



New 32bit D/A Converter IC 'BD34352EKV' for Hi-Fi Audio Equipment

ROHM now offers a DAC chip lineup for high-end audio

March 1, 2022
ROHM Co., Ltd.
Marketing Communications Dept.

*Please note that this document is current as of the date of publication

High Fidelity Audio Equipment and ROHM's Approach



Recording Media
(Audio Source)

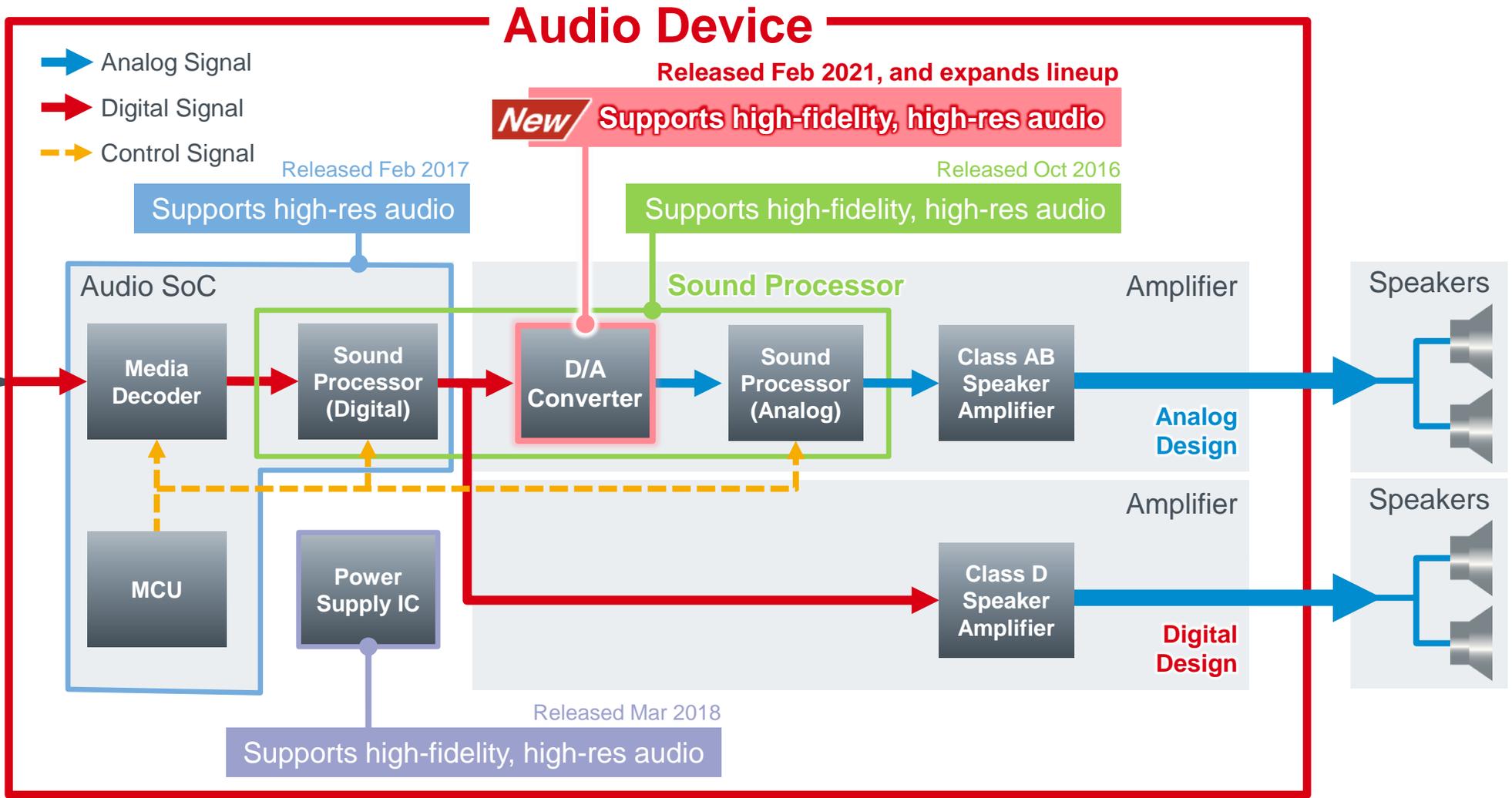


USB



Bluetooth™

RADIO/
TV Tuner

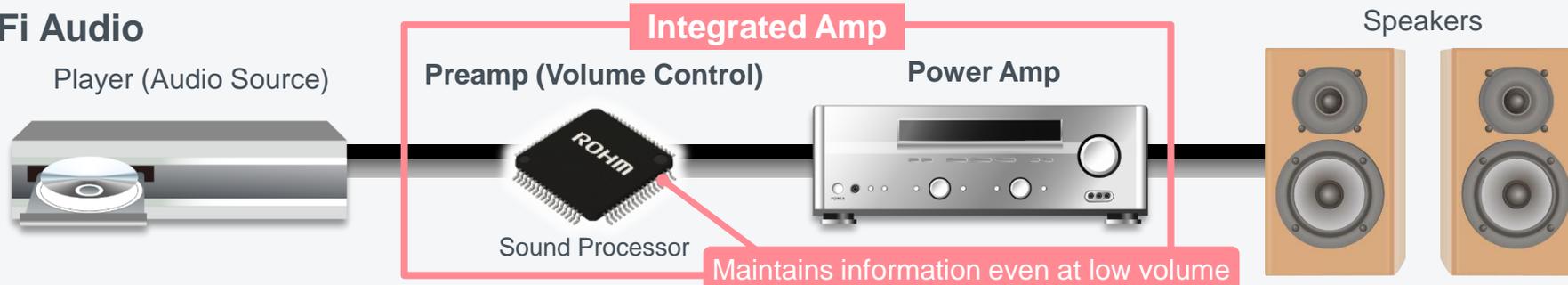


ROHM is developing a variety of products for high fidelity audio equipment that supports high resolution audio playback

