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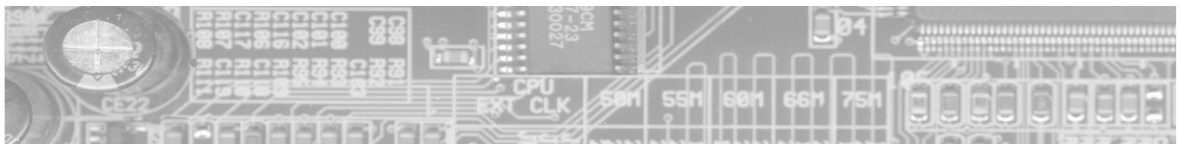
Digital Earth Leakage Current Detector

Tokyo, Japan, June 18th, 2024 — Nisshinbo Micro Devices Inc., a leading provider of innovative semiconductor solutions, is proud to announce the release of its latest product, the NA2201. This state-of-the-art digital earth leakage current detector IC is designed to enhance the safety and reliability of electrical systems by integrating advanced overvoltage and DC current detection capabilities.

The NA2201 is a CMOS-based digital detector IC specifically developed for use in earth leakage current breakers. It features a built-in high-precision 14-bit ADC that converts analogue signals from a Zero-phase-sequence Current Transformer (ZCT) into digital data. This data is then processed to determine if an earth leakage condition exists, subsequently activating an external thyristor when necessary.

One of the standout capabilities of the NA2201 is its selectable earth leakage detection, supporting both Type A and Type AC conditions. It offers a five-time trip-level immediate response feature, which can be toggled on or off as needed, enhancing its adaptability to different safety requirements. Additionally, the IC includes an overvoltage detection function that also caters to neutral conductor open-phase protection, making it a comprehensive solution for preventing electrical faults. A variety of options for operation and safety features is set by three selection pins.

The detector IC is also equipped with individual time delay settings for earth leakage and overvoltage detection, which can be adjusted using external capacitors. This flexibility allows for precise tuning of the delay settings to match specific application needs. Furthermore, the IC can detect DC current, providing an additional layer of protection, which is especially suitable in applications like mode 3 electric vehicle chargers.



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NA2201 Specifications:

- Power Supply: VDD 4.0V to 5.5V
- Operating Temperature: -40°C to 105°C
- Built-in High Precision ADC: 14-bit
- Sinc3 Digital Filter: -3dB Frequency = 150Hz
- Internal Power Supply: VREG = 3.3V
- Earth Leakage Detector Condition:
  Type A / Type AC selectable
- Five times trip level immediate response:
  ON / OFF selectable
- Over voltage detection:
  Correspond to Neutral conductor open-phase protection
- DC current detection
  Individual time delay functions set by an external capacitor:
  Earth leakage detection / Over voltage detection
- Minimum non-operating time: 2 types prepared
- Package NA2201NB: SSOP-16-BD
- Datasheet: NA2201 Consumer version

Availability and Pricing

The NA2201 is now available for purchase, providing an advanced, reliable solution for earth leakage and overvoltage detection in various applications.

More Information about availability, samples and pricing, please visit email: sales.europe@macnica.com.

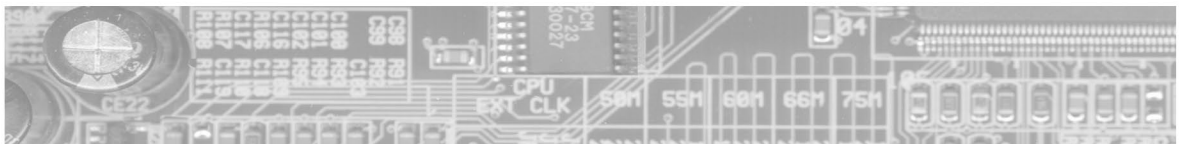
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About Nisshinbo Micro Devices Inc.:



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Established in January 2022, Nisshinbo Micro Devices Inc. is a merger of the former companies Ricoh Electronic Devices Co, Ltd., and New Japan Radio Co, Ltd, both members of the Nisshinbo Group.

The history of the two companies goes back to 1959, resulting in more than 60 years of experience in the electronics industry. Today, it is one of the leading global suppliers of advanced analogue products.

Its portfolio offers a comprehensive range of ICs for Power Management, Supervisory, Operational Amplifiers, Battery Management, RF, Audio & Video, Optoelectronic devices, Motor drivers to name a few. These products enable electronics engineers to design advanced applications for consumer, industrial and automotive markets.

The company is headquartered in Tokyo, Japan, and has development, sales, and manufacturing facilities across the country. In addition, it has regional sales and support offices in North America, Europe, and Asia. For further information, please visit our website: https://www.nisshinbo-microdevices.co.jp/en/

About Macnica ATD Europe GmbH

Macnica's ATD Europe GmbH, (former Macnica GmbH), was originally established in the UK in 2006, and moved to Germany in July 2008, to increase efficacy of its service for European customers.

