

## VIDEO SUPER IMPOSER

## ■ GENERAL DESCRIPTION

The NJM2207 is video signal superimposer, with synchronous separation circuit, vertical synchronous reproduce circuit and two video high performance switches for switching from video signal to character signal and background signal.

The NJM2207 is suitable for simply indicating the date time, TV channel and others.

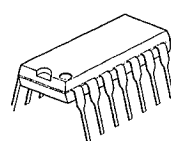
## ■ FEATURES

- Operating Voltage (4.75V~+13V)
- With Synchronous Separation Circuit
- With Vertical Synchronous Reproduce Circuit
- Package Outline DIP-14, DMP-14, ZIP-16
- Bipolar Technology

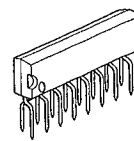
## ■ RECOMMENDED OPERATING CONDITION

- Operating Voltage 4.75~13V

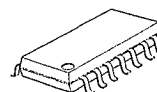
## ■ PACKAGE OUTLINE



NJM2207D



NJM2207S



NJM2207M

## ■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V*	17	V
Power Dissipation	Pd	(ZIP16) 500	mW
		(DIP14) 700	mW
		(DMP14) 300	mW
Operating Temperature Range	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature Range	T <sub>stg</sub>	-40 ~ +125	°C

## ■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V\*=5V)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I <sub>CC</sub>		—	6.5	9	mA

Video Signal Processing Section (Video Input 2V<sub>pp</sub>, Source Resistance=75Ω)

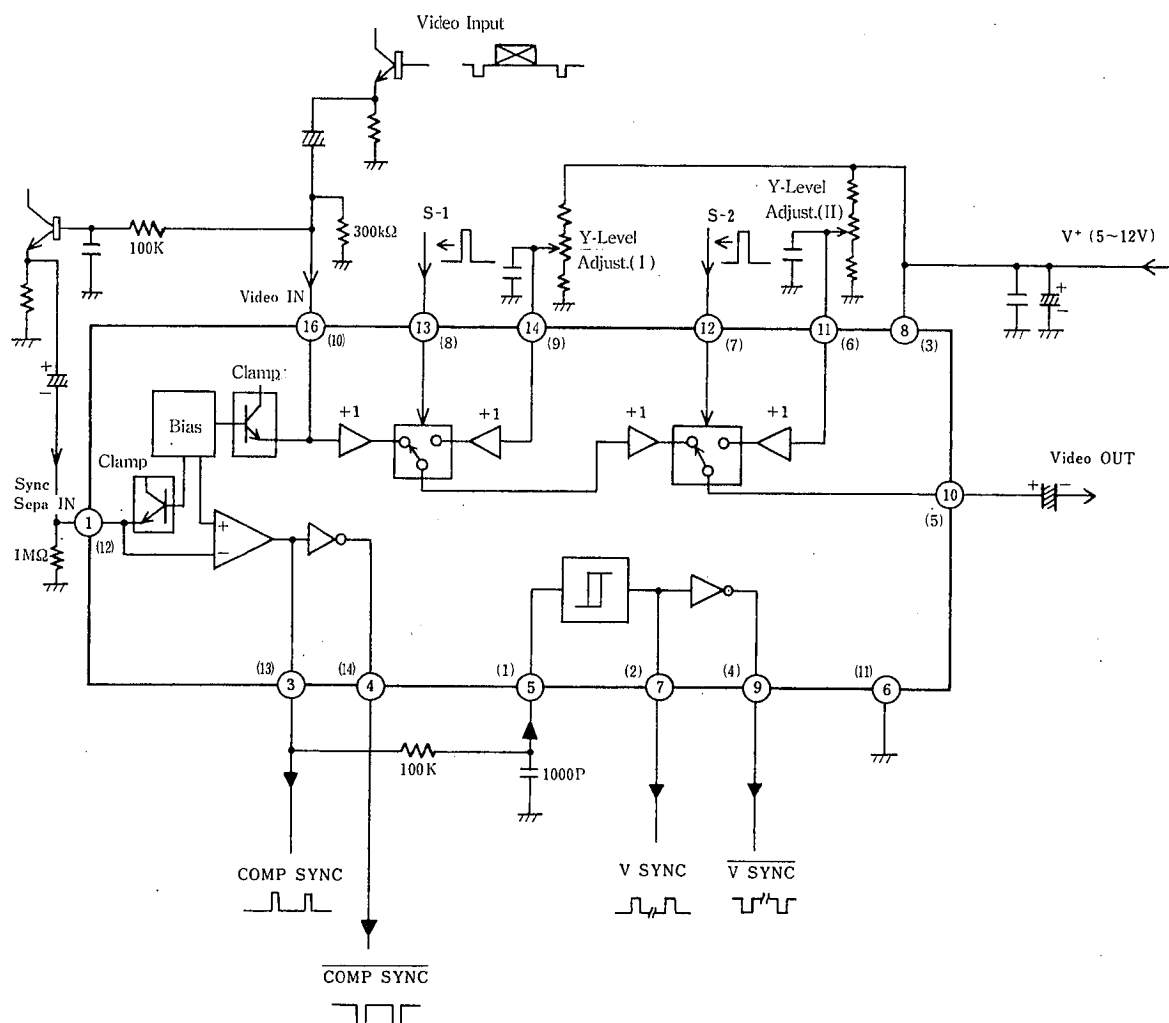
OFF-SET Voltage (Back-ground Input)	V <sub>BOS</sub>	Cross Voltage In Ext. 10kΩ Resistor	—	—	0.1	V
OFF-SET Voltage (Char. Input)	V <sub>COS</sub>	Cross Voltage In Ext. 10kΩ Resistor.	—	—	0.1	V
OFF-Voltage (Background Cont. Input)	V <sub>BL</sub>		—	—	0.4	V
OFF-Voltage (Char. Cont Input)	V <sub>CL</sub>		—	—	0.4	V
ON-Voltage (Background Cont. Input)	V <sub>BH</sub>		2.0	—	—	V
ON-Voltage (Char. Cont. Input)	V <sub>CH</sub>		2.0	—	—	V
Transfer Gain	G <sub>V</sub>	R <sub>L</sub> =5kΩ	-1	—	+1	dB
Frequency Response	G <sub>f</sub>	f=10MHz, R <sub>L</sub> =5kΩ	—	-0.2	—	dB
Crosstalk In Each Signal	C <sub>T</sub>	Video Input (f=3.58MHz)	—	50	—	
		Background Input (f=3.48MHz)				
		Char. Input (f=3.68MHz)				
		Each Signal. is Sine-Wave R <sub>L</sub> =5kΩ				
Video Differential Phase	DP	R <sub>L</sub> =5kΩ	—	—	3	Deg
Video Differential Gain	DG	R <sub>L</sub> =5kΩ	—	—	3	%

