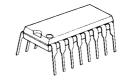


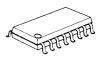
3-INPUT / 2-INPUT VIDEO SWITCH

■ GENERAL DESCRIPTION

The **NJM2506** is video switch for video and audio signal. It contains 3 input-1 output and 2 input-1 output video switch. 3 input-1 output switch has clamp function and so is applied to fixed DC level of video signal. Its operating voltage is 4.75 to 13V and bahdwidth is 10MHz. Crosstalk is 75dB (at f = 4.43MHz)

■ PACKAGE OUTLINE





NJM2506D

NJM2506M

■ FEATURES

- Wide Operating Supply Range (+4.75V to +13V)
- 3 Input-1 Output and 2 Input-1 Output
- Internal Clamp Function
- Crosstalk 75dB (at 4.43MHz)
- Wide Frequency Range 10MHz (2V_{P-P} Input)
 Package Outline DIP16, DMP16
- Bipolar Technology

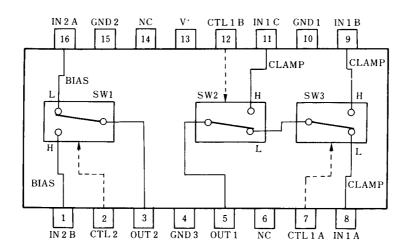
■ RECOMMENDED OPERATING CONDITION

Operating Voltage
 V⁺
 4.75V to 13.0V

■ APPLICATION

• VCR, Video Camera, AV-TV, Video Disk Player.

■ BLOCK DIAGRAM



NJM2506D NJM2506M

■ ABSOLUTE MAXIMUM RATINGS

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

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	14	V
Power Dissipation	P _D	(DIP16) 700 (DMP16) 350	mW mW
Operating Temperature Range	T _{opr}	-40 to +85 °C	
Storage Temperature Range	T _{stg}	-40 to +125	℃

■ ELECTRICAL CHARACTERISTICS

 $(V^{+} = 5V, T_a = 25^{\circ}C)$

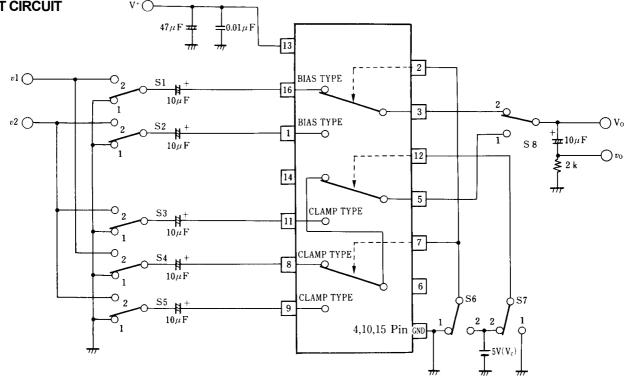
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current (1)	I _{CC1}	V ⁺ = 5V (Note1)	6.7	9.7	12.7	mA
Operating Current (2)	I _{CC2}	V ⁺ = 9V (Note1)	8.6	12.3	16.0	mA
Voltage Gain	G_V	$V_{I} = 2V_{P-P}/100khz, V_{O}/V_{I}$	-0.6	-0.1	+0.4	dB
Frequency Response	G _f	$V_{I} = 2V_{P-P}, V_{O} (10MHz / 100kHz)$	-1.0	0	+1.0	dB
Differential Gain	DG	V _I = 2V _{P-P} , Staircase Signal	-	0.3	-	%
Differential Phasa	DP	V _I = 2V _{P-P} , Staircase Signal	-	0.3	-	deg
Output offset Voltage (1)	V _{OS1}	(Note2)	-10	0	+10	mV
Output offset Voltage (2)	V _{OS2}	(Note2)	-30	0	+30	mV
Crosstalk	CT	$V_{I} = 2V_{P-P}, 4.43MHz, V_{O} / V_{I}$	-	-75	-	dB
Switch Change Voltage	V_{CH}	All inside SW : ON	-2.5	-	-	V
Switch Change Voltage	V_{CL}	All inside SW : OFF	-	-	1.0	V

(Note1): S1 = S2 = S3 = S4 = S5 = S6 = S7 = 1

(Note2): Output DC Voltage Difference is tested on S6 = $1\rightarrow2$, S1 = S2 = S3 = S4 = S5 = 1, S8 = 2 and S7 = 1

(Note3) : Output DC Voltage Difference is tested on S6 = $1\rightarrow2$, S7 = 1 (or S6 = 1, S7= $1\rightarrow2$,), S1 = S2 = S3 = S4 = S5 = 1 and S8 = 1