Achieving Optimum Sound Quality Using ROHM's Vertically Integrated Production System and Sound Quality Design Technology

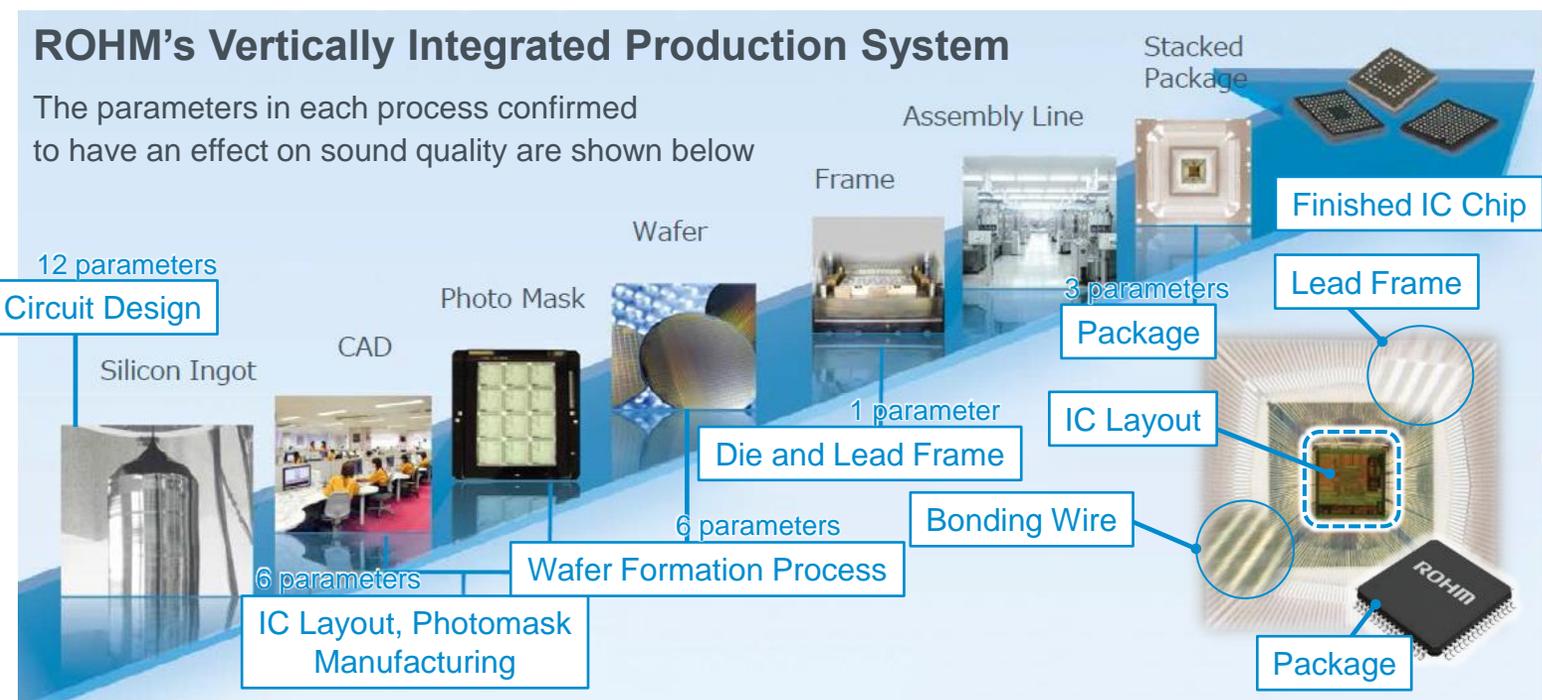


Ex) Sound Processors for Hi-Fi Audio



ROHM's Vertically Integrated Production System

The parameters in each process confirmed to have an effect on sound quality are shown below

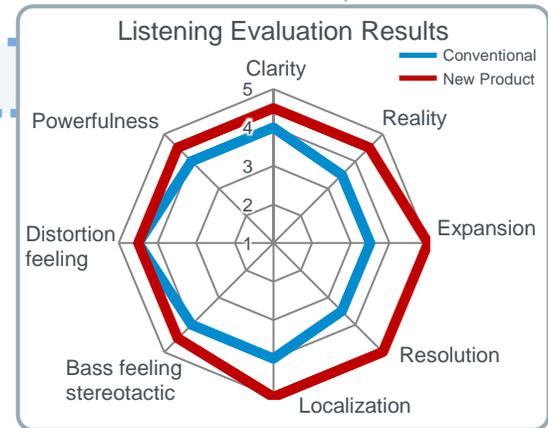


At various steps in our vertically integrated production process, we have identified 28 parameters that affect sound quality and adjusted them one by one to create the desired sound

