

# GL3812

## AUDIO/VIDEO SWITCH FOR TV, VCR

### Functions

- Audio Signal Switching
- Video Signal Switching
- Input Signal Selecting Logic

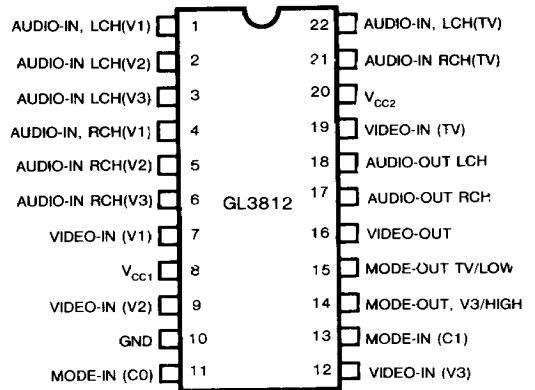
### Features

- Possible to Switch 4 Channel Video Signals
- Possible to Switch 4 Channel L & R Audio Signals

### Absolute Maximum Ratings (T<sub>A</sub> = 25°C)

Supply Voltage	V <sub>CC1</sub>	15V
	V <sub>CC2</sub>	
Power Dissipation	P <sub>D</sub>	310mW
Operating Temperature	T <sub>OPR</sub>	-20 to +70°C
Storage Temperature	T <sub>STG</sub>	-55 to +125°C

