

Featured Products



High accuracy current monitoring contributes to improved application reliability

Current Sense Amplifiers (CSAs)

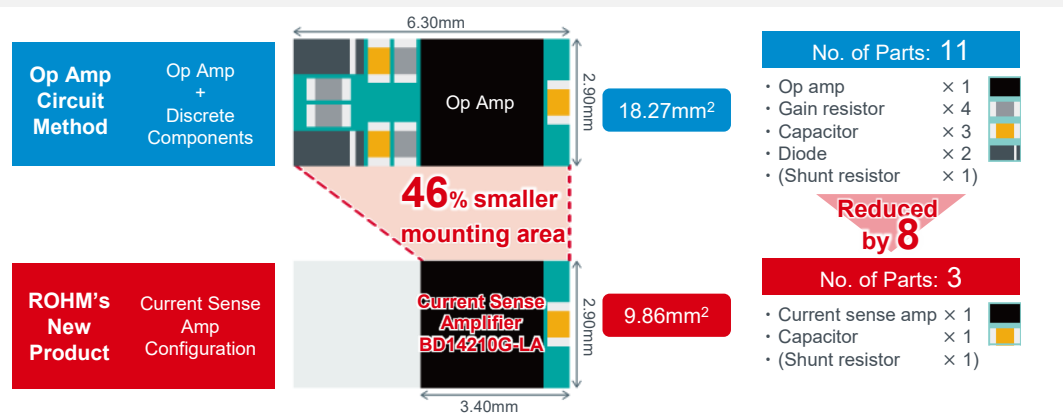
BD1421xG-LA (1ch) / BD1421xFVJ-LA (2ch) series

- **Built-in peripheral components save space by reducing the number of external parts**
Eliminates the need for an external Zener diode for circuit protection when used in 12V / 24V applications (common mode voltage range: -0.2V to +26.0V)
- **High accuracy current monitoring improves application reliability**
Built-in gain resistor significantly reduces gain variation including temperature characteristics, achieving a current detection accuracy of $\pm 1\%$
- **Chopper-type amp circuit reduces the number of resources required for input-stage filter design**
Prevents gain accuracy degradation due to series input resistance even when inserting an RC filter circuit for noise suppression



■ Built-in peripheral components save space by reducing the number of external parts

The number of Mounted Parts Comparison: Op Amp Circuit Method vs ROHM's new product

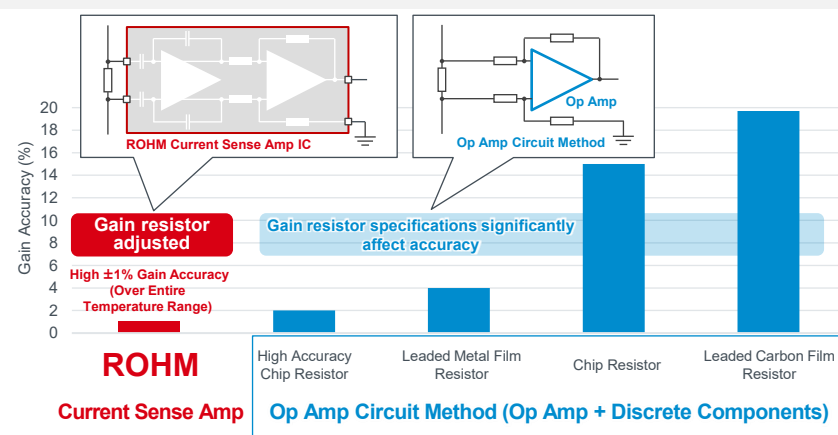


*Example considering realistic placement with component size +0.05mm.
Op amps and current sense amps are SSOP6, resistors / capacitors are 1005 size, and diodes are 1608 size.
Shunt resistors are not included in the calculation for area comparison.

ROHM's BD1421x-LA series of current sense amps enables circuit current detection by simply connecting a shunt resistor

■ High accuracy current monitoring improves application reliability

Gain Accuracy Comparison ($\Delta T=100^{\circ}\text{C}$) : ROHM's CSA vs Op Amp Circuit Method