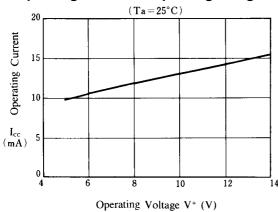
■ TEST CIRCUIT



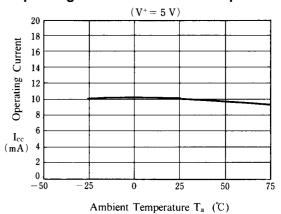
■ PIN FUNCTION

PIN No.	PIN NAME	DC VOLTAGE	INSIDE EQUIVALENT CIRCUIT
16 1	IN 2 A IN 2 B [Input]	2.5V	500 15k 2.5V
8 9 11	IN 1A IN 1B IN 1C [Input]	1.5V	500 ———————————————————————————————————
7 12 2	CTL 1A CTL 1B CTL 2 [Control]		2.3V 1.9V 20k 8 k
5	OUT1 [Output]	1.8V	
3	OUT2 [Output]	0.8V	OUT
13	V ⁺	5V	
15 4 10	GND 1 GND 2 GND 3		

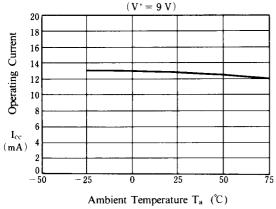
Operating Current vs. Operating Voltage



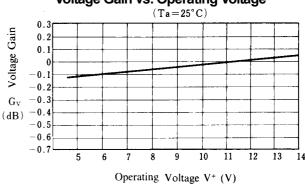
Operating Current vs. Ambient Temperature



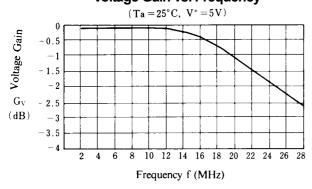
Operating Current vs. Ambient Temperature



