

DESCRIPTION

The PT2834 is a system integrated audio chip with audio processor, stereo/mono Class-D amplifier, 16Bit audio DAC and Class-AB headphone driver. The signal path is pure analog processing to maintain high performances and low power consumption. The input selector accepts multiple analog sources and digital 16bit audio source can be converts to analog by built-in 16bit audio DAC. The PT2834 also provides auto level control prevent the line out and class-D amplifier output clipping and distortion. The functions control is through the I²C registers.

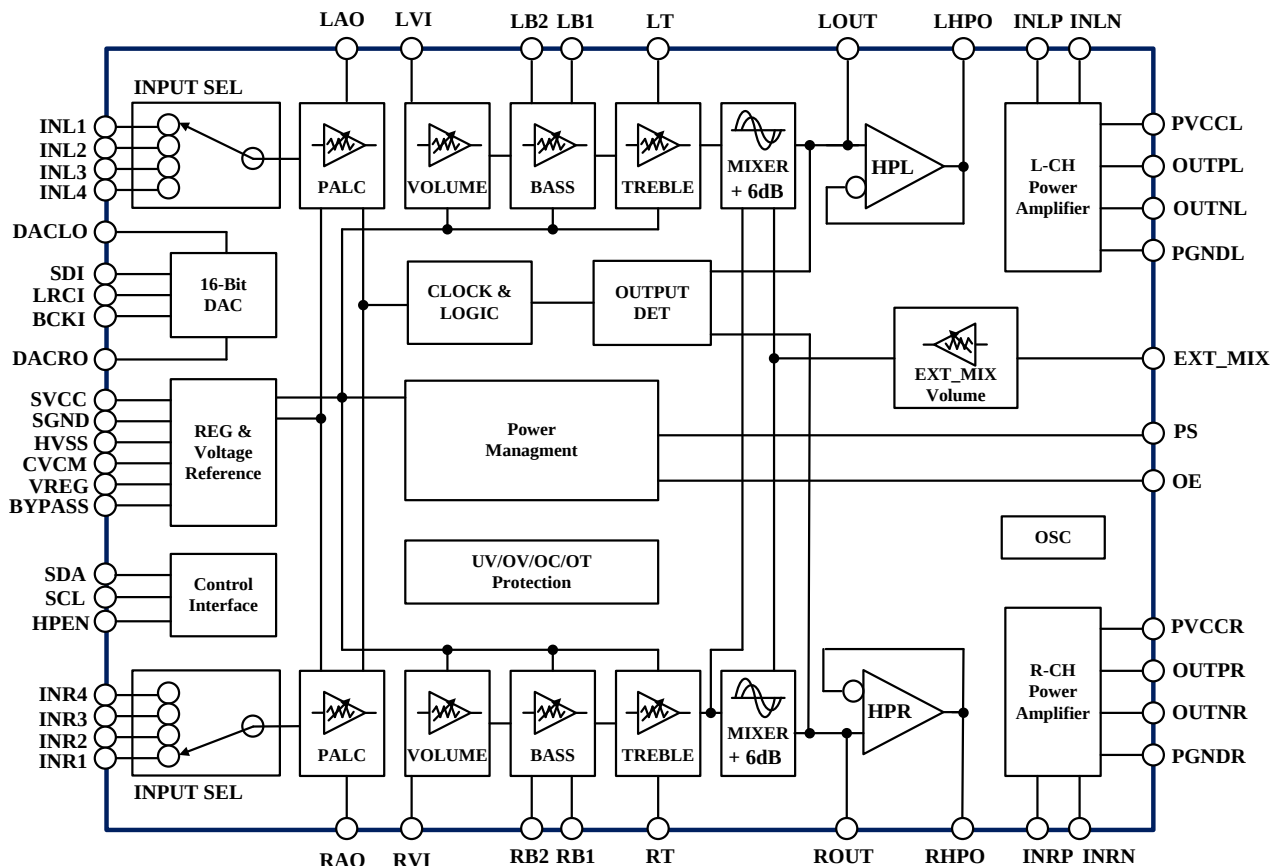
APPLICATIONS

- PC/Video Projector
- Flat panel display and TV
- Sound Bar Speaker
- Docking audio system
- Other audio applications

