



普誠科技股份有限公司
Princeton Technology Corp.

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Volume Controller IC

PT2310

DESCRIPTION

The PT2310 is an electronic volume controller IC designed for audio equipment. Utilize CMOS Technology; it has 2 individual channels attenuator built inside and ideal for both mono and stereo applications. The PT2310 provides wide frequency response range, very low total harmonic distortion and low noise. It also has a built-in loudness compensation function for the sound effect improvement.

FEATURES

- CMOS Technology
- Low Power Consumption
- Two channel independent volume attenuator
- Simplified External Components
- Wide Supply Voltage 4.5V~12V, controlled by MCU interface
- Attenuation Range 0dB~-78dB (2dB/Step)
- Built-in Loudness Compensation Function
- Wide Frequency Response, Low Total Harmonic Distortion and Low Noise
- Available in 16 Pins DIP and 16 Pins SOP

APPLICATIONS

- Audio Equipments
- TV
- Multi-media Sound Device

Electrónica S.A. de C.V.



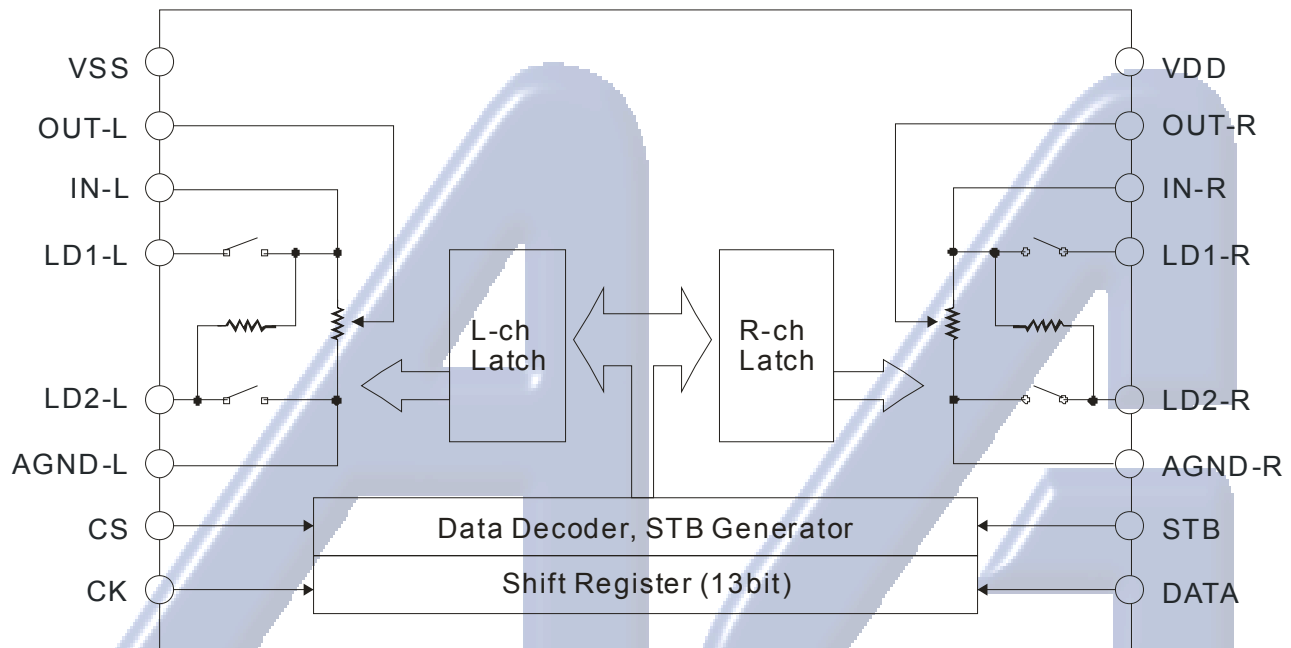
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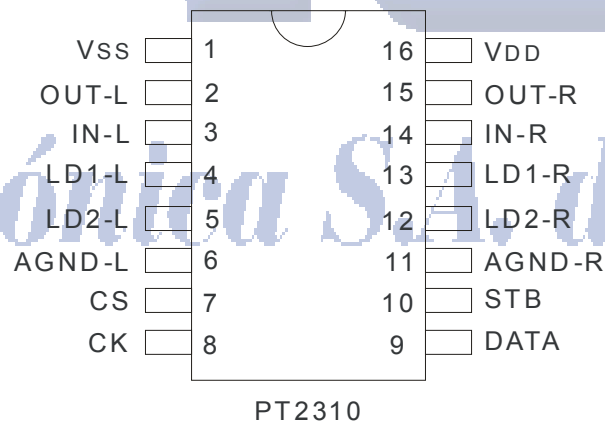
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BLOCK DIAGRAM