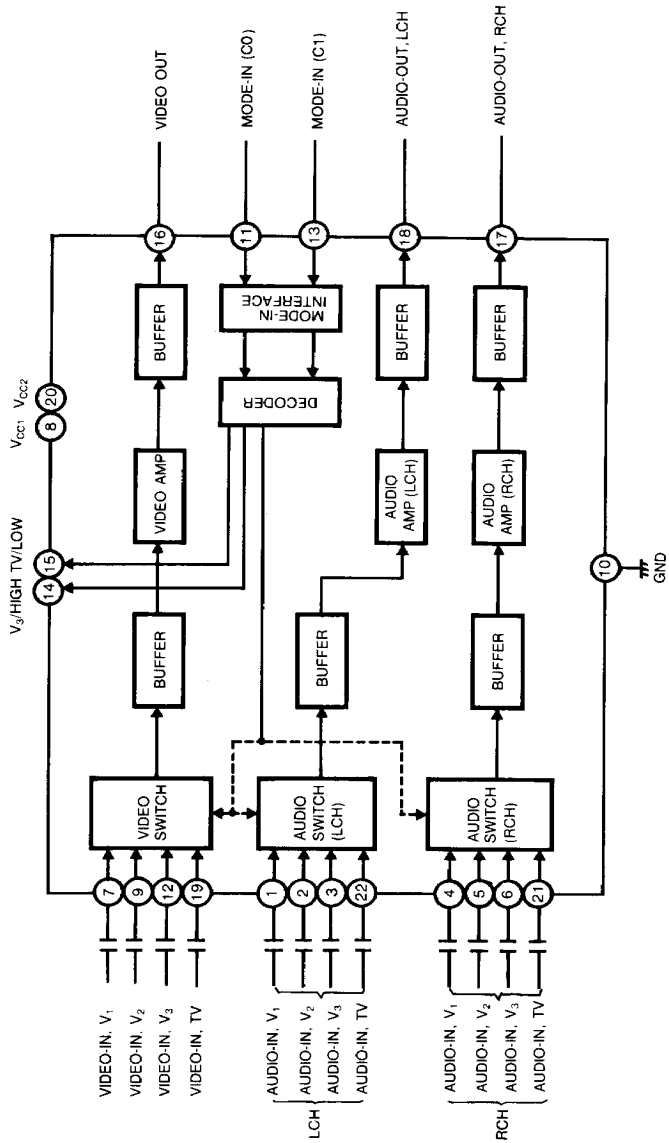
### Pin Configuration



### Mode Selection Logic/Output Signal

C1	C0	PIN 14	PIN 15	PIN 16	PIN 17	PIN 18
L	L	L	L	VIDEO (TV)	AUDIO RCH(TV)	AUDIO LCH(TV)
L	H	L	H	VIDEO (V <sub>1</sub> )	AUDIO RCH(V <sub>1</sub> )	AUDIO LCH(V <sub>1</sub> )
H	L	L	H	VIDEO (V <sub>2</sub> )	AUDIO RCH(V <sub>2</sub> )	AUDIO LCH(V <sub>2</sub> )
H	H	H	H	VIDEO (V <sub>3</sub> )	AUDIO RCH(V <sub>3</sub> )	AUDIO LCH(V <sub>2</sub> )

Block Diagram



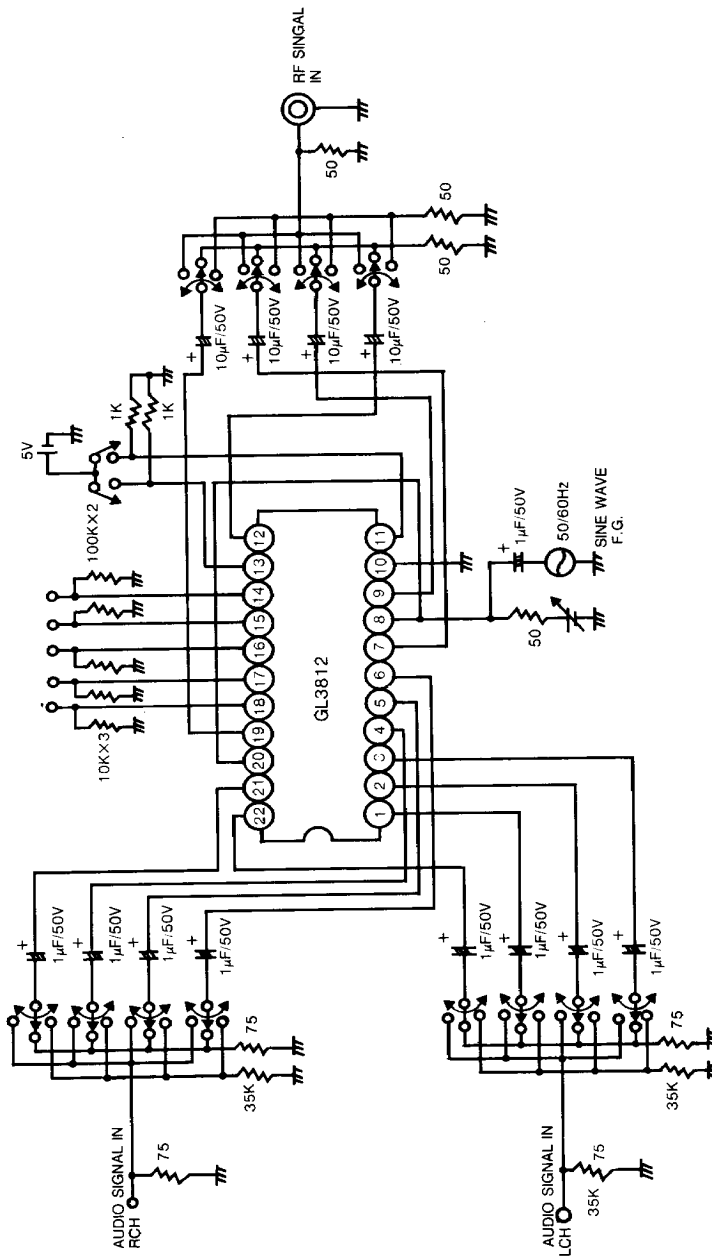
Electrical Characteristics:  $T_A=25^\circ\text{C}$ ,  $V_{CC}=12\text{V}$

