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AK4332**Low-Power Advanced 32-bit Mono DAC with HP****1. General Description**

The AK4332 is an advanced 32-bit high sound quality mono audio DAC with a built-in ground-referenced headphone amplifier. It has four types of 32-bit digital filters for better sound quality, achieving low distortion characteristics and wide dynamic range. The AK4332 accepts PCM Data, PDM Data and DSD Data. It is available in a 30-pin CSP package, utilizing less board space than competitive offerings.

2. Features

1. **High Sound Quality Low Power Advanced 32-bit Mono DAC**
 - 4 types of Digital Filter for Sound Color Selection in PCM Mode
 - Short Delay Sharp Roll-off, $GD = 5.5 / fs$
 - Short Delay Slow Roll-off, $GD = 4.5 / fs$
 - Sharp Roll-off
 - Slow Roll-off
2. **Ground-referenced Class-G Stereo Headphone Amplifier**
 - Output Power: 88 mW @ 8Ω
 - THD+N: -101 dB
 - S/N: 109 dB
 - Output Noise Level: -114 dBV (Analog Volume = -10 dB)
 - Analog Volume: +4 to -10 dB, 2 dB Step
 - Ground Loop Noise Cancellation
3. **Low Power Consumption: 2.8 mW ($fs = 48kHz$, External Slave Mode)**
4. **Digital Audio interface**
 - PCM Interface Format: 32/24/16-bit I²S/MSB justified
Master / Slave Mode
Sampling Frequency (Master / Slave Mode):
8 k, 11.025 k, 12 k, 16 k, 22.05 k, 24 k, 32 k, 44.1 k, 48 k, 64 k, 88.2 k, 96 k, 128 k,
176.4 k, 192 kHz
 - PDM 1-bit Input Support
 - DSD Input Support
5. **Power Management**
6. **PLL**
7. **μP Interface: I²C-bus (400 kHz)**
8. **Operation Temperature Range: $T_a = -40$ to 85 °C**
9. **Power Supply:**
 - AVDD (DAC, PLL): 1.7 to 1.9 V
 - CVDD (Headphone Amplifier, Charge Pump): 1.7 to 1.9 V
 - LVDD (Digital Interface & LDO2 for Digital Core): 1.7 to 1.9 V (built-in LDO)
10. **Package: 30-pin CSP (2.371 mm × 1.971 mm, 0.4 mm pitch)**