Verify the sound quality in a dedicated listening room (At the Yokohama Technology Center)



Check sound quality through actual listening evaluation based on a set of indicators



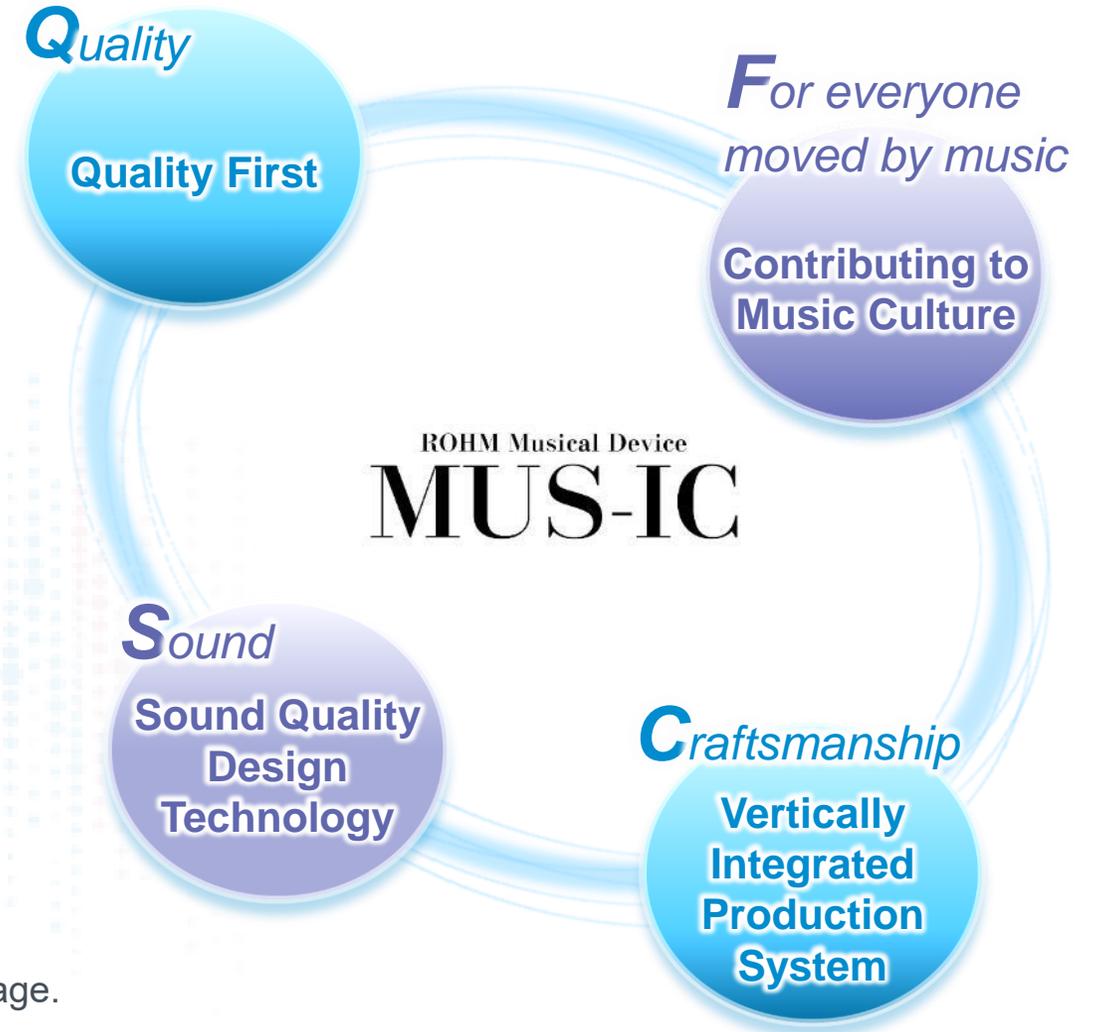
ROHM Musical Device
MUS-IC

MUS-IC™

Created by combining the '**Sound Quality Design Technology**' with ROHM's company mission of '**Quality First**', '**Vertically Integrated Production System**', and '**Contribution to the Musical Culture**', MUS-IC™ (official name: ROHM Musical Device 'MUS-IC™') is an audio device brand that represents the ultimate IC solutions developed by ROHM's team of experienced and dedicated engineers.

For more information, please visit ROHM's Musical Device 'MUS-IC™' web page.

