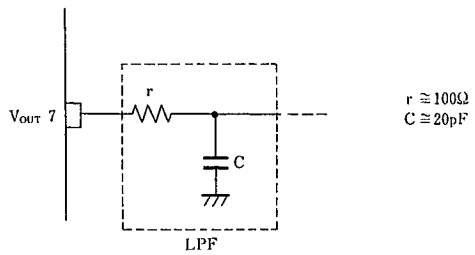
(Note 2) : Unless specified, tested with V_{BIAS}=3V.

(Note 3) : If it is not shown about switch condition, it is tested on three condtion below.
a) S1=2, S2=S3=S4=S5=1 b) S1=1, S2=2, S3=1, S4=2, S5=1 c) S1=S2=1, S3=2, S4=1 or 2, S5=2

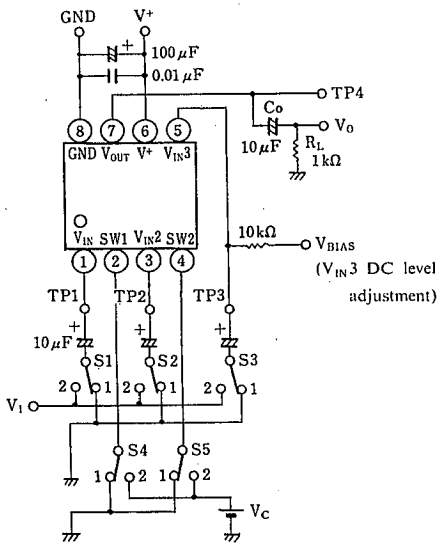
(Note 4) : Clamp voltage of Vin1 and Vin2 is about 2/5 of supply voltage (about 2.0V if V^+=5V).

■ SPECIAL CARES TO BE TAKEN WHEN APPLICATION

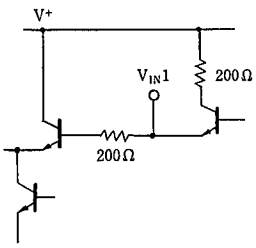
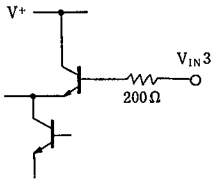
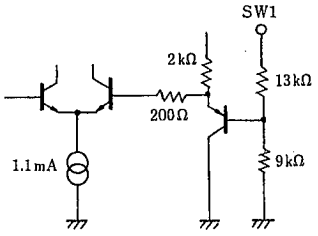
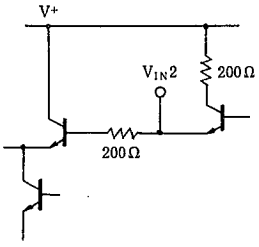
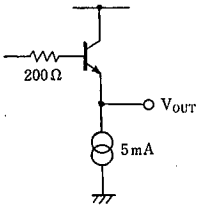
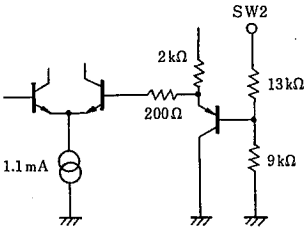
This IC requires 1MΩ resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.



■ TEST CIRCUIT



■ TERMINAL FUNCTION

PIN NO.	PIN SYMBOL	EQUIVALENT CIRCUIT	PIN NO.	PIN SYMBOL	EQUIVALENT CIRCUIT
1	$V_{IN}1$		5	$V_{IN}3$	
2	SW 1		6	V+	
3	$V_{IN}2$		7	V_{OUT}	
4	SW 2		8	GND	

MEMO