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Current Dissipation	$I_{CC1,2}$	$V_{CC1}=V_{CC2}=12\text{V}$	10	15	20	mA
Video Channel Bandwidth	$F_V$	-3dB Frequency	5	10	—	MHz
Video Signal Voltage Gain	$A_V$	$f=500\text{ kHz}$ , $V_{IN}=1V_{p-p}$	5.0	6.0	7.0	dB
Video Signal Input Dynamic Range	$D_V$	$f=500\text{ kHz}$ , THD<1%	1.7	2.0	—	$V_{p-p}$
Video Channel PSRR	$PS_V$	$V_{CC1}=12\text{V}+1V_{p-p}$ Sine wave (50Hz/60Hz)	15	20	—	dB
Video Channel Input Impedance	$R_{IV}$		10	15	20	$K\Omega$
Video Channel Output Impedance	$R_{OV}$		—	200	—	$\Omega$
Video Channel Crosstalk	$CT_V$	$f=3.58\text{ MHz}$ , $V_{IN}=1V_{p-p}$	40	50	—	dB
Video Channel S/N	$SN_V$	$V_{out}=2V_{p-p}$	50	60	—	dB
Audio Channel Bandwidth	$F_A$	-3dB frequency	100	—	—	kHz
Audio Signal Voltage Gain	$A_a$	$f=1\text{ kHz}$ , $V_{IN}=0.5V_{p-p}$	10	12	14	dB
Audio Signal Input Dynamic Range	$D_a$	$f=1\text{ kHz}$ THD < 1%	0.7	1.0	—	$V_{p-p}$
Audio Channel PSRR	$PS_a$	$V_{CC2}=12\text{V}+1V_{p-p}$ Sine wave (50Hz/60Hz)	15	20	—	dB
Audio Channel Input Impedance	$R_{ia}$		10	15	20	$K\Omega$
Audio Channel Output Impedance	$R_{oa}$		—	200	—	$\Omega$
Audio Channel Crosstalk	$CT_a$	$f=1\text{ kHz}$	50	60	—	dB
Audio Channel S/N	$SN_a$	$V_{OUT}=2V_{p-p}$	60	70	—	dB
Audio Signal THD	$THD_a$	$f=1\text{ kHz}$ , $V_{OUT}=2V_{p-p}$	—	0.5	1.5	%
Input Mode Selection Threshold Voltage	$V_{MTH}$		2.0	2.3	2.6	V
PIN14 ( $V_3/H$ ) Low Level Voltage	$V_L, v_3$	TV or $V_1$ or $V_2$ 1 mode selection	—	—	0.5	V
PIN 14 ( $V_3/H$ ) High Level Voltage	$V_H, v_3$	$V_3$ mode selection	10	—	—	V
PIN 15 (TV/L) Low Level Voltage	$V_L, TV$	TV mode selection	—	—	0.5	V
PIN 15 (TV/L) High Level Voltage	$V_H, TV$	$V_1$ or $V_2$ or $V_3$ 1 mode selection	10	—	—	V