<https://www.rohm.com/mus-ic/>



It is born for music, the masterpiece of ROHM's audio IC

ROHM Musical Device

MUS-IC

Power Supply IC

Sound Processor

D/A Converter IC



[BD37201NUX](#)

[BD34704KS2](#)

[BD34301EKV](#)

[BD34705KS2](#)

[BD34602FS-M](#)

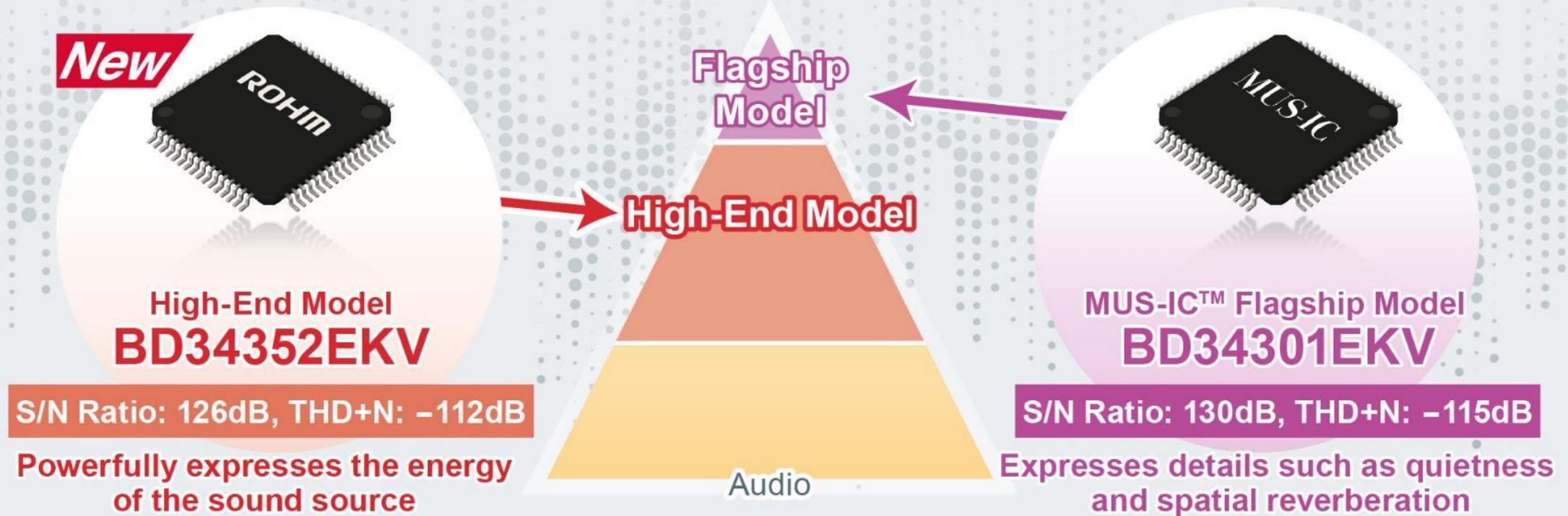
Development of the new 32bit D/A Converter IC 'BD34352EKV'