(Ta=25°C, V<sup>+</sup>=5V)

\* A version (100mV Typ.)

The diagram shows a 733 IC with various pins connected to input and output signals. Key components include resistors (45Ω, 32Ω, 100k, 5k, 10k, 100k), capacitors (0.01μ, 10μ, 1μ, 2.2μ, 4.7μ), and switches (SWA(1), SWA(2), SWB(1), SWB(2)). The circuit is powered by +8V and -8V supplies. The output section includes a 2.5V reference voltage and a 100k resistor.

## ■ TYPICAL APPLICATION



Note 1: Pin Connection to ZIP-16 (Pin 2, Pin 15: NC). ( ) to DIP-14/DMP-14

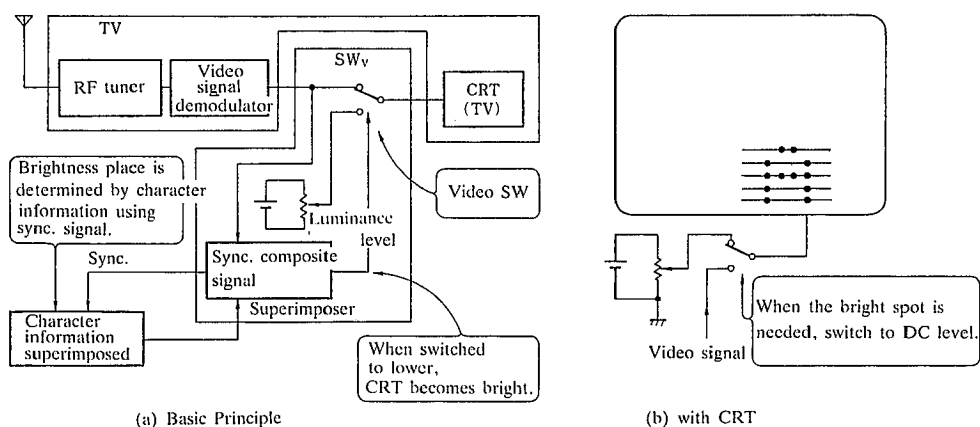
Note 2: Syn. Sepa. Input Threshold voltage increases 40mV (typ.) when putting 1M $\Omega$  in to Pin 1 (Pin 12).

