JRC

SARAMAN

NJM2513M

3-INPUT/2-INPUT VIDEO SWITCH

4.75~13.0V

GENERAL DESCRIPTION

The NJM2513 is a switching IC for switching over from one audio or video input signal to another. Internalizing 3 input-1 output, and 2 input-1 output and then each set can be operated independently. Side of 2 input-1 output are "Clamp type", and they can be operated while setting DC level fixed in position of the video signal. It is a higher efficiency video switch, featuring the operating voltage 4.75 to 13V, the frequency feature 10MHz, and then the Crosstalk 75dB (at 4.43MHz).

FEATURES

- Operating Voltage (+4.75V~+13V)
- 3 Input-1 Output/2 Input-1 output
- Crosstalk 75dB(at 4.43MHz)
- Wide Bandwidth Frequency 10MHz(2VP-P Input)
- Package Outline DIP16, DMP16
- Bipolar Technology

RECOMMENDED OPERATING CONDITION

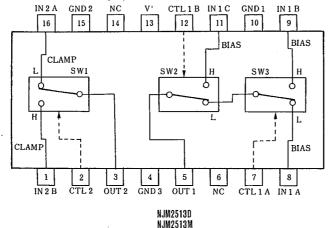
V+

Operating Voltage

APPLICATIONS

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





PACKAGE OUTLINE



NJM2513D



NJM2513

MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V*	14	v
Power Dissipation	PD	(DIP16) 700	mW
		(DMP16) 350	mW
Operating Temperature Range	Topr	-40~+85	°C
Storage Temperature Range	Tstg	-40~+125	°

ELECTRICAL CHARACTERISTICS

(V+=5V, Ta=25℃)

(Ta=25℃)

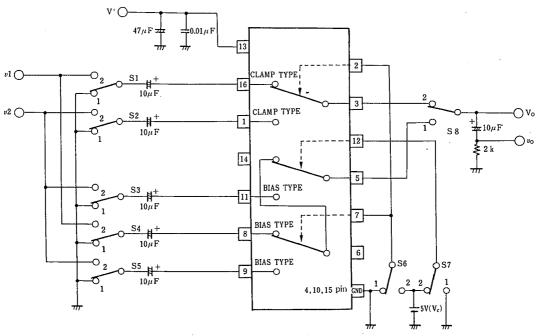
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current (1)	lcc1	V*=5V (Notel)	6.7	9.7	12.7	mA
Operating Current (2)	Icc2	V ⁺ =9V (Notel)	8.6	12.3	16.0	mA
Voltage Gain	Gv	$V_1 = 100 \text{kHz}, 2 V_{P-P}, V_0 / V_1$	-0.6	-0.1	+0.4	dB
Frequency Gain	GF	$V_1 = 2V_{P-P}, V_0(10MHz)/V_0(100kHz)$	-1.0	0	+1.0	dB
Differential Gain	DG	$V_1 = 2V_{P-P}$, Standerd Staircase Signal		0.3	_	%
Differential Phasa	DP	$V_1 = 2V_{P-P}$, Standerd Staircase Signal	-	0.3	_	deg
OutPut offset Voltage (1)	Vosl	(Note2)	-15	0	+15	mV
OutPut offset Voltage (2)	Vos2	(Note3)	-25	0	+25	mV
Crosstalk	СТ	$V_1 = 2V_{P-P}, 4.43MHz, V_0/V_1$		75		dB
Switch Change Over Voltage	VcH	All inside Switches ON	2.5		—	v
witch Change Over Voltage VCL All inside Switches OFF		-	—	1.0	v	

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

(Note2) S1=S2=S3=S4=S5=1, S8=2, S7=1, $S6=1\rightarrow 2$ Measure the output DC voltage difference

(Note3) S1=S2=S3=S4=S5=1, S8=1, S7=1, $S6=1 \rightarrow 2$ (S6=1, $S7=1 \rightarrow 2$) Measure the output DC voltage difference

TEST CIRCUIT



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

-New Japan Radio Co., Ltd.

5-328

NJM2513

TERMINAL EXPLANATION

PIN NO.	PIN NAME	VOLTAGE	INSIDE EQUIVALENT CIRCUIT
8 9 11	IN 1 A IN 1 B IN 1 C (Input)	$\begin{array}{c} 2.5V\\ \left(\frac{1}{2}V^{*}\right)\end{array}$	IN 0 15k 15k 2.5V 7/7 7/7 15k
16 1	IN 2 A IN 2 B (Input)	$1.5V \\ \left(\frac{3}{10}V^{+}\right)$	
7 12 2	CTL 1 A CTL 1 B CTL 2 (Switching)	· · · · · · · · · · · · · · · · · · ·	2.3V 7/7 7/7 7/7 7/7 7/7 7/7
5	OUT 1 (Output)	$1.8V$ $\left(\frac{1}{2}V^{+}-0.7\right)$	
3	OUT 2 (Output)	$\begin{pmatrix} 0.8V\\ \left(\frac{3}{10}V^{*}-0.7\right) \end{pmatrix}$	
13	V+	5 V	
15 4 10	GND 1 GND 2 GND 3		

-New Japan Radio Co.,Ltd.-

-5-329

5

MEMO

[CAUTION] The specifications on this databook are only given for information , without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.