for high-end models in response to many requests



ROHM DAC Chip Lineup for High Fidelity Audio Equipment

Original sound quality design technology ensures natural, flat sound



ROHM now offers a DAC chip for high-end audio equipment

BD34352EKV 32bit D/A Converter IC

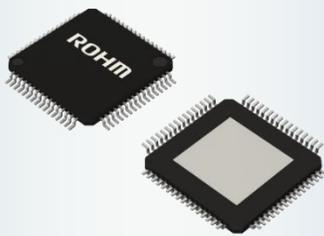
Product Overview



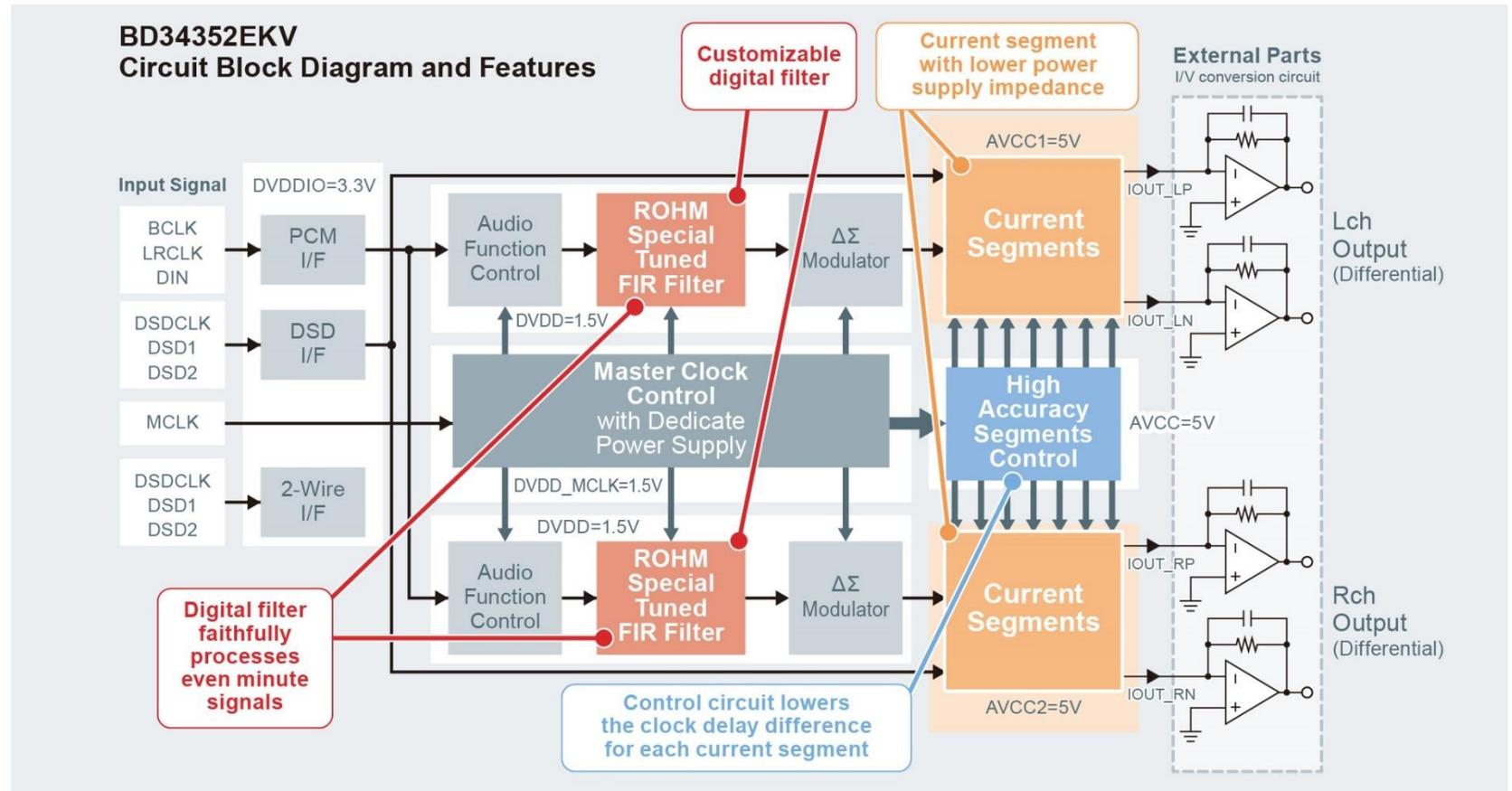
The **BD34352EKV** is tuned to powerfully express the energy of sound sources while maintaining the "Natural and Flat sound" characteristics of ROHM's DAC chips design concept

Key Characteristics

- No. of Outputs: 2ch (Stereo)
- Resolution: 32bit
- Sampling Frequency: 32kHz to 768kHz
- SN Ratio: 126dB (Typ.)
- THD+N: -112dB (Typ.)
- DSD Clock: 2.8MHz, 5.6MHz, 1.2MHz, 22.4 MHz
- FIR Filter: Preset, Custom, External



BD34352EKV
HTQFP64BV Package



ROHM begin selling the new DAC chip BD34352EKV along with an evaluation board that allows users to verify sound quality

The **BD34352EKV** not only achieves superior numerical performance (SN ratio: 126dB, THD+N: -112dB) in audio devices, but also improving sound quality performance by the following ways

Efforts to improve sound quality performance

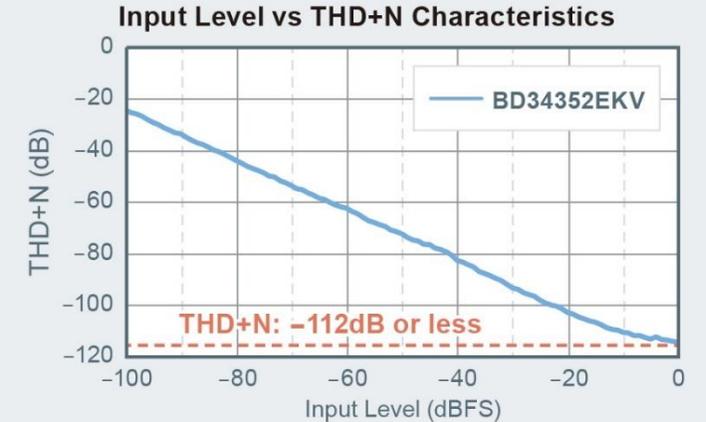
Utilizing the technology of BD34301EKV

D/A Conversion Circuit

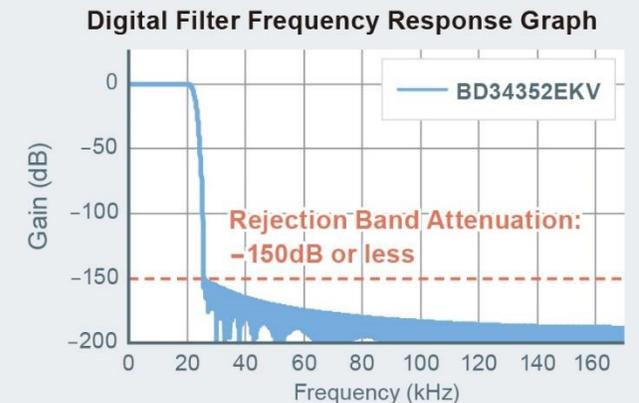
- Minimizes the power supply impedance of each current segment
- Optimized wiring layout
 - ➡ Reduces the clock delay (that determines the timing operation of each current segment) as much as possible
- The output current has been newly adjusted for