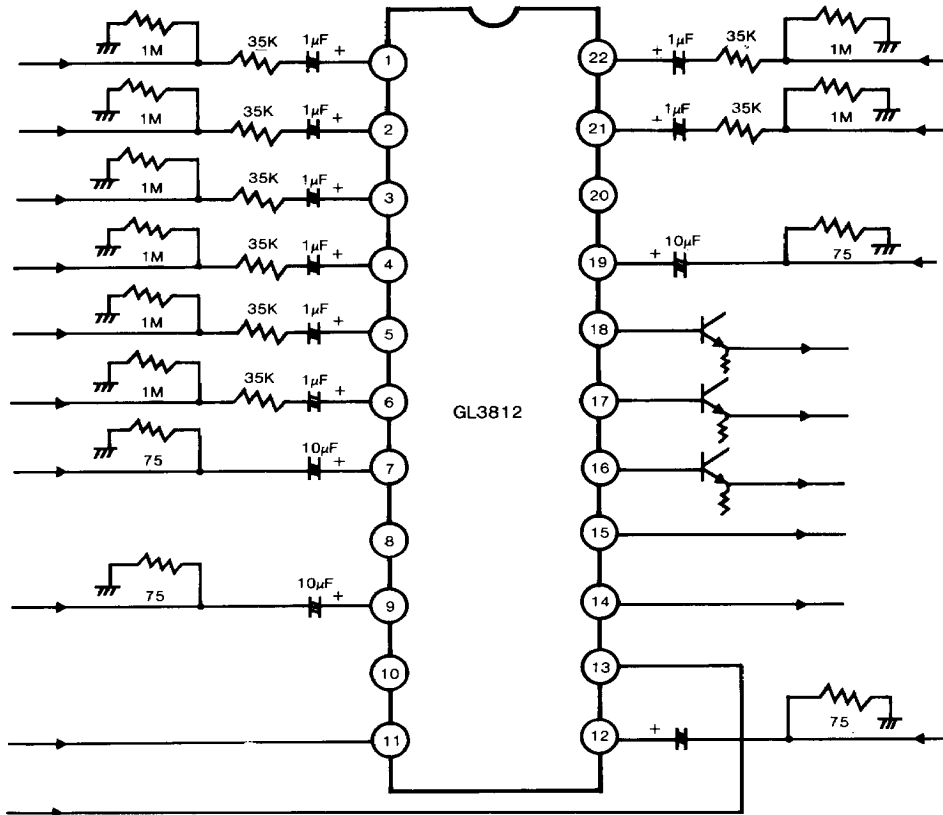
**Pin Description**

No.	Name	Explanation	No.	Name	Explanation
1	AUDIO-IN (L <sub>1</sub> )	Input of L-Ch Audio Signal for Video (V <sub>1</sub> ).	13	MODE-IN (C1)	Input for Mode Selection.
2	AUDIO-IN (L <sub>2</sub> )	Input of L-Ch Audio Signal for Video (V <sub>2</sub> ).	14	MODE-OUT (V <sub>3</sub> /H)	Output Voltage of this Pin Becomes High State, Only when V <sub>3</sub> is Selected. Else Low State.
3	AUDIO-IN (L <sub>3</sub> )	Input of L-Ch Audio Signal for Video (V <sub>3</sub> ).	15	MODE-OUT (TV/L)	Output Voltage of this Pin Becomes Low State, Only when TV is Selected. Else High State.
4	AUDIO-IN (R <sub>1</sub> )	Input of R-Ch Audio Signal for Video (V <sub>1</sub> ).	16	VIDEO-OUT	Output of Selected Video Signal.
5	AUDIO-IN (R <sub>2</sub> )	Input of R-Ch Audio Signal for Video (V <sub>2</sub> ).	17	AUDIO - OUT (R)	Output of Selected R-CH Audio Signal.
6	AUDIO-IN (R <sub>3</sub> )	Input of R-Ch Audio Signal for Video (V <sub>3</sub> ).	18	AUDIO-OUT (L)	Output of Selected L-CH Audio Signal.
7	VIDEO-IN (V <sub>1</sub> )	Input of V Video Signal.	19	VIDEO-IN (TV)	Input of TV Video Signal.
8	V <sub>CC1</sub>	Power Supply for Video and Logic Block.	20	V <sub>CC2</sub>	Power Supply for Audio Block.
9	VIDEO-IN (V <sub>2</sub> )	Input of V Video Signal.	21	AUDIO-IN (R-TV)	Input of R-CH Audio Signal for Video (TV).
10	GND		22	AUDIO-IN (L-TV)	Input of L-CH Audio Signal for Video (TV).
11	MODE-IN (C0)	Input for Mode Selection.			
12	VIDEO-IN (V <sub>3</sub> )	Input of V Video Signal.			

Test Circuit



Application Circuit



- \* In case of not using Pin 14 or 15, Connect to Ground.
- In case of not using pin 11, Connect to  $V_{CC}$ .
- In case of not using pin 13, Connect to Ground.