PCM3168APAPR

General Purpose Audio Codec 6ADC / 8DAC Ch 64-Pin HTQFP EP T/R

Manufacturer:	Texas Instruments, Inc
Package/Case:	QFP64
Product Type:	Communication & Networking ICs
RoHS:	RoHS Compliant/Lead free
Lifecycle:	Active

Images are for reference only

Inquiry

General Description

The PCM3168A device is a high-performance, single-chip, 24-bit, 6-in/8-out, audio coder and decoder (codecs) with single-ended and differential-selectable analog inputs and differential outputs.

The six-channel, 24-bit analog-to-digital converter (ADC) employs a delta-sigma (ΔΣ) modulator and supports 8-kHz to 96-kHz sampling rates and a 16-bit/24-bit width digital audio output word on the audio interface.

The eight-channel, 24-bit digital-to-analog converter (DAC) employs a ΔΣ modulator and supports 8-kHz to 192-kHz sampling rates and a 16-bit/24-bit width digital audio input word on the audio interface. Each audio interface supports I^2S, left-justified, right-justified, and DSP formats with 16-bit/24-bit word width. In addition, the PCM3168A device supports the time-division-multiplexed (TDM) format.

The PCM3168A device can be controlled through a four-wire, SPI-compatible interface, or two-wire, I^2C-compatible serial interface in software, which provides access to all functions including digital attenuation, soft mute, de-emphasis, and so forth. Also, hardware control mode provides a subset of user-programmable functions through four control pins. The PCM3168A device is available in a 12-mm × 12-mm (10-mm × 10-mm body) HTQFP-64 PowerPAD package.

Key Features

24-Bit ΔΣ ADC and DAC

Six-ChanneL ADC:
High Performance: Differential and Single-Ended, f_S = 48 kHz

THD+N: –93 dB (Differential and Single-Ended)

SNR: 107 dB (Differential),
104 dB (Single-Ended)

Dynamic Range: 107 dB (Differential),
104 dB (Single-Ended)

Sampling Rate: 8 kHz to 96 kHz

System Clock: 256 f_S, 384 f_S, 512 f_S, 768 f_S

Differential Voltage Input: 2 V_{RMS}

Single-Ended Voltage Input: 1 V_{RMS}

Decimation Filter:
Passband Ripple: ±0.035 dB

Stop Band Attenuation: –75 dB

On-Chip, Highpass Filter:
0.96 Hz at f_S = 48 kHz

Overflow Flag

Eight-Channel DAC:
High Performance: Differential, f_S = 48 kHz

THD+N: –94 dB

SNR: 112 dB

Dynamic Range: 112 dB

Sampling Rate: 8 kHz to 192 kHz

System Clock: 128 f_S, 192 f_S, 256 f_S, 384 f_S, 512 f_S, 768 f_S

Differential Voltage Output: 8 V_{PP}

Analog Lowpass Filter Included

4x/8x Oversampling Digital Filter:
Passband Ripple: ±0.0018 dB

Stop Band Attenuation: –75 dB

Zero Flag

Flexible Mode Control:
Four-Wire SPI>rade;, Two-Wire I^2C Compatible Serial Control Interface or Hardware Control

Multi Functions Through SPI or I2C I/F:
Audio I/F Mode and Format Select for ADC and DAC

Digital Attenuation and Soft Mute for ADC and DAC

Digital De-Emphasis: 32, 44.1, and 48 kHz for DAC

Multi Functions Through H/W Control:
Audio I/F Mode/Format Select

Digital De-Emphasis Filter: 44.1 kHz for DAC

External Reset Pin:
ADC/DAC Simultaneous

Audio Interface Mode:
ADC/DAC Independent Master and Slave

Audio Data Format:
ADC/DAC Independent I^2S, Left-Justified, Right-Justified, DSP, TDM

Power Supplies: 5 V for Analog and 3.3 V for Digital

Package: HTQFP-64

Operating Temperature Range:
Consumer Grade: –40°C to 85°C

Automotive Audio Grade: –40°C to 105°C

Recommended For You

PCA9534APWR

Texas Instruments, Inc

TSSOP16

PCA9557PW

Texas Instruments, Inc

TSSOP16

PCA9538PWR

Texas Instruments, Inc

TSSOP16

PCA9515AD

Texas Instruments, Inc

SOP8

PCM2904DB

Texas Instruments, Inc

SSOP

PCM3000E

Texas Instruments, Inc

SSOP28

PCF8574N

Texas Instruments, Inc

DIP16

PCA9515BDGKR

Texas Instruments, Inc

MSOP8

PCM3500E

Texas Instruments, Inc

SSOP24

PCF8574RGTR

Texas Instruments, Inc

QFN16

PCI2050PDV

Texas Instruments, Inc

QFP208

PCA9539DW

Texas Instruments, Inc

SOIC(DW)

PCI1510GGU

Texas Instruments, Inc

BGA144

PCM2900CDBR

Texas Instruments, Inc

SSOP28

PCF8575PWR

Texas Instruments, Inc

TSSOP24