Digital Signal Processing Circuit

- The FIR filter (a key function) is designed to faithfully process even the smallest signals
 - ➡ Achieves a rejection band attenuation (a filter performance index) of -150dB or less



Achieves class-leading THD+N characteristics of -112dB



Digital filters ensure faithful processing even when ≤ -150 dB

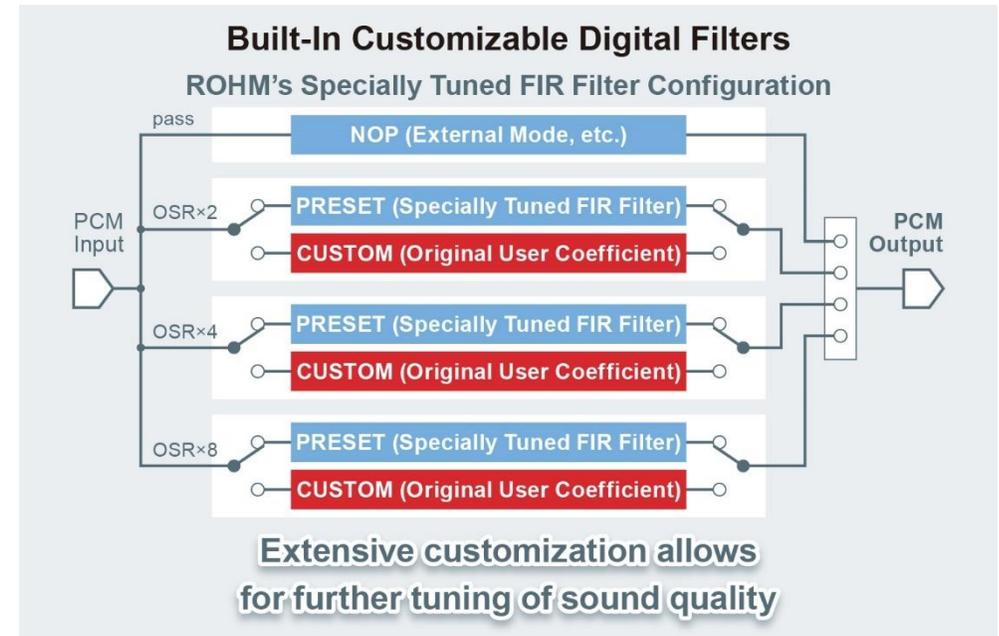
BD34352EKV provides sound quality characteristics that allow listeners to hear more powerful, natural flat sound

The BD34352EKV includes a customizable digital filter - a key feature of the digital signal processing circuit - supporting the creation of the deal sound sought by audio equipment manufacturers

FIR Filter Specifications

- Select from preset / custom / external settings
- The filter's calculation coefficients and oversampling rate can also be customized with the program function
 - ➔ Configure unique digital filters to easily achieve different sound quality tunings for each audio device

& Pin-compatible with the BD34301EKV, making it easy to use for different models

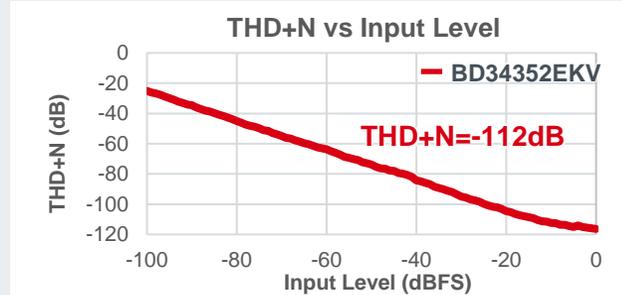
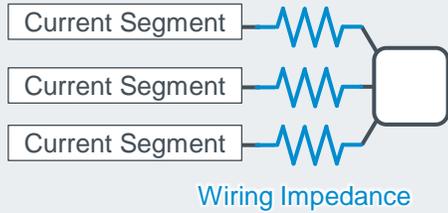


These features reduce development load while contributing to the creation of ideal sound sought by audio manufacturers

Examples of Sound Quality Improvement Effects Based on Sound Quality Design Tech.

Reduce the power supply wiring impedance of each current segment as much as possible

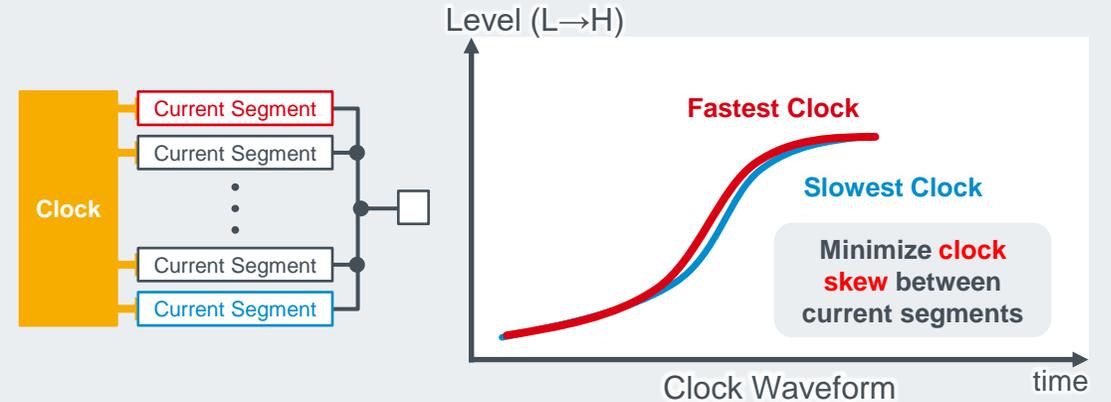
Eliminating the common impedance from each current segment to the power supply pin makes it possible to align the matching characteristics of the current segments



