

# HA11508

T-77-07-07

## Audio-Video Switch

HA11508 is an input signal switching IC designed for use in color televisions with external input terminals.

HA11508 provides switching operations for three video input circuits, three 2-channel audio circuits, and two output circuits.

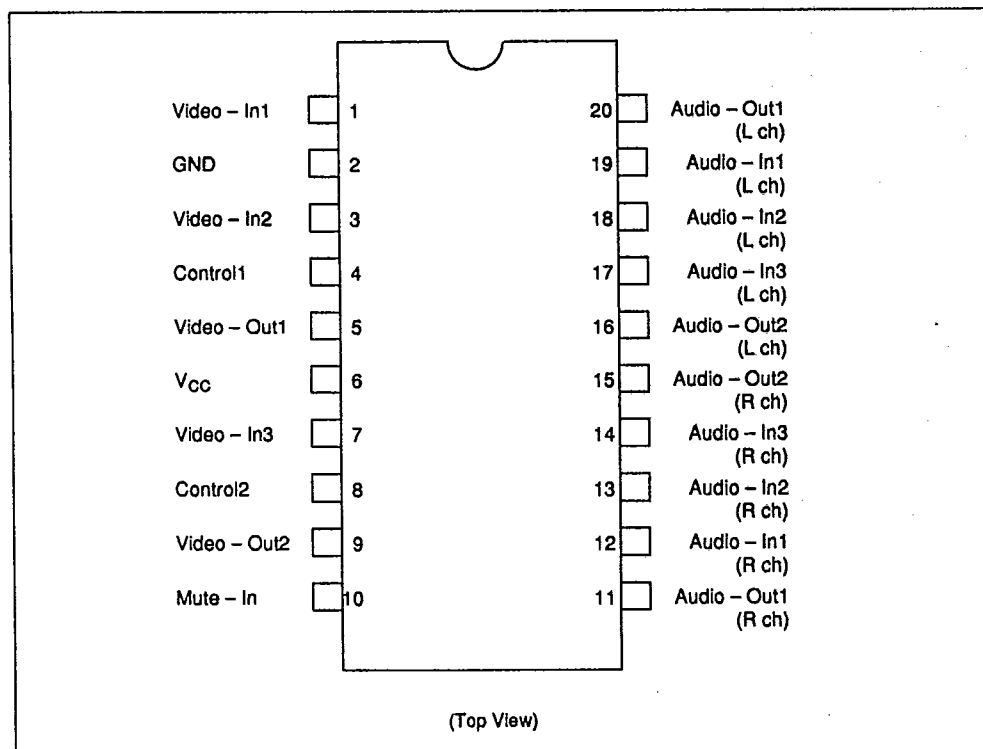
### Functions

- Video signal switching
- Audio signal switching
- Audio mute function

### Features

- Signal switching for three video input circuits, three 2-channel audio input circuits, and two output circuits.
- Approximately 6dB on-chip amp in video switching section
- On-chip audio mute circuit
- High input impedance
- Wide frequency band
- High supply
- Can be used with 8 to 13.2 V supply voltages