3. Block Diagram and Functions

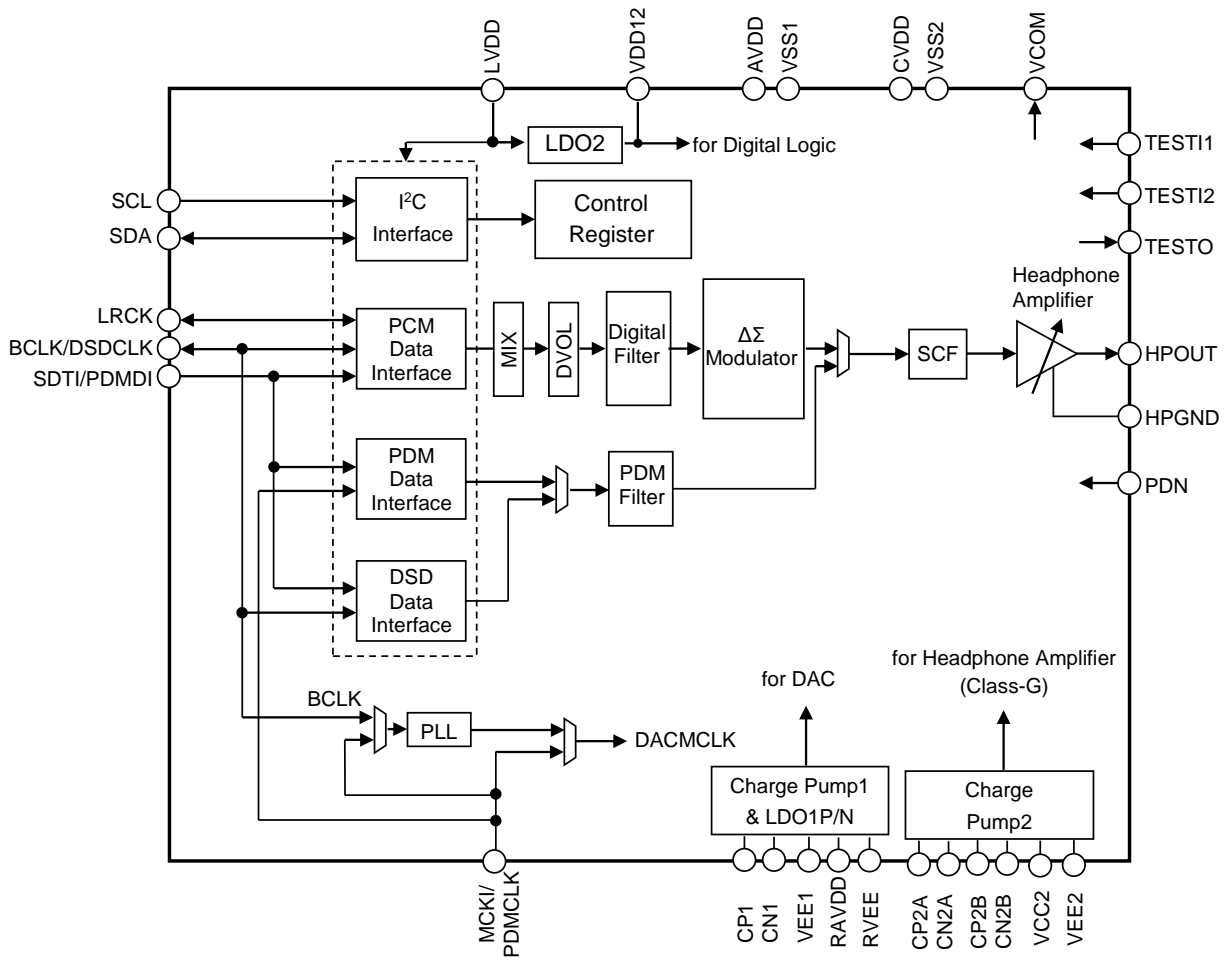
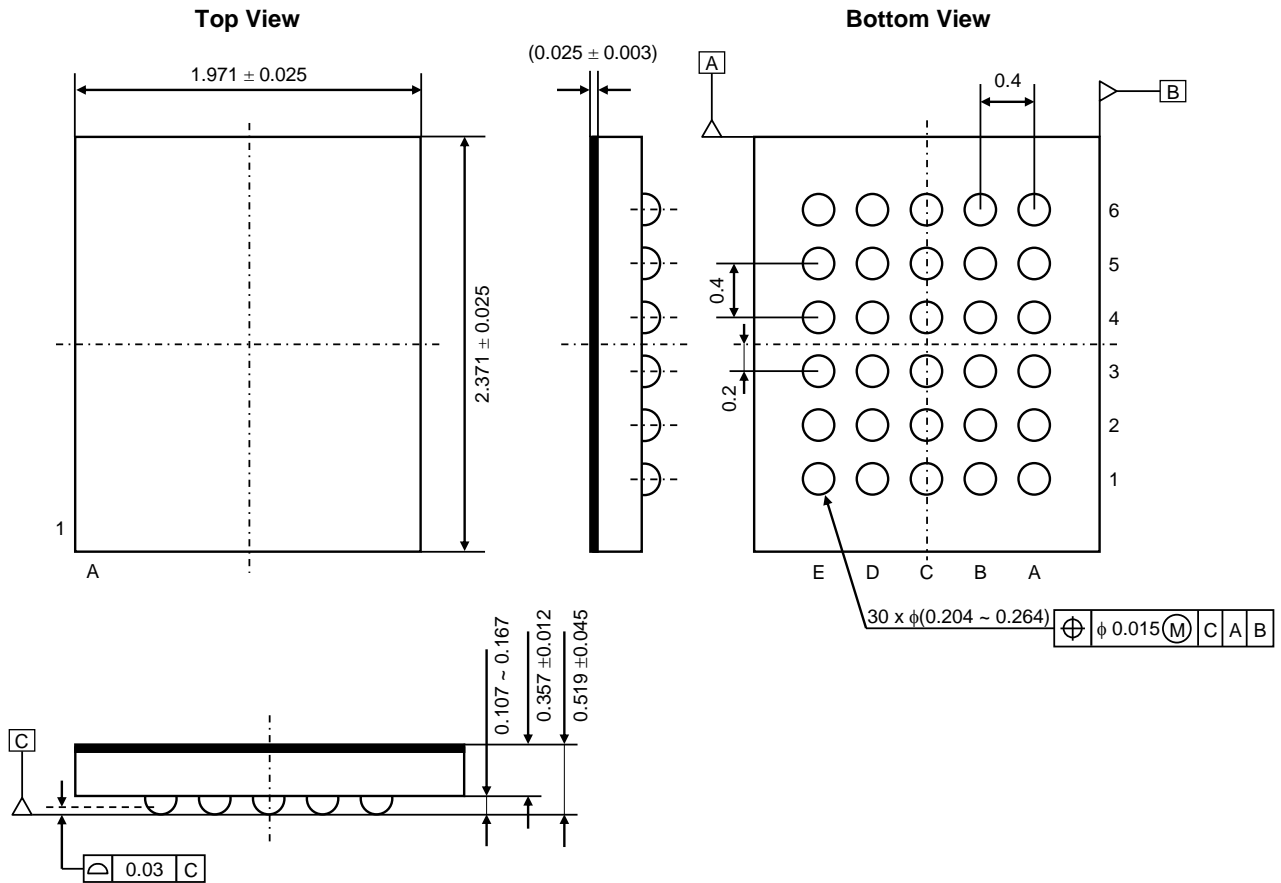


Figure 1. AK4332 Block Diagram

4. Package

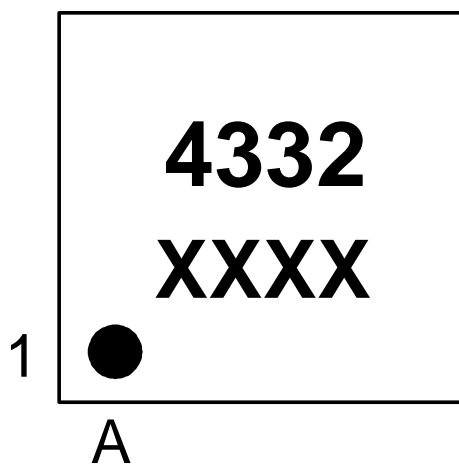
4-1. Outline Dimensions

30-pin CSP (Unit: mm)



4-2. Material and Lead Finish

Package molding compound: Epoxy Resin, Halogen Free
 Solder ball material: SnAgCu

4-3. Marking

XXXX: Date code (4 digits)
Pin #A1 indication

5. Ordering Guide

AK4332ECB	-40 to 85°C	30-pin CSP (0.4 mm pitch)
AKD4332	Evaluation board for AK4332	

Thank you for your access to AKM products information.
More detail product information is available, please contact our sales
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