Sound quality improvement effect:

Improved bass power and depth, resulting in better sound range balance

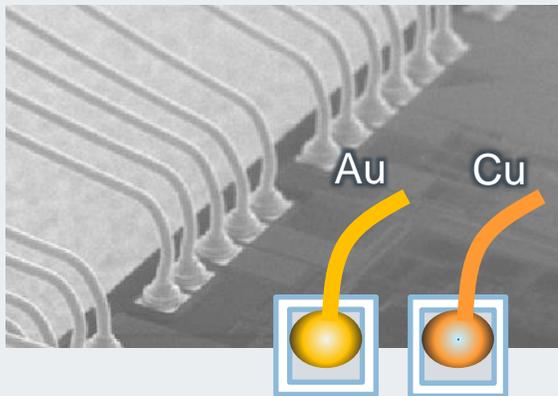
Minimize clock skew and optimize slew rate



Sound quality improvement effect:

Increased realism and resolution along with bass

Material of bonding wires connecting the chip to the lead frame



Select the best bonding wires material for the device because its material that connecting the device to the lead frame is affected the sound quality

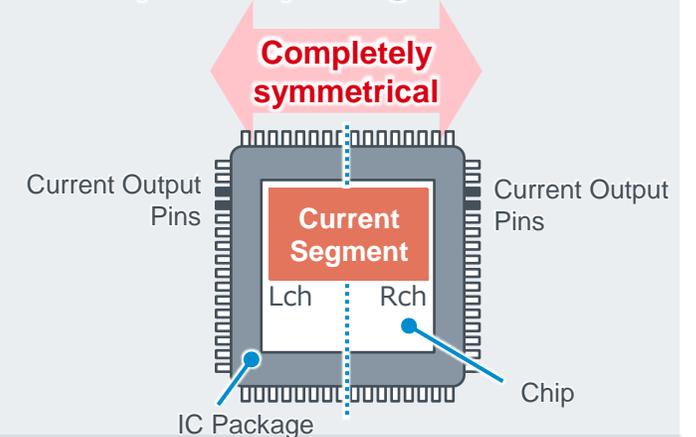


Sound quality improvement effect:

More natural reverberation, with a more delicate instrumental tone

Minimize stress on chips in IC packages

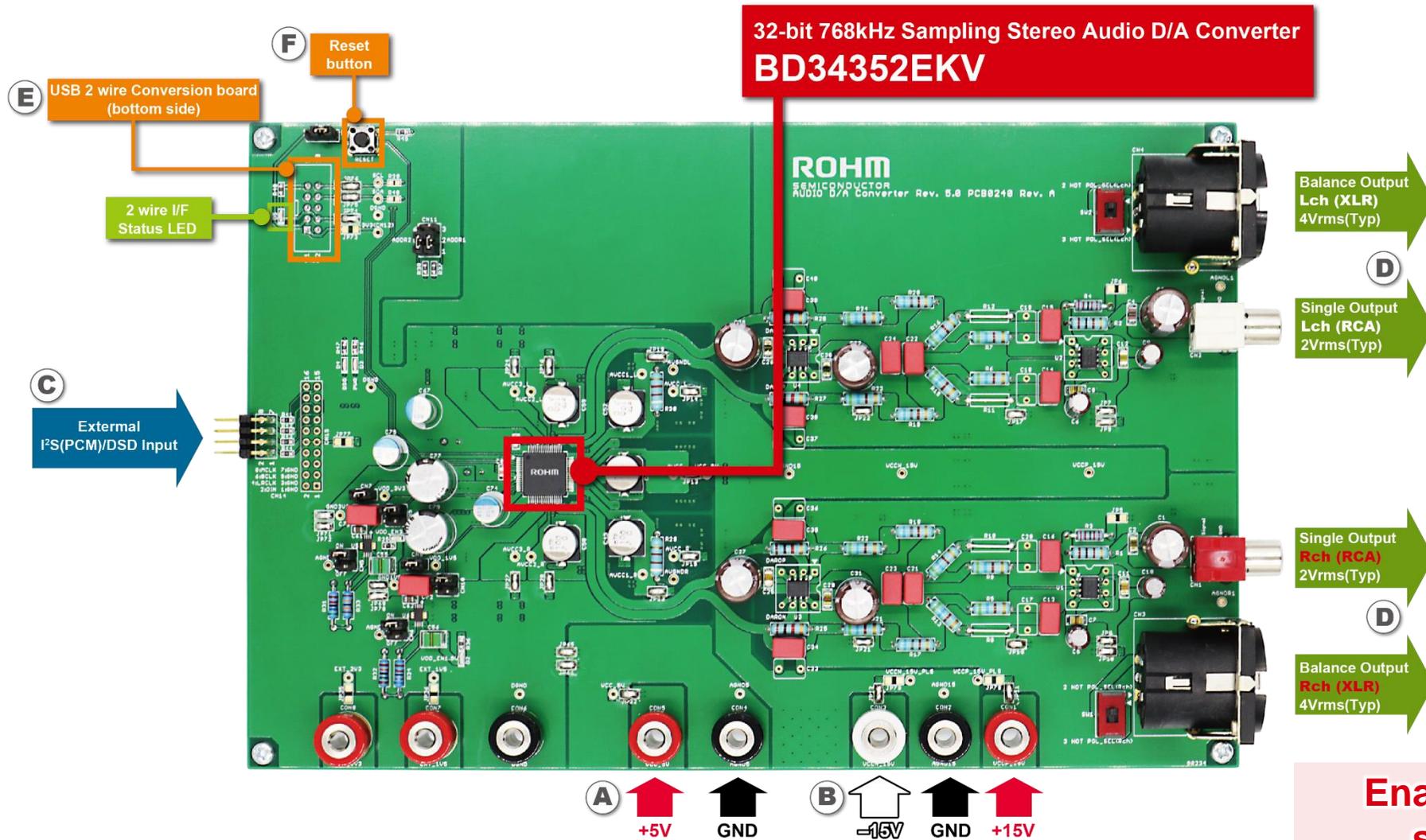
Select the IC package and wafer processing method that minimize stress. At the same time, adopt a completely symmetrical chip layout for the current segment circuit.