FEATURES

- Supply Voltage: class-d amplifier : 7~15V, Audio processor and headphone driver : 5V.
- 4 Inputs selector
- L/R channel and EXT_MIX Volume controller
- BASS and TREBLE control
- Line output with external input Mixer
- Programmable auto level control (PALC) prevents the line out clipped.
- 150mW X 2 Class-AB headphone driver (RL=16Ω)
- 16Bits stereo audio DAC, support I²S, LJ and RJ formats.
- 15W X 2 or 30W X1, Stereo/Mono configurable Class-D power amplifier (VDD=15V)
- Differential input power amplifier for improved CMRR.
- Pop-Free circuitry eliminates unpleasant noises during power ON/OFF.
- Low power saving mode
- Over Temperature and Over current Protection circuitry
- Controlled by I2C interface

BLOCK DIAGRAM



The diagram illustrates the PT2834 audio codec chip, a central component used in various audio applications. It features a variety of pins for digital control, analog input/output, and power management.

Digital Interface

- SDA (Serial Data In)**: Pin 39, connected to DVCC (=3-5V) via a 3K resistor.
- SCL (Serial Clock In)**: Pin 38, connected to DVCC (=3-5V) via a 3K resistor.
- NC (No Connect)**: Pins 5, 10, 11, 52, 55, 58, 61.
- TH (Thermal Pad)**: Pin 12, connected to GND.

Left Channel Audio I/O

- EXT_MIX (External Mix Input)**: Connected to pin 7 via a 1uF capacitor.
- INL2, INL3, INL4 (Line Inputs)**: Connected to pins 20, 19, and 18 respectively via 1uF capacitors.
- LAO (Left Analog Output)**: Pin 17, connected to LVI (pin 16) via a 1uF capacitor.
- LT (Left Test Point)**: Pin 13, connected to LB2 (pin 14) via an 820pF capacitor.
- LB1 (Left Bias Point)**: Pin 15, connected to LOUT (pin 12) via an 8.2K resistor and two 68nF capacitors.
- LOUT (Left Output)**: Pin 12, connected to INLP (pin 4) via a 2.2uF capacitor.
- INLN (Left Noise Input)**: Pin 3, connected to INLN (pin 3) via two 0.47uF capacitors.

Right Channel Audio I/O

- INR2, INR3, INR4 (Line Inputs)**: Connected to pins 29, 30, and 31 respectively via 1uF capacitors.
- RAO (Right Analog Output)**: Pin 32, connected to RVI (pin 33) via a 1uF capacitor.
- RT (Right Test Point)**: Pin 36, connected to RB2 (pin 35) via an 820pF capacitor.
- RB1 (Right Bias Point)**: Pin 34, connected to ROUT (pin 37) via an 8.2K resistor and two 68nF capacitors.
- ROUT (Right Output)**: Pin 37, connected to INRP (pin 45) via a 2.2uF capacitor.
- INRN (Right Noise Input)**: Pin 46, connected to INRN (pin 46) via two 0.47uF capacitors.

Speaker Outputs

- OUTPL (Left Speaker Output Positive)**: Pin 63, connected to L+ via a lowpass filter.
- OUTNL (Left Speaker Output Negative)**: Pin 57, connected to L- via a lowpass filter.
- OUTNR (Right Speaker Output Negative)**: Pin 56, connected to R- via a lowpass filter.
- OUTPR (Right Speaker Output Positive)**: Pin 50, connected to R+ via a lowpass filter.