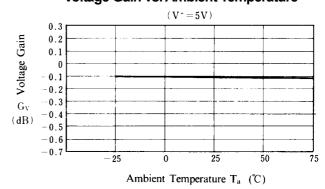
Voltage Gain vs. Operating Voltage

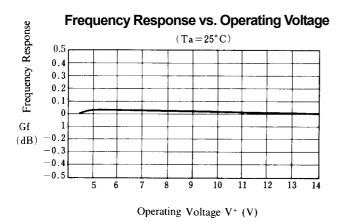


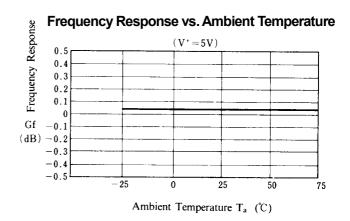
Voltage Gain vs. Frequency

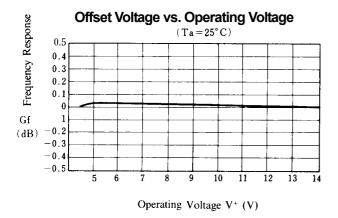


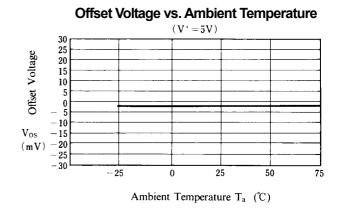
Voltage Gain vs. Ambient Temperature

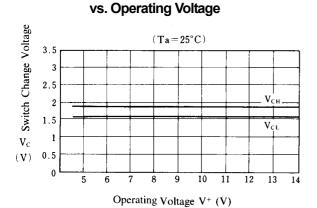




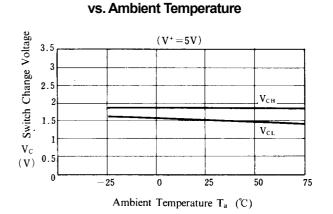




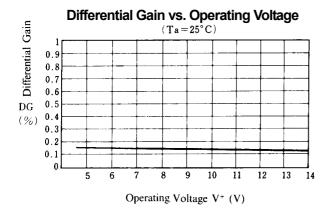


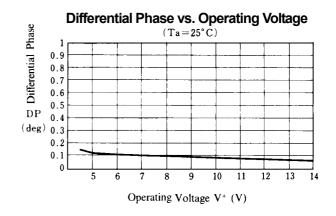


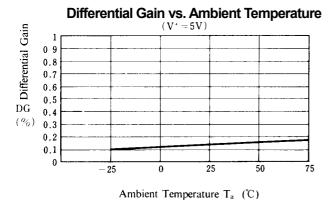
Switch Change Voltage

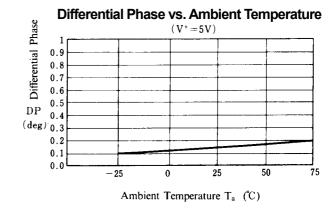


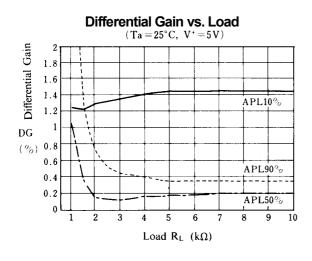
Switch Change Voltage

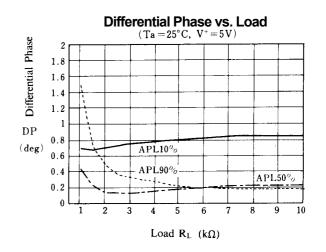




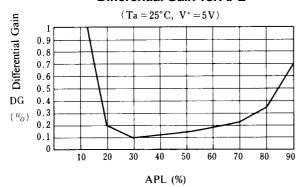




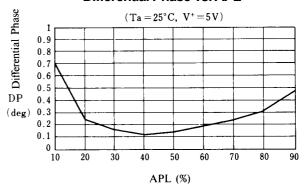


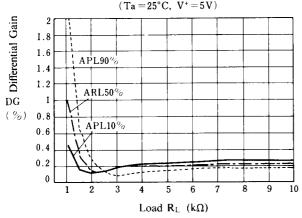


Differential Gain vs. APL

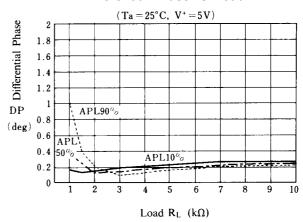


Differential Phase vs. APL

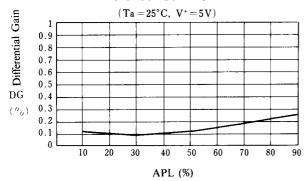




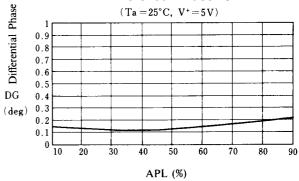
Differential Phase vs. Load



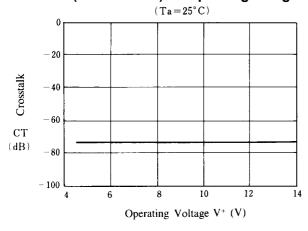
Differential Gain vs. APL



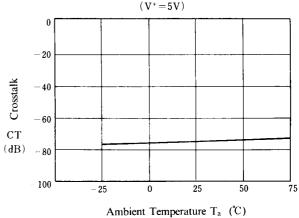
Differential Phase vs. APL



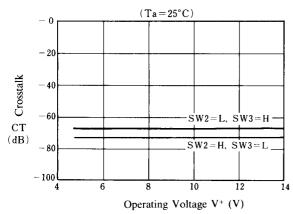
Crosstalk (IN2A to OUT2) vs. Operating Voltage



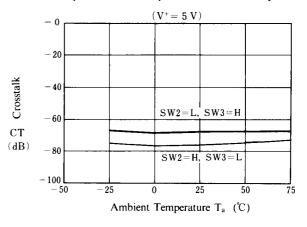
Crosstalk (IN2A to OUT2) vs. Ambient Temperature



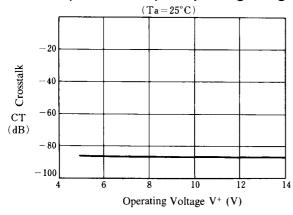
Crosstalk (IN1B to OUT1) vs. Operating Voltage



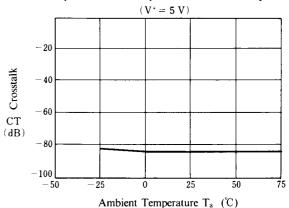
Crosstalk (IN1B to OUT1) vs. Ambient Temperature



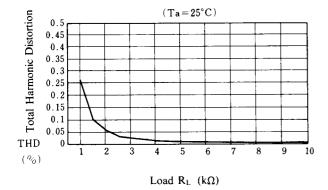
Crosstalk (IN1B to OUT1) vs. Operating Voltage



Crosstalk (IN1B to OUT1) vs. Ambient Temperature



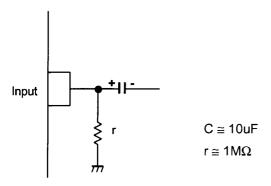
Total Harmonic Distortion vs. Load



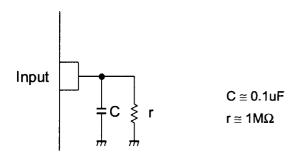
New Japan Radio Co., Ltd.

■ APPLICATION

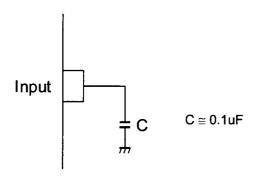
This IC requires $1M\Omega$ resistance between INPUT and GND pin for clamp type input since the minute current causes an unstable pin voltage.



This IC requires $0.1\mu F$ capacitor between INPUT and GND, $1M\Omega$ resistance between INPUT and GND for clamp type input at mute mode.



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



[CAUTION]

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