Sound quality improvement effect:

Reduced sound peculiarities, resulting in a more natural sound

BD34352EKV-EVK-001 Evaluation Board



Enables evaluation of the sound quality of the BD34352EKV

Please refer to the evaluation board user's guide for details.

https://fscdn.rohm.com/en/products/databook/applinote/ic/audio_video/bd34352ekv_ evk_001_ ug-e.pdf

The BD34352EKV enables evaluation and adoption for a wide range of customer

- An evaluation board (BD34352EKV-EVK-001) is also available together with IC through online distributors
- Supporting documents required for evaluation are now available on ROHM's website:

<https://www.rohm.co.jp/products/audio-video/audio-converters/audio-dacs/bd34352ekv-product>

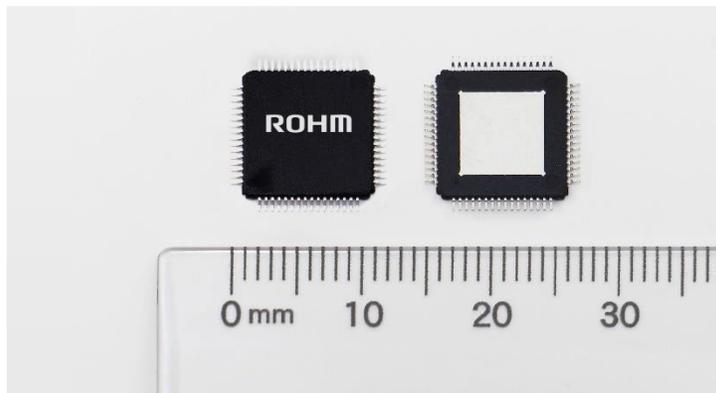
IC Sales

Part No: BD34352EKV

Sample Available: From September 2021

Reference Price: \$16.0 /pc. (excluding tax)

Production Status: In mass production

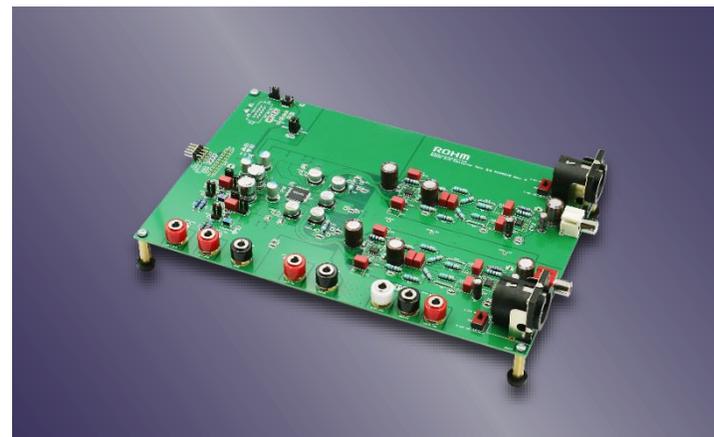


Evaluation Board Sales

Part No: BD34352EKV-EVK-001

Sales Launch Date: From February 2022

Reference Price: Please refer to each distributor website



New
**BD34352EKV is
now on sale!**

Online Distributors



[Electronic Components and Parts Search | DigiKey Electronics](#)

[Search results for: BD34352EKV ROHM Semiconductor – Mouser](#)

[BD34352EKV - Search Results | Farnell DE](#)

MUS-IC™
**BD34301EKV is
also on sale!**

**Please consider the BD34352EKV 32bit D/A converter IC
for your next design**



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- If you wish to use any such Product, please be sure to refer to the specifications, which can be obtained from ROHM upon request.
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