PIN CONFIGURATION





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PIN DESCRIPTION

Pin No.	Pin Name	I/O	Description	Function
1	V _{SS}	-	Supply voltage input (-)	-
2	OUT-L	O	Left channel output	Volume control circuit: OUT-L ○ IN-L ○ LD1-L ○ LD2-L ○ AGND-L ○ (Loudness On: LS1=On, LS2=Off)
3	IN-L	I	Left channel input	
4	LD1-L	O	Left channel volume loudness tap (1)	
5	LD2-L	O	Left channel volume loudness tap (2)	
6	AGND-L	-	Analog ground	
7	CS	-	Chip select pin	C2、C3、C4 Fixed codes are 0, 1, 1 When CS=1, C1=1 When CS=0, C1=0 (see P.5 description)
8	CK	I	Clock input	-
9	DATA	I	Data code input	Attenuation value is defined by the data code; the data code is consisting of 13bits.
10	STB	I	Strobe	After the DATA & CK codes were sent, a high strobe pulse in STB pin to confirm the data is validity.
11	AGND-R	-	Analog ground	Volume control circuit: OUT-R ○ IN-R ○ LD1-R ○ LD2-R ○ AGND-R ○ (Loudness On: LS1=On, LS2=Off)
12	LD2-R	O	Right channel volume loudness tap (2)	
13	LD1-R	O	Right channel volume loudness tap (1)	
14	IN-R	I	Right channel input	
15	OUT-R	O	Right channel output	
16	V _{DD}	-	Supply voltage input (+)	-

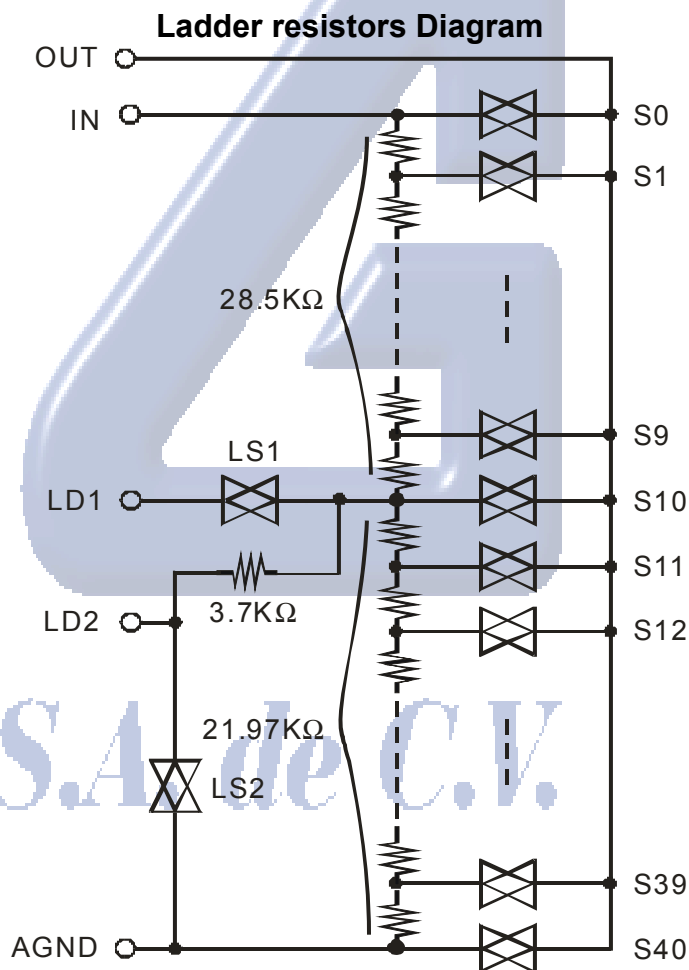


FUNCTION DESCRIPTION

ATTENUATION

The PT2310 volume attenuator consists of a resistor ladder and an analog switch. The Tap for loudness function is connected to the Step 10 (-20 dB). The relations of step and attenuation are given in the table below.

Step	dB	Step	dB
0	0	21	-42
1	-2	22	-44
2	-4	23	-46
3	-6	24	-48
4	-8	25	-50
5	-10	26	-52
6	-12	27	-54
7	-14	28	-56
8	-16	29	-58
9	-18	30	-60
10	-20	31	-62
11	-22	32	-64
12	-24	33	-66
13	-26	34	-68
14	-28	35	-70
15	-30	36	-72
16	-32	37	-74
17	-34	38	-76
18	-36	39	-78
19	-38	40	-∞
20	-40		



Note:

1. Loudness On: LS1=On, LS2=Off
2. Loudness Off: LS1=Off, LS2=On