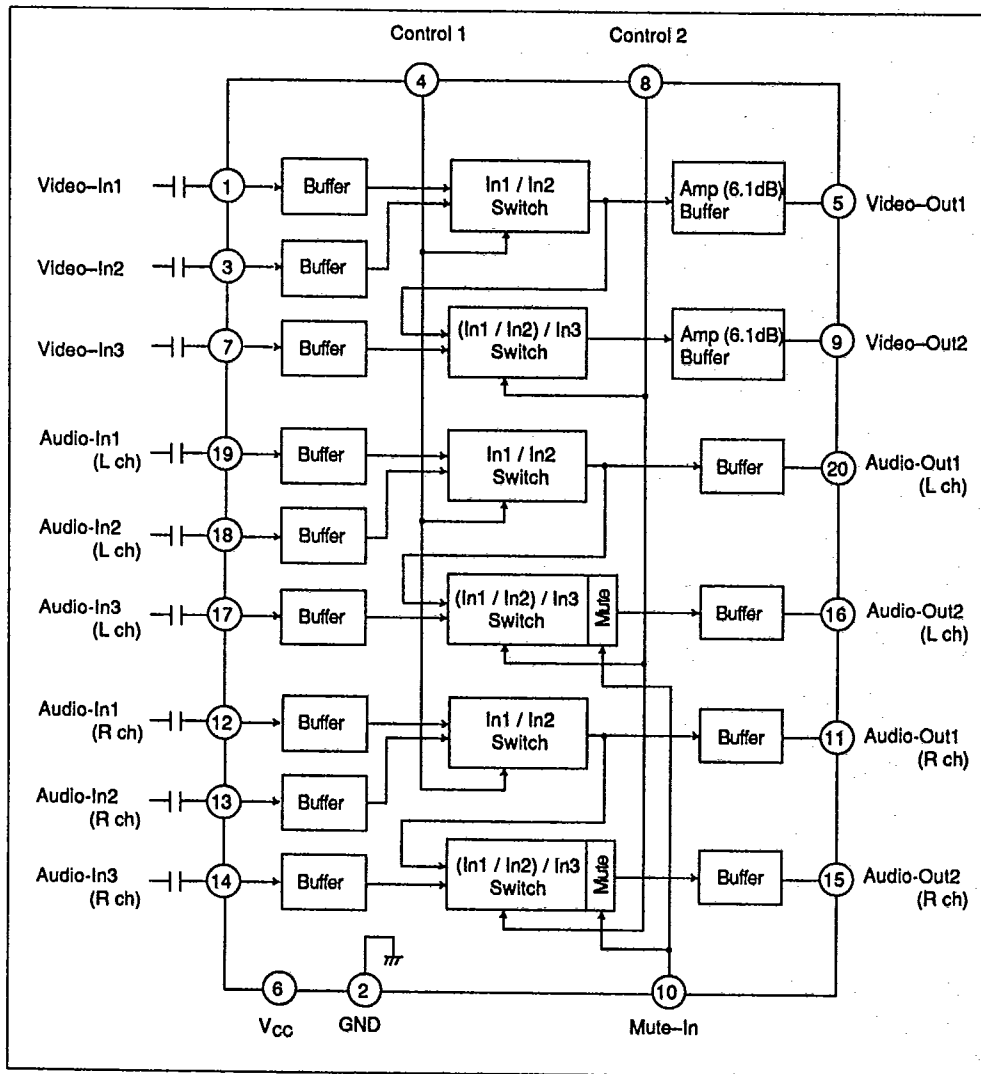
### Pin Arrangement



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Block Diagram



**HA11508**

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**Absolute Maximum Ratings**

Item	Symbol	HA11508	Unit
Supply Voltage	$V_{cc}$	14.4	V
Power Dissipation	$P_T$	550	mW
Operating Temperature	$T_{opr}$	-20 to +70	°C
Storage Temperature	$T_{stg}$	-55 to +125	°C
Control Terminal voltage		14.4	V

Note: Recommended supply voltage range: 8 to 13.2 V

**Ordering Information**

Type No.	Package
HA11508	DP-20



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**Electrical Characteristics (Ta = 25°C)**

(V<sub>CC</sub> = 12V unless otherwise specified)

Item		Symbol	Min	Typ	Max	Unit	Test Condition
Supply Current		I <sub>cc</sub>	18.0	22.5	30.0	mA	
Voltage Gain	Video	G <sub>VV</sub>	5.6	6.1	6.6	dB	V <sub>inV</sub> = 1V <sub>p-p</sub> (sine wave) f = 0.1MHz
	Audio	G <sub>Va</sub>	-0.2	-0.02	0	dB	f = 0.1kHz V <sub>inA</sub> = 500mVrms
Frequency Band	Video	B <sub>VV</sub>	10	-	-	MHz	V <sub>inV</sub> = 0.7V <sub>p-p</sub> (sine wave) -3dB bandwidth for 0.1MHz
	Audio	B <sub>Va</sub>	100	-	-	kHz	-1dB bandwidth for f = 1kHz gain V <sub>inA</sub> = 500mVrms
Total Harmonic Distortion		THD	-	0.005	0.2	%	f = 1kHz V <sub>inA</sub> = 500mVrms
Output Noise Voltage	Video	V <sub>nv</sub>	-	0.3	-	mVrms	R <sub>g</sub> = 75Ω Bandwidth = 10MHz
	Audio	V <sub>na</sub>	-	10	-	mVrms	R <sub>g</sub> = 600Ω Bandwidth = 20 to 20kHz
Output DC Offset Voltage	Video	ΔV <sub>odv</sub>	-50	0	50	mV	
	Audio output 1	ΔV <sub>odv1</sub>	-20	0	20	mV	
	Audio output 2	ΔV <sub>odv2</sub>	-40	0	40	mV	
Audio L-to-R Voltage Gain Difference		G <sub>Va1</sub>	-0.2	0	0.2	dB	f = 1kHz V <sub>inA</sub> = 500mVrms
	Video	C <sub>TV</sub>	-	50	-	dB	R <sub>g</sub> = 75Ω f = 3.58MHz
Crosstalk	Audio 1-to-2	C <sub>1a</sub>	-	90	-	dB	R <sub>g</sub> = 4.7kΩ f = 1kHz V <sub>inA</sub> = 500mVrms
	Audio L-to-R	C <sub>1as</sub>	-	82	-	dB	Same as above
Mute Residual Sound		V <sub>oam</sub>	-	0.02	0.1	mVrms	f = 1kHz V <sub>inA</sub> = 500mVrms
Mute Operation Output DC Offset Voltage		ΔV <sub>cam</sub>	-	0	40	mVrms	Audio output 2 offset voltage
Input Signal Amplitude(Video input)		V <sub>inV</sub>	-	1.0	-	V <sub>p-p</sub>	From sync peak until 100% white
Switching Control Input Threshold Voltage		V <sub>th</sub>	1.1	1.4	1.7	V	
Mute Input H Threshold Voltage		V <sub>thm</sub>	1.1	1.4	1.7	V	



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Switch Table

The following table shows the relationships between the IC signal input in accordance with switching control input 1 and 2, and the mute input control signal.

