GL3812

AUDIO/VIDEO SWITCH FOR TV, VCR

Functions

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

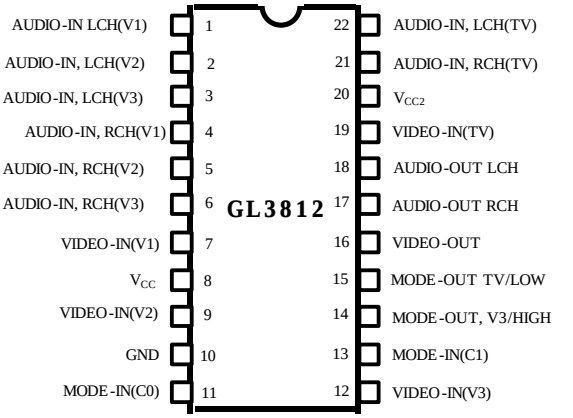
Features

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

Absolute Maximum Ratings ($T_A = 25°C$)

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

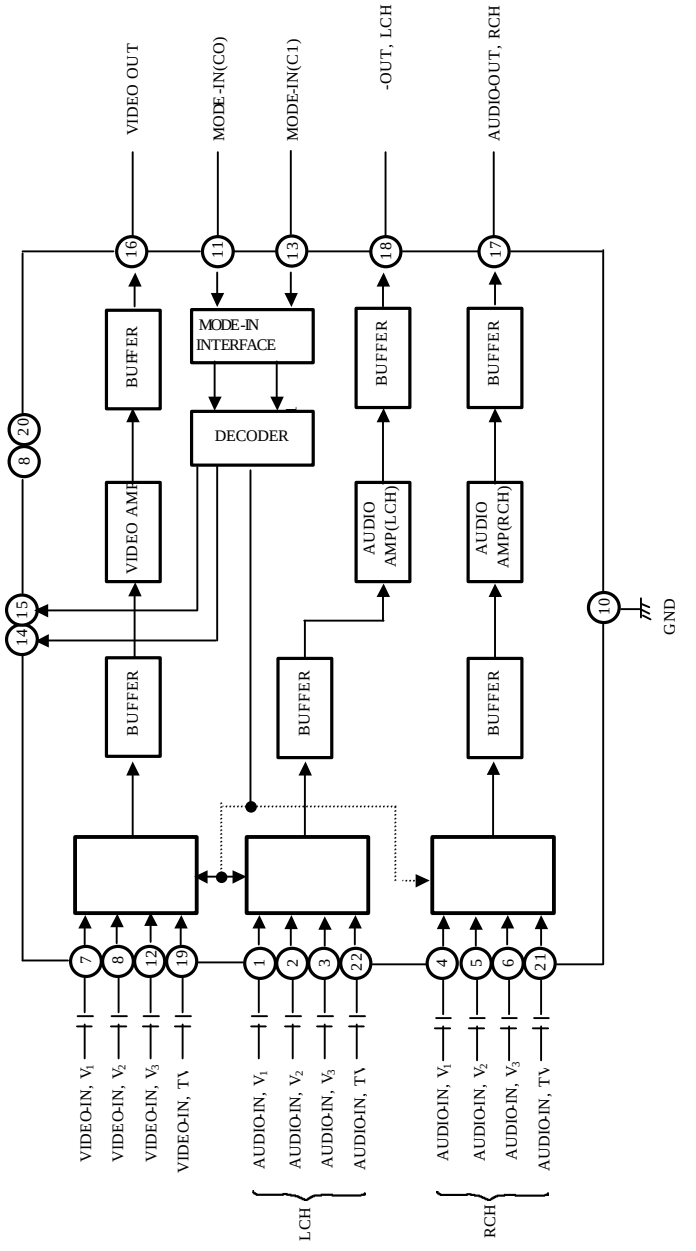
Pin Configuration



Mode Selection Logic/Output Signal

C1	C0	PIN14	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



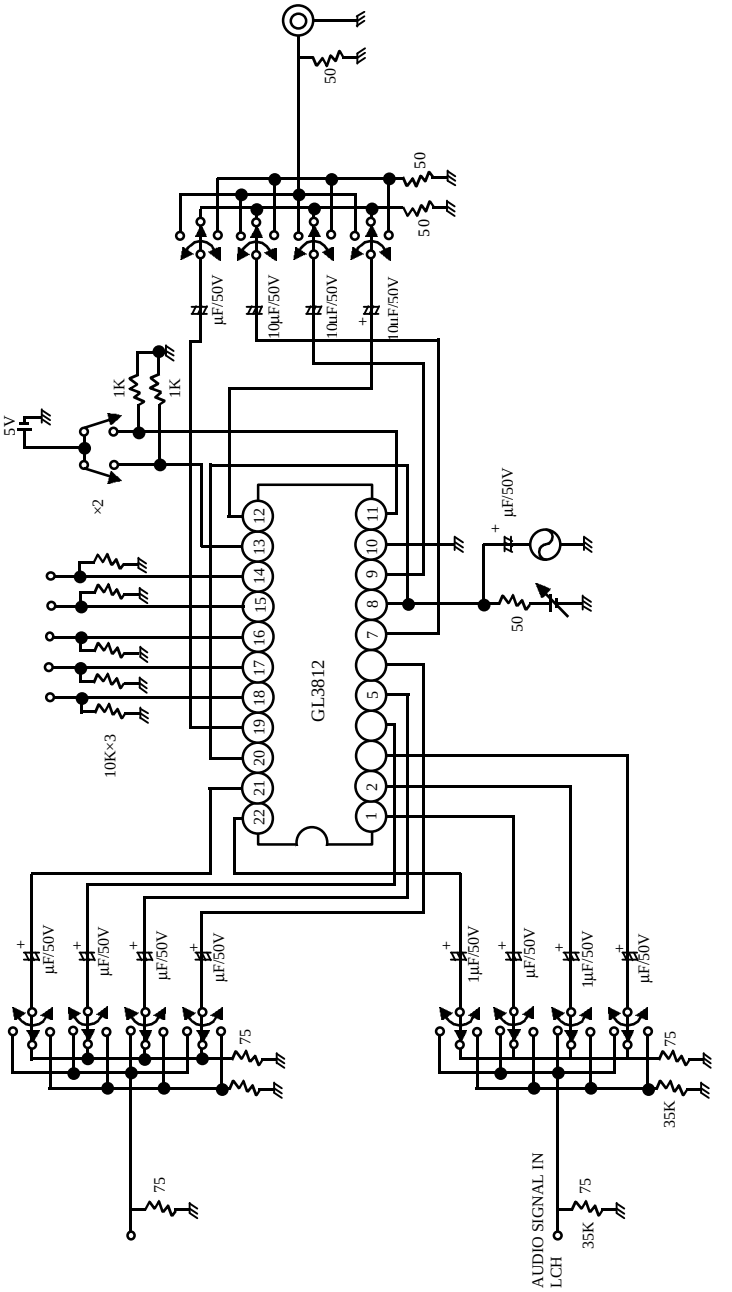
Electrical Characteristics: T_A = 25°C, V_{CC} = 12V

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Current Dissipation	$I_{CC1,2}$	$V_{CC1} = V_{CC2} = 12V$	10	15	20	mA
Video Channel Bandwidth	F_V	-3dB Frequency	5	10	—	MHz
Video Signal Voltage Gain	A_V	f=500 kHz, $V_{IN} = 1V_{p.p}$	5.0	6.0	7.0	dB
