

# GL3812

## AUDIO/VIDEO SWITCH FOR TV, VCR

### Functions

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

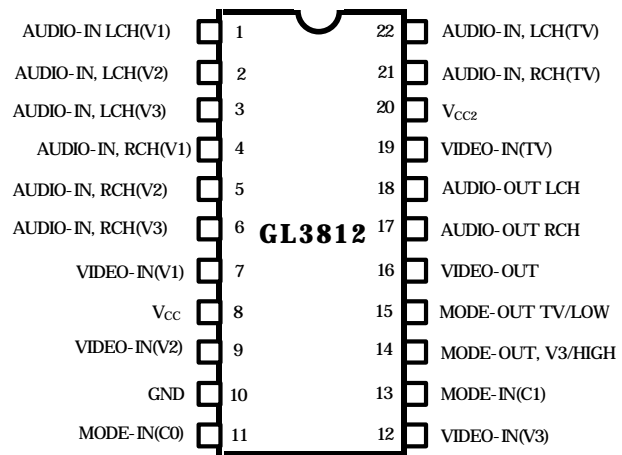
### Features

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

### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ )

Supply Voltage	$V_{CC1}$	15V
	$V_{CC2}$	
Power Dissipation	$P_D$	310mW
Operating Temperature	$T_{OPR}$	-20 to +70°C
Storage Temperature	$T_{STG}$	-55 to +125°C

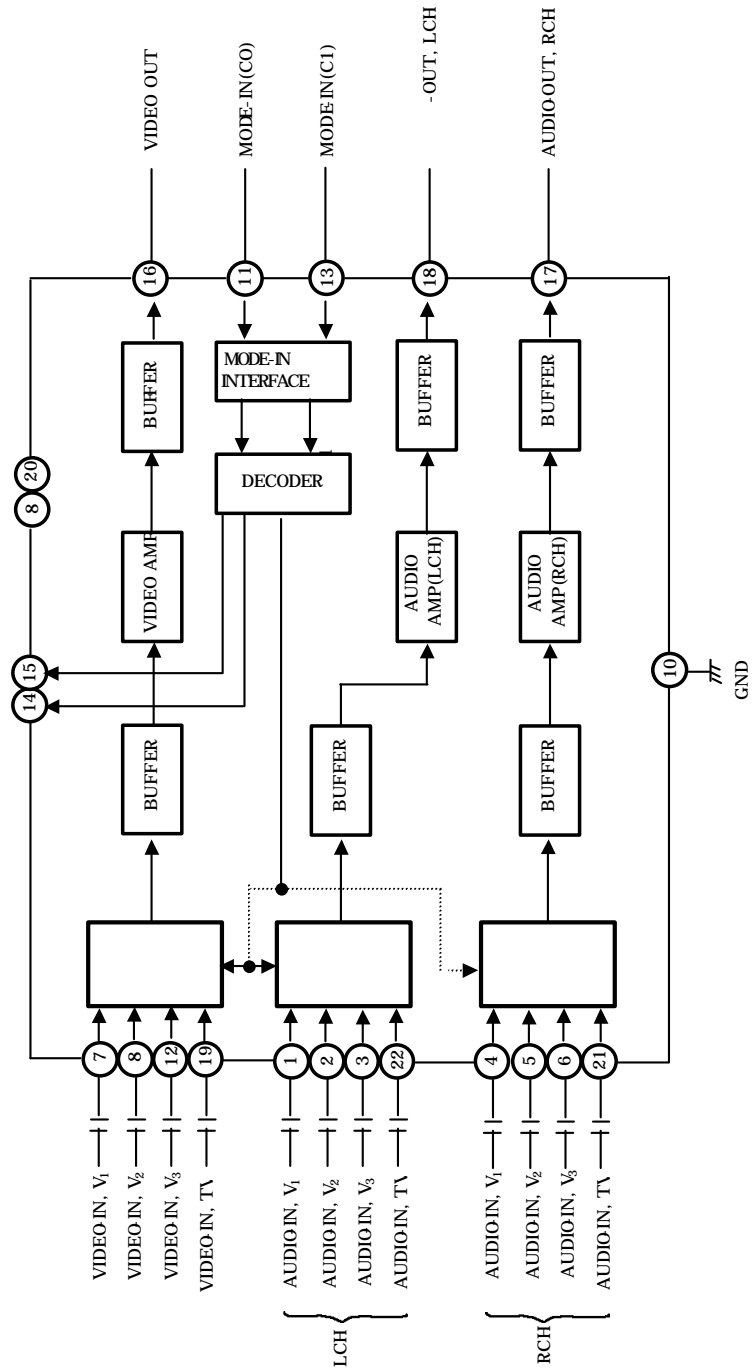
### Pin Configuration



### Mode Selection Logic/Output Signal

CI	CO	PIN 14	PIN15	PIN16	PIN17	PIN18
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>3</sub> )

Block Diagram



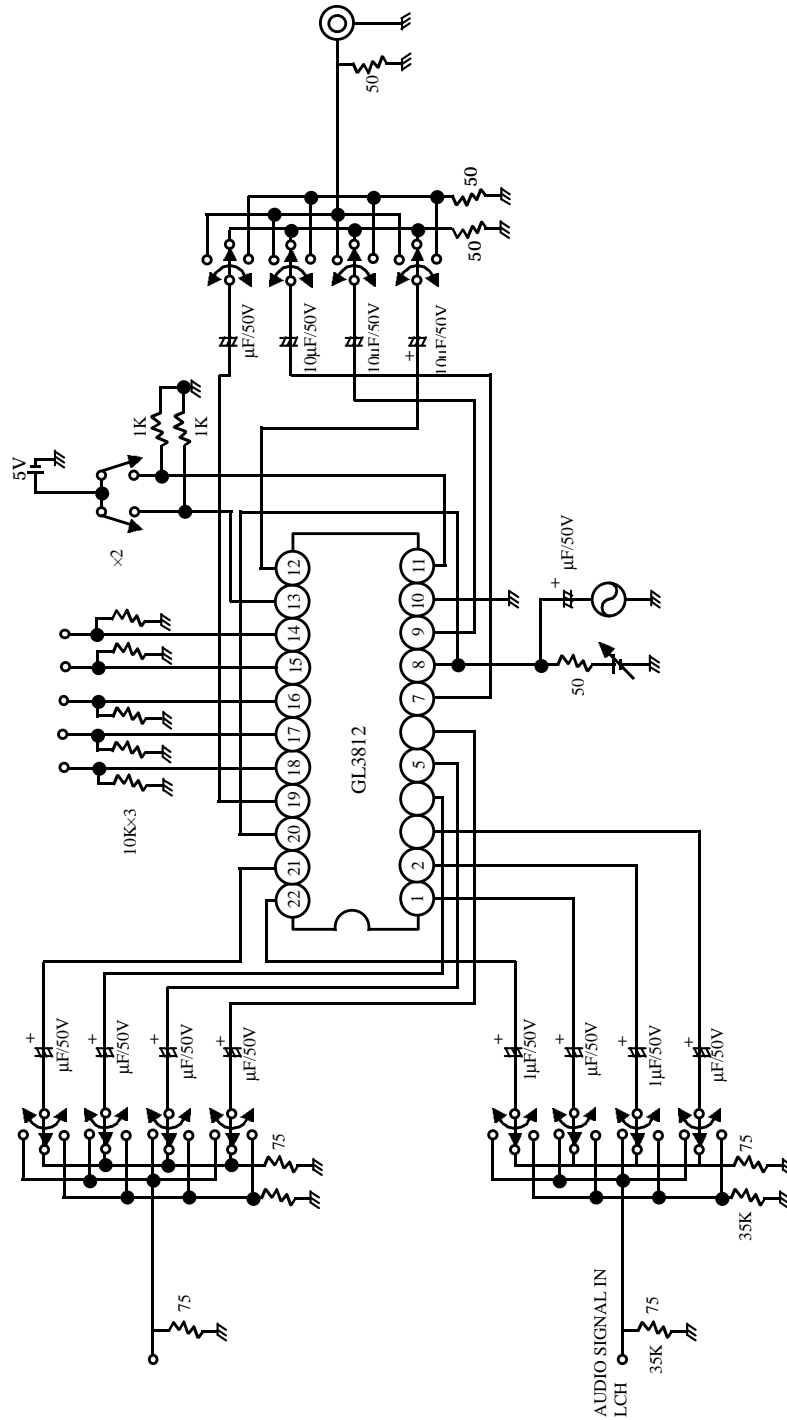
**Electrical Characteristics:**  $T_A = 25^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$ 

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
PIN 14 ( $V_3$ /H) Low Level Voltage	$V_{L,V3}$	TV or $V_1$ or $V_2$ I mode selection	—	—	0.5	V
PIN 14 ( $V_3$ /H) High Level Voltage	$V_{H,V3}$	$V_3$ 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 $V_3$ I mode selection	10	—	—	V

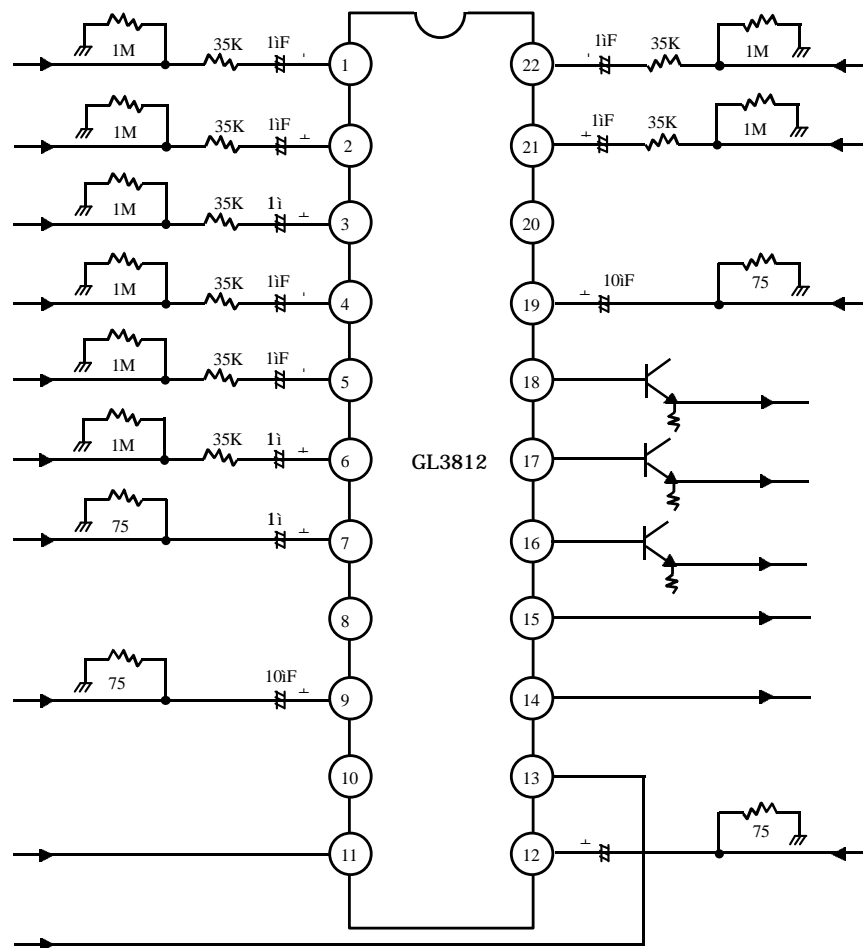
## Pin Description

No.	Name	Explanation	No.	Name	Explanation
1	AUDIO-IN ( $L_1$ )	Input of L-Ch Audio Signal for Video ( $V_1$ ).	13	MODE-IN (C1)	Input for Mode Selection
2	AUDIO-IN ( $L_2$ )	Input of L-Ch Audio Signal for Video ( $V_2$ ).	14	MODE-OUT ( $V_3$ /H)	Output Voltage of this Pin Becomes High State, Only when $V_3$ is Selected Else Low State
3	AUDIO-IN ( $L_3$ )	Input of L-Ch Audio Signal for Video ( $V_3$ ).	15	MODE-OUT (TV/L)	Output Voltage of this Pin Becomes Low State, Only when TV is selected. Else High State.
4	AUDIO-IN ( $R_1$ )	Input of R-Ch Audio Signal for Video ( $V_1$ ).	16	VIDEO-OUT	Output of Selected Video Signal
5	AUDIO-IN ( $R_2$ )	Input of R-Ch Audio Signal for Video ( $V_2$ ).	17	AUDIO-OUT(R)	Output of Selected R-CH Audio Signal
6	AUDIO-IN ( $R_3$ )	Input of R-Ch Audio Signal for Video ( $V_3$ ).	18	AUDIO-OUT (L)	Output of Selected L-CH Audio Signal
7	VIDEO-IN ( $V_1$ )	Input of V Video Signal.	19	VIDEO-IN (TV)	Input of TV Video Signal
8	$V_{CC1}$	Power Supply for Video and Logic Block.	20	$V_{CC2}$	Power Supply for Audio Block
9	VIDEO-IN ( $V_2$ )	Input of 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 ( $V_3$ )	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<sub>CC</sub>.  
 In case of not using Pin 13, Connect to Ground.