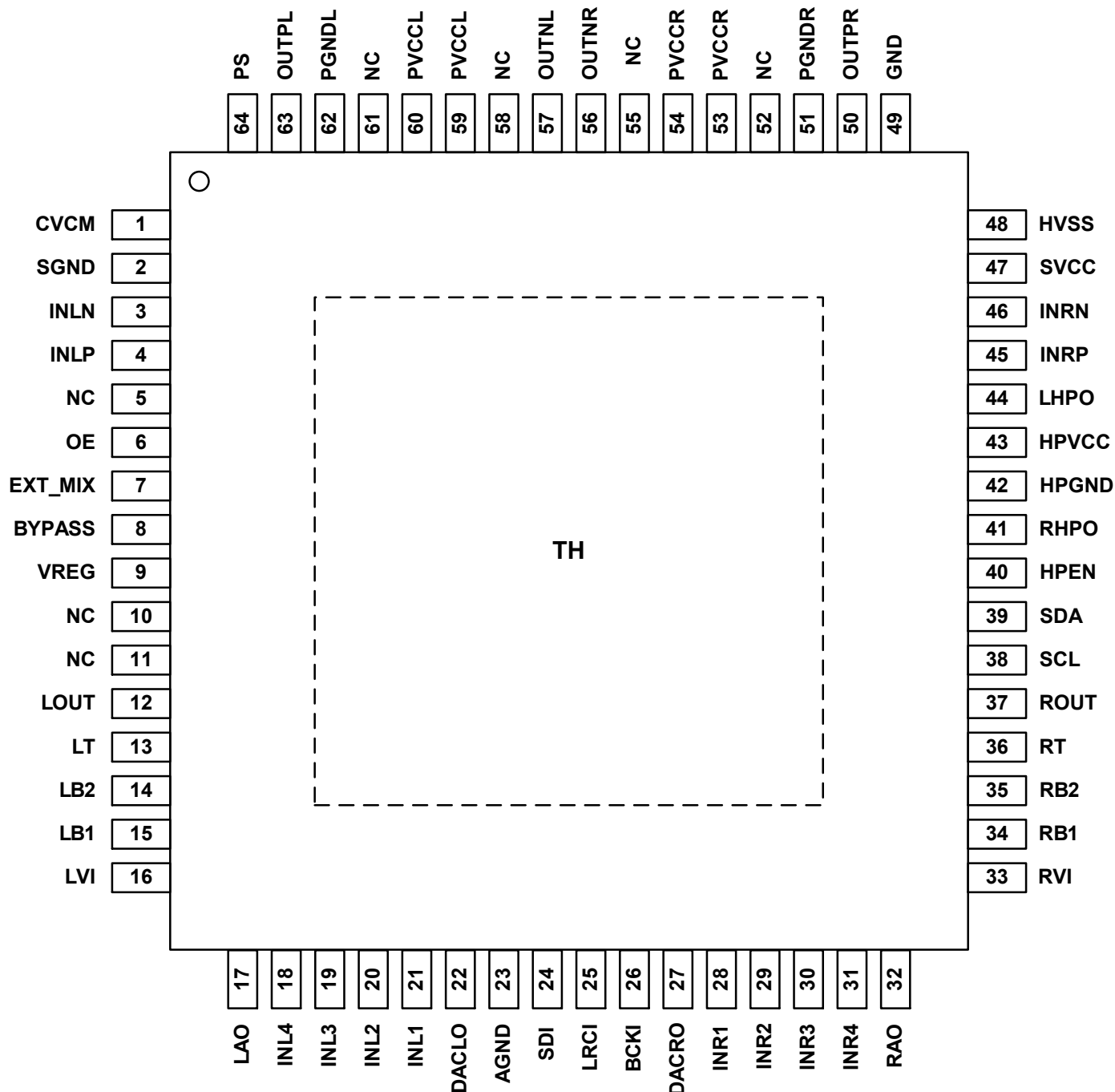
Power Supply and Headphone Output

- VREG (Voltage Regulator)**: Connected to pins 1, 8, and 9 via 4.7uF and 2.2uF capacitors.
- AVCC (=+5V)**: Connected to pin 9 via a 1uF capacitor.
- PS (Power Supply)**: Connected to pin 2 via a 100K resistor.
- AGND (Analog Ground)**: Connected to pin 23 via a 100K resistor.
- PVCC (=7-15V)**: Connected to pin 47 via a 0.1uF capacitor.
- PGND (Power Ground)**: Connected to pin 62 via a 10uF capacitor.
- HPEN (Headphone Enable)**: Pin 40, connected to VREG via a 10K resistor.
- LHPO (Left Headphone Output)**: Pin 44, connected to RHPO (pin 41) via a 220uF capacitor.
- RHPO (Right Headphone Output)**: Pin 41, connected to LHPO (pin 44) via a 220uF capacitor.
- OE (Output Enable)**: Pin 6, connected to GND via a 0.47uF capacitor.

ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT2834-TQ	64 Pins, E-TQFP	PT2834-TQ

PIN CONFIGURATION



IMPORTANT NOTICE

Princeton Technology Corporation (PTC) reserves the right to make corrections, modifications, enhancements, improvements, and other changes to its products and to discontinue any product without notice at any time.

PTC cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a PTC product. No circuit patent licenses are implied.

Princeton Technology Corp.
2F, 233-1, Baociao Road,
Sindian Dist., New Taipei City 23145, Taiwan
Tel : 886-2-66296288
Fax: 886-2-29174598
<http://www.princeton.com.tw>