Video Signal Input Dynamic Range	D_V	f=500 kHz, THD < 1 %	1.7	2.0	—	$V_{p.p}$
Video Channel PSRR	PS_V	$V_{CC1} = 12V + 1V_{p.p}$ 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 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 kHz, $V_{IN} = 0.5V_{p.p}$	10	12	14	DB
Audio Signal Input Dynamic Range	D_a	f=1 kHz THD < 1 %	0.7	1.0	—	$V_{p.p}$
Audio Channel PSRR	PS_a	$V_{CC2} = 12V + 1V_{p.p}$ 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 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 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 1 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 1 mode selection	10	—	—	V

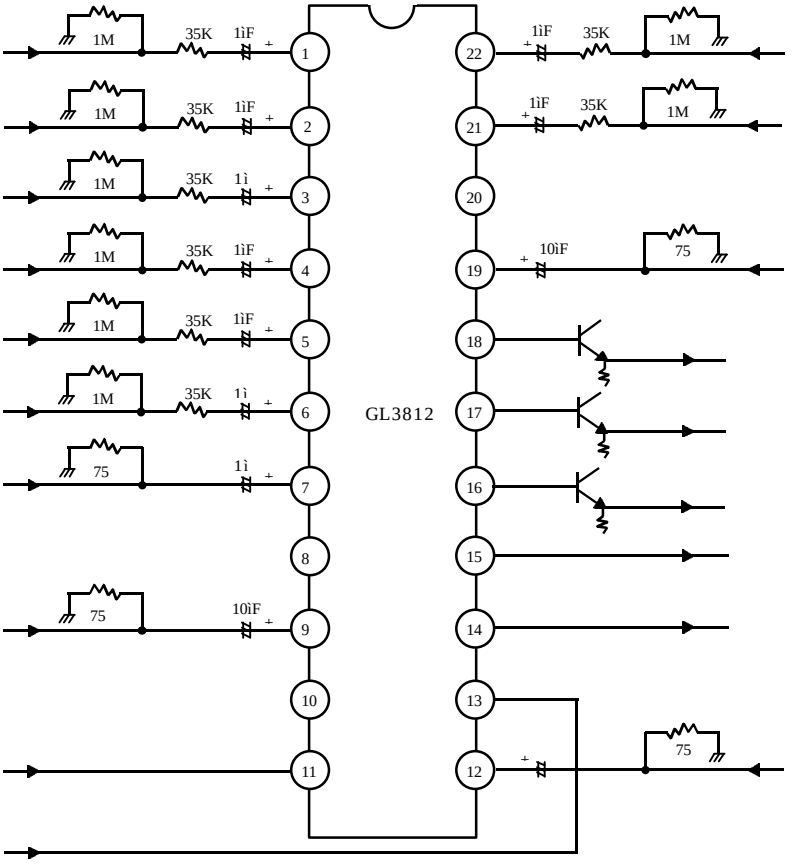
Pin Description

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.

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