ES9023

Analog Reinvented

SABRE **Premier Stereo DAC with 2Vrms Driver**

Product Brief

Device	Description	DNR (dB)	Power Supply (Output Level)	No DC-blocking capacitor	Pop-Noise Free	Package
ES9023	*SABRE Premier* Stereo DAC with 2Vrms Op-Amp Driver	112	+3.6V (2Vrms) +3.3V (1.9Vrms)	√	√	16-SOP

The ES9023 is a 24-bit stereo audio DAC with an integrated 2Vrms op-amp driver. Powered by the industry proven **SABRE** DAC technology, the ES9023 combines best-sounding audio with lowest system cost and highest performance into the ideal D/A converter for line-level output applications such as Blu-ray players, CD/DVD players, set-top boxes, digital TVs and audio receivers.

With patented Hyperstream™ architecture and Time Domain Jitter Eliminator, the ES9023 delivers jitter-free studio quality audio with 112dB DNR.

Using an integrated charge pump to generate the negative supply, the ES9023 can operate from a single AVCC supply to drive a ground-referenced 2Vrms output, eliminating the need for output dc-blocking capacitors. Optionally, the output level can be adjusted by using an external resistor, allowing for output level below 2Vrms. Pop-noise is eliminated through a comprehensive suppression on power up/down, mute, reset, loss of power or clock. Dedicated control/status pins allow easy system integration without the need for microcontroller programming.
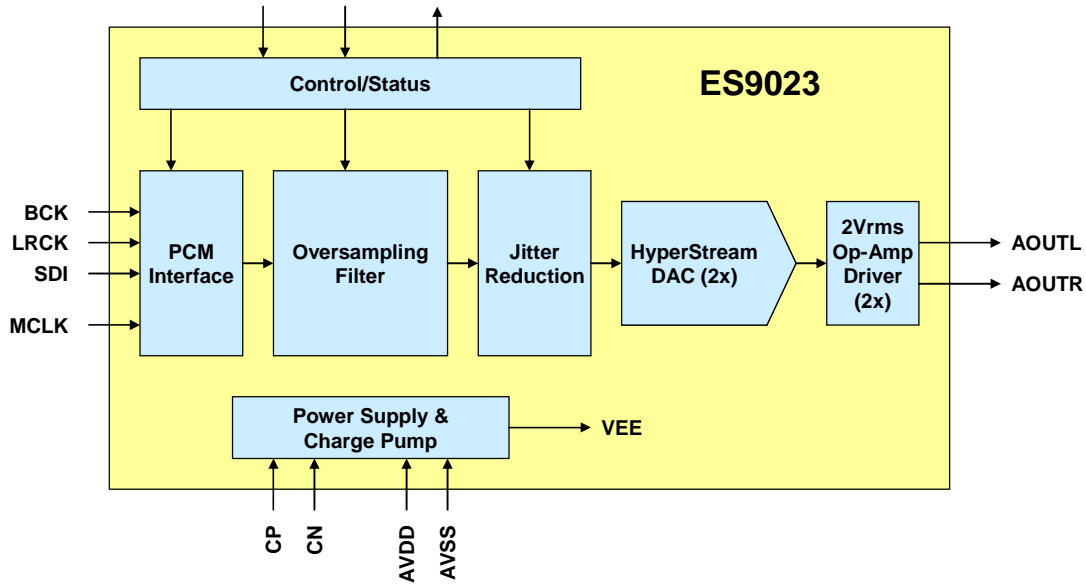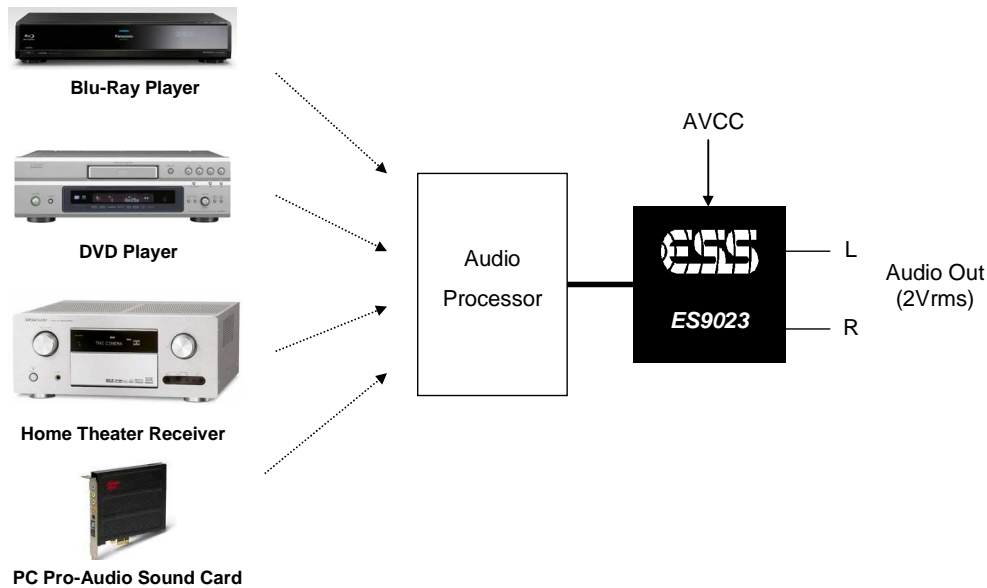
FEATURE	BENEFIT
SABRE DAC and 2Vrms op-amp driver integration	▪ Lowest system cost by minimizing external components ▪ Highest performance ▪ Best sounding audio – powered by **SABRE** DAC technology
Patented HyperStream™ and Jitter Elimination Architecture	▪ Best dynamic range: 112dB ▪ Jitter Immune
Adjustable output level	▪ Allow designer to customize output level (up to 2Vrms) based on application requirements via an external resistor
Ground reference output	▪ Reduce cost by eliminating blocking capacitors
Pop-noise suppression	▪ Pop-free on power up/down, mute and reset
Dedicated control/status pins ▪ I2S or left-justified select ▪ Soft mute enable ▪ Zero detect output	▪ Easy to use – no programming required
Charge pump for negative supply	▪ Single AVCC simplifies power supply
Low power consumption in 16-SOP	▪ Simply power supply and reduce PCB size

FUNCTIONAL BLOCK DIAGRAM

APPLICATION DIAGRAM