No.	Switching control input			Video signal output		Audio signal output*1	
	Mute	1	2	Output 1	Output 2	Output 1	Output 2
1	L	L	L	Input 1	Input 1	Input 1	Input 1
2	L	L	H	Input 1	Input 3	Input 1	Input 3
3	L	H	L	Input 2	Input 2	Input 2	Input 2
4	L	H	H	Input 2	Input 3	Input 2	Input 3
5	H	L	L	Input 1	Input 1	Input 1	-
6	H	L	H	Input 1	Input 3	Input 1	-
7	H	H	L	Input 2	Input 2	Input 2	-
8	H	H	H	Input 2	Input 3	Input 2	-

\*1 Audio signal output is identical for L and R.

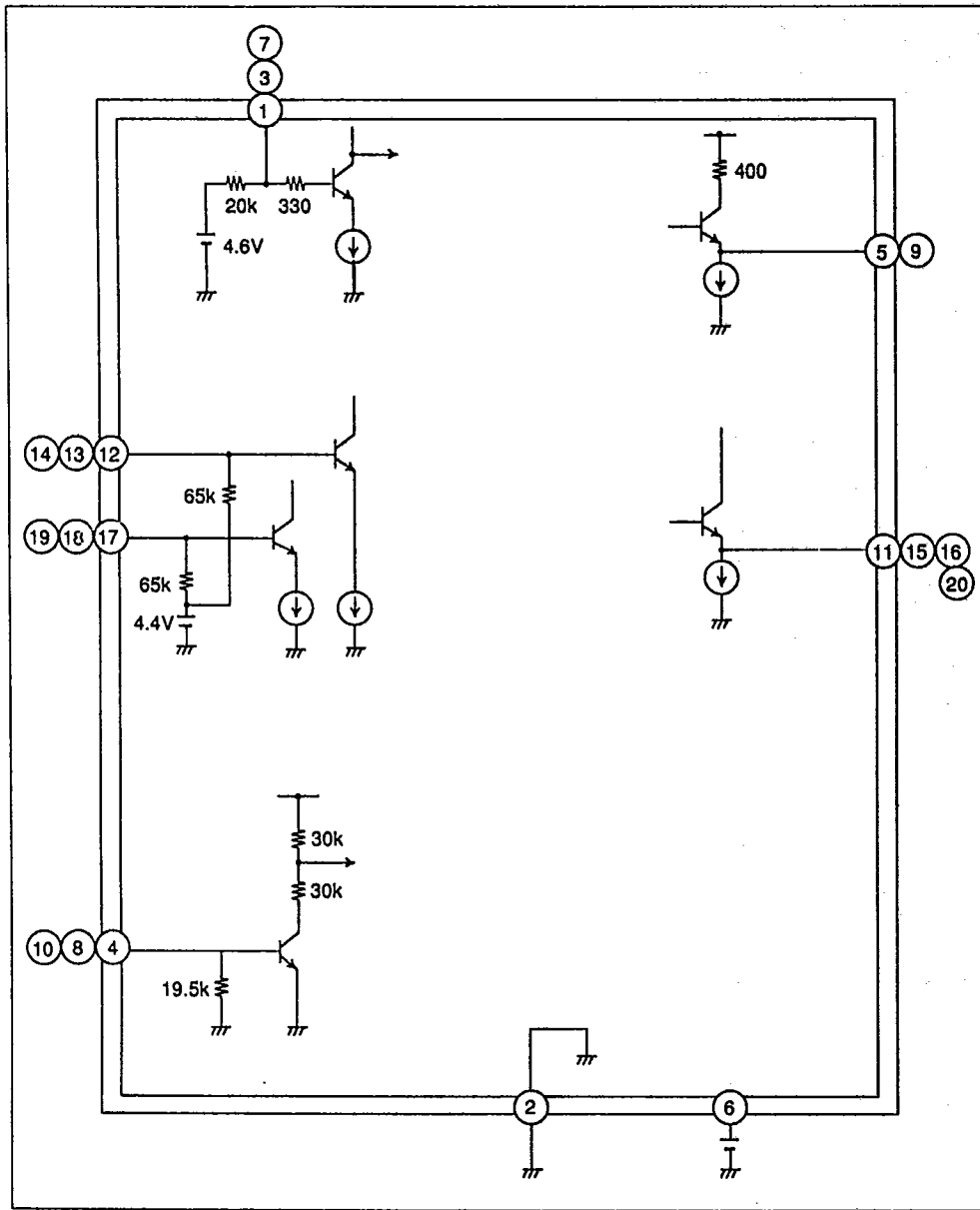
As the table shows, output 1 can be switched by control 1 only, and mute input is related to audio output 2 only.



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**Input/Output Interface**



Circuit Example