## ■ PRINCIPLE OF CHARACTER SUPERIMPOSER

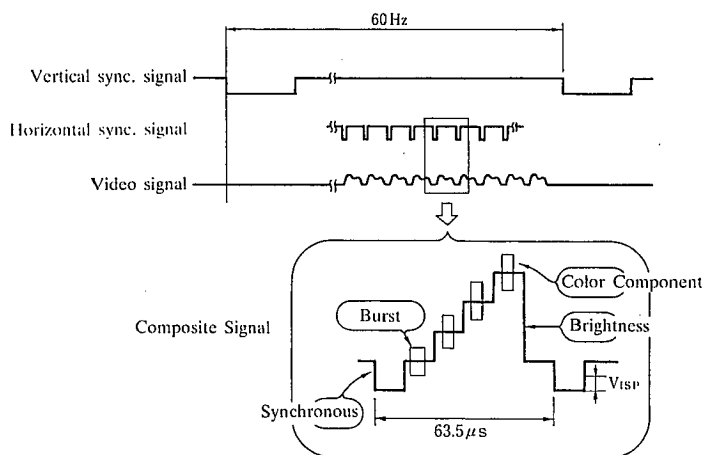
Basic principle is shown at Fig. 1.

Usual TV has video (composite) signal output and input terminals to connect VCR or others. There is all information about picture on video composite signal (Ref. to Fig. 2). Its time signal of horizontal and vertical synchronous signal indicates the brighten place of TV tube. For brightening TV tube regardless video signal, the video input signal has to be switched to DC level (luminance level) on that scanning time. On this method, character is shown with background of usual picture.

**Fig.1 Principle of Character Superimposer**



**Fig.2 Composite Video Signal**



## ■ CIRCUIT CONFIGURATION

Date superimposer circuit configuration on TV is shown at Fig. 3. The NJM2207 includes video switches which convert, usual video signal (horizontal and vertical synchronous signal, video) to signal, of superimposed character given by character generator.

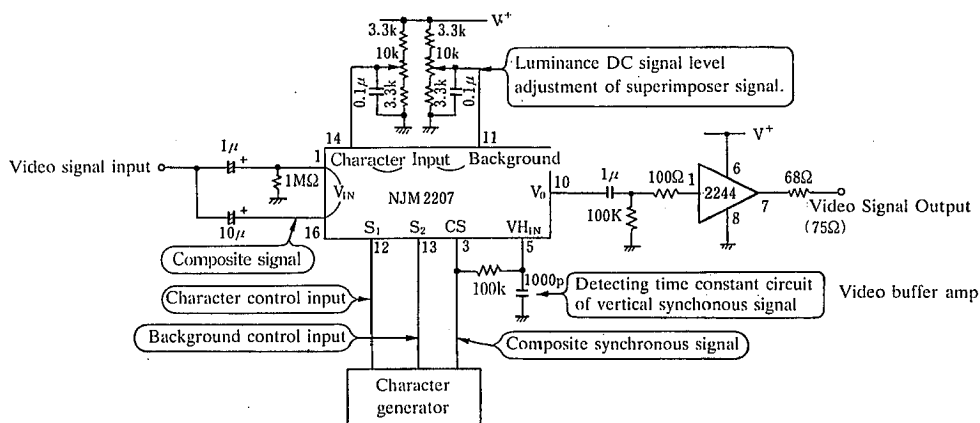


Fig.3 Typical circuit of date superimposer

## 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.