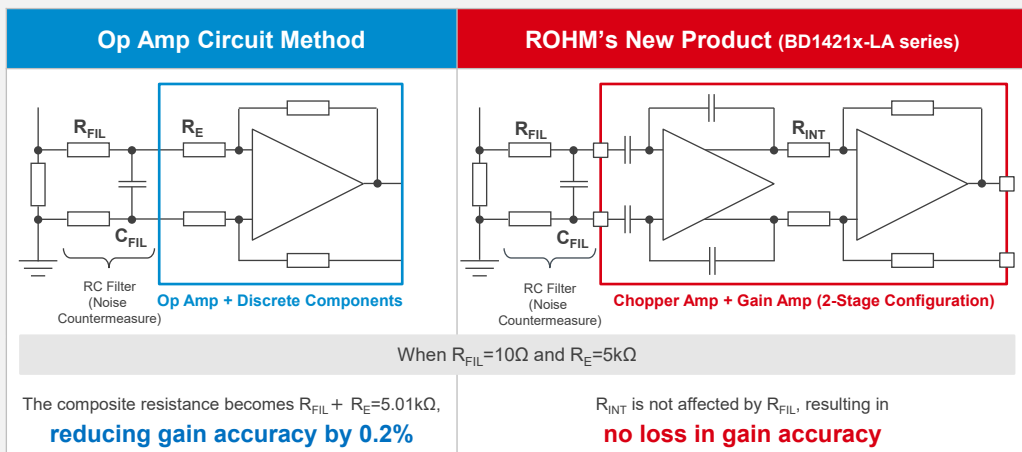
*Current detection accuracy for Op Amp Circuit Method is calculated using the worst-case values for each resistor

Built-in gain resistor significantly reduces gain variation including temperature characteristics → Achieves high $\pm 1\%$ current detection accuracy over the entire temperature range

Chopper-type amp circuit minimizes the number of resources required for input-stage filter design

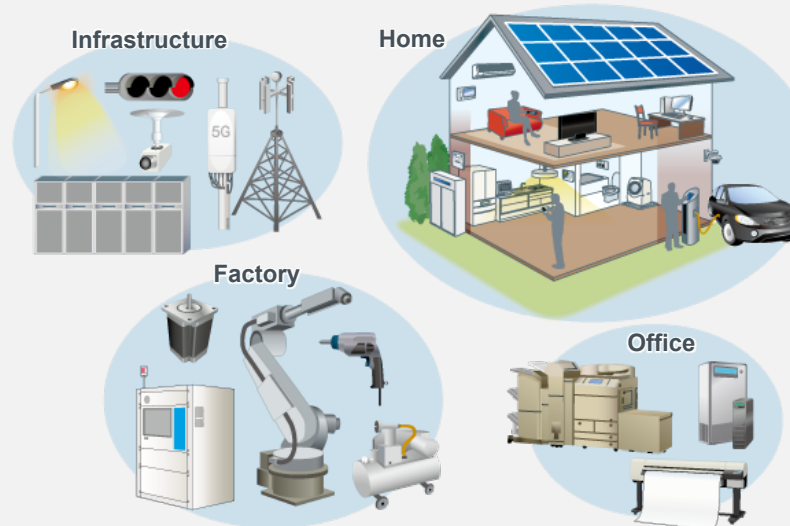
Applications

Comparison of Op Amp Circuit Method (Op Amp + Discrete Components) vs Current Sense Amp



The chopper type amp circuit prevents the gain from being affected by series input resistance

Current sensing for 12V / 24V power supply applications

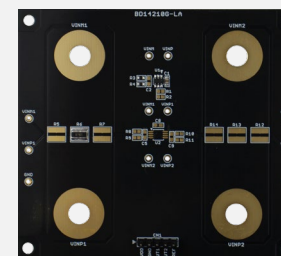


BD1421x-LA series Current Sense Amp Lineup (Guaranteed Long-Term Supply Suitable for Industrial Equipment)

| Part No. | Ch | Supply Voltage V_{DD} (V) | Quiescent Current I_{DD} (μ A) | Common Mode Voltage V_{CM} (V) | Gain (V/V) | Gain Accuracy G_{ERR} (%) | Operating Temperature T_{opr} ($^{\circ}$ C) | Package (mm) |
|------------------------|----|-----------------------------|---------------------------------------|----------------------------------|------------|-----------------------------|---|------------------------------------|
| New BD14210G-LA | 1 | 2.7 to 5.5 | 170 | -0.2 to +26.0 | 20 | ± 1 (Max) | -40 to +125 | SSOP6 2.90x2.80, H=Max 1.25 |
| ☆ BD14211G-LA | | | | | 50 | | | |
| ☆ BD14212G-LA | | | | | 100 | | | |
| ☆ BD14213G-LA | | | | | 200 | | | |
| ☆ BD14215FVJ-LA | 2 | 2.7 to 5.5 | 310 | -0.2 to +26.0 | 20 | ± 1 (Max) | -40 to +125 | TSSOP-B8J 3.00x4.90, H=Max 1.10 |
| ☆ BD14216FVJ-LA | | | | | 50 | | | |
| ☆ BD14217FVJ-LA | | | | | 100 | | | |
| ☆ BD14218FVJ-LA | | | | | 200 | | | |

Evaluation Board: BD14210G-EVK-001

BD14210G-EVK-001 is an evaluation board for ROHM's BD14210G-LA current sense amp



Details available on ROHM's website.

[Quick Link](#)



☆: Under Development Click on the icon to access the product datasheet and the icon to view the datasheet on ROHM's website.

The information contained in this document is current as of February 1, 2023.



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