

GL3812

AUDIO/VIDEO SWITCH FOR TV, VCR

Functions

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

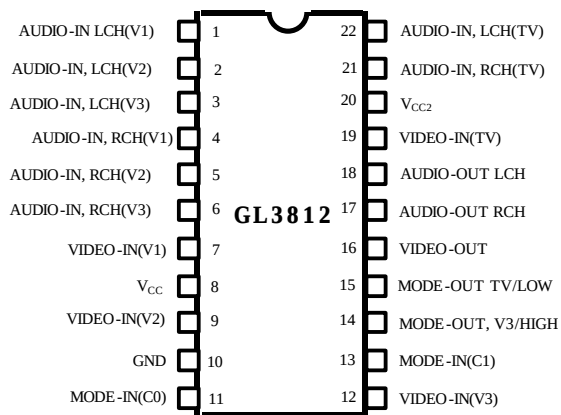
Features

- 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

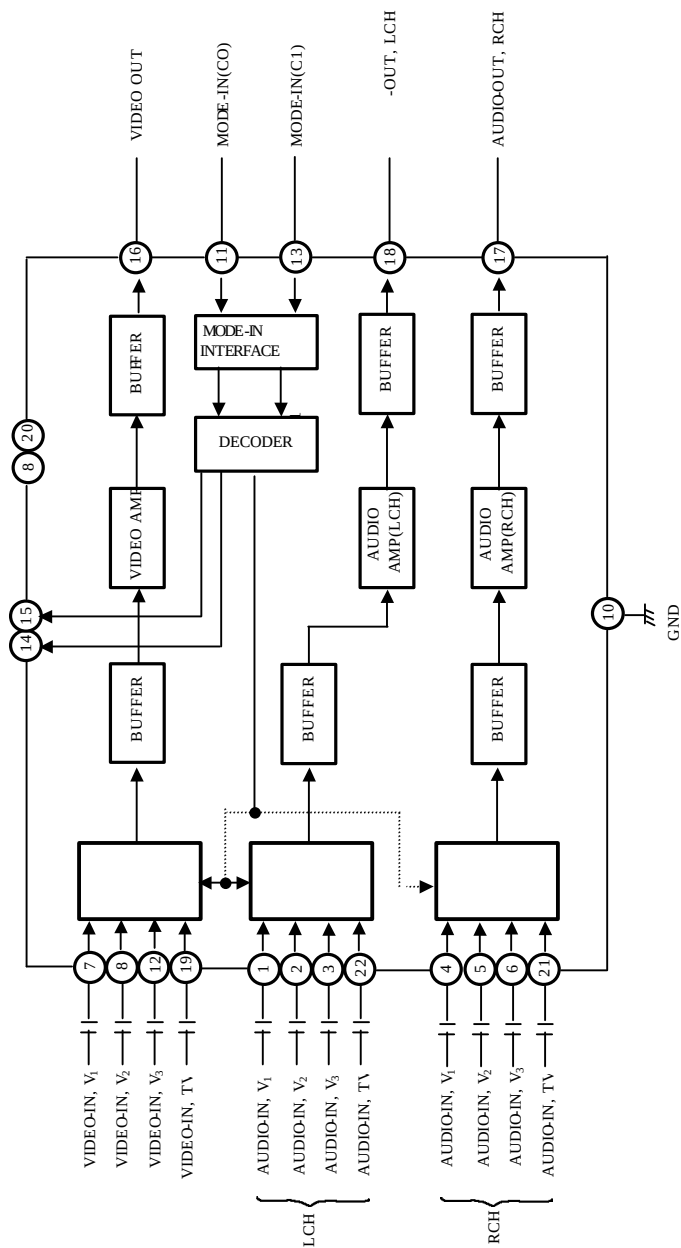
Pin Configuration



Mode Selection Logic/Output Signal

C1	C0	PIN 14	PIN15	PIN16	PIN17	PIN18
L	L	L	L	VIDEO(TV)	AUDIO RCH(TV)	AUDIO LCH(TV)
L	H	L	H	VIDEO (V ₁)	AUDIO RCH(V ₁)	AUDIO LCH(V ₁)
H	L	L	H	VIDEO (V ₂)	AUDIO RCH(V ₂)	AUDIO LCH(V ₂)
H	H	H	H	VIDEO(V ₃)	AUDIO RCH(V ₃)	AUDIO LCH(V ₃)

Block Diagram



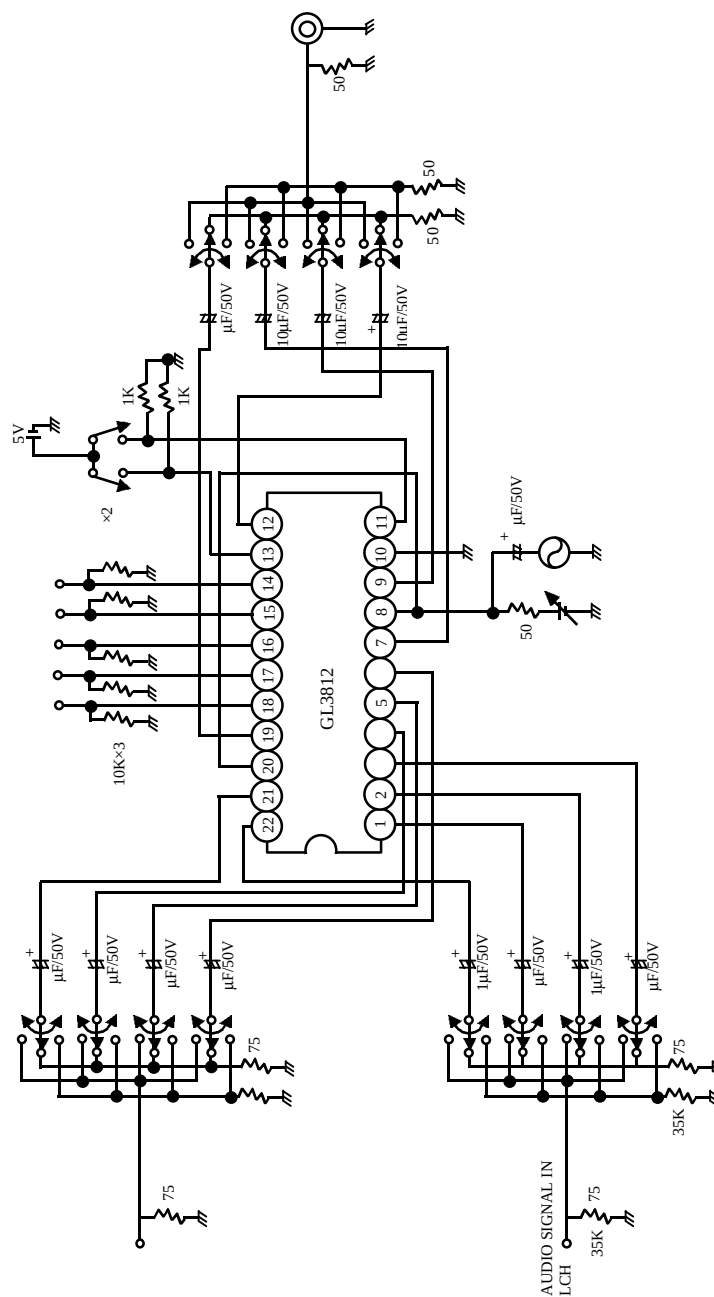
Electrical Characteristics: $T_A = 25^\circ\text{C}$, $V_{CC} = 12\text{V}$

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 Ω
Video Channel Output Impedance	R_{OV}		—	200	—	Ω
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 Ω
Audio Channel Output Impedance	R_{oa}		—	200	—	Ω
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, 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

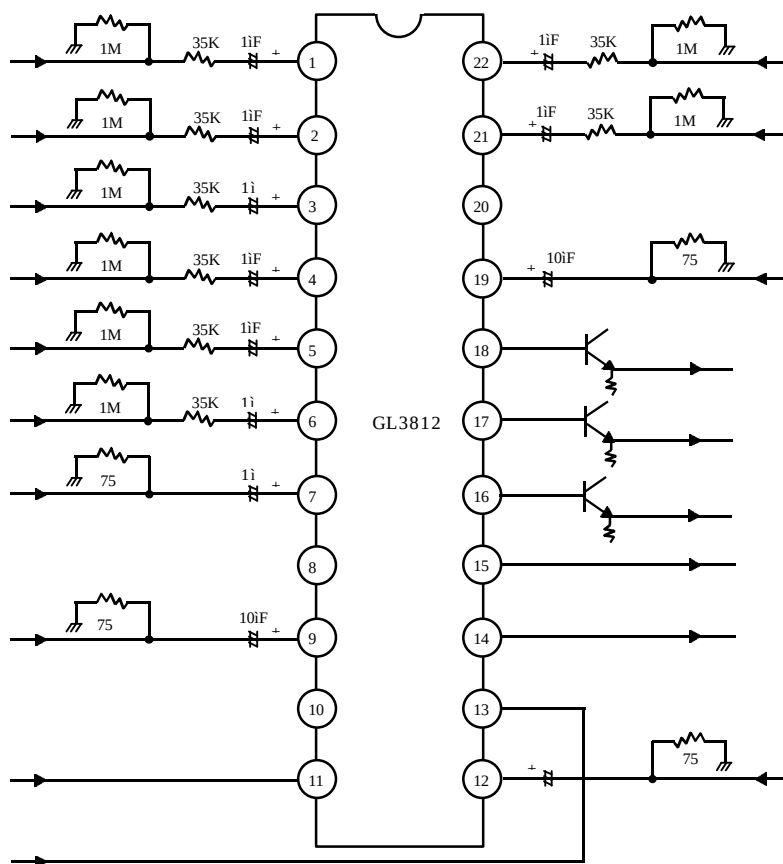
Pin Description

No.	Name	Explanation	No.	Name	Explanation
1	AUDIO-IN (L_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_{CC} .
 In case of not using Pin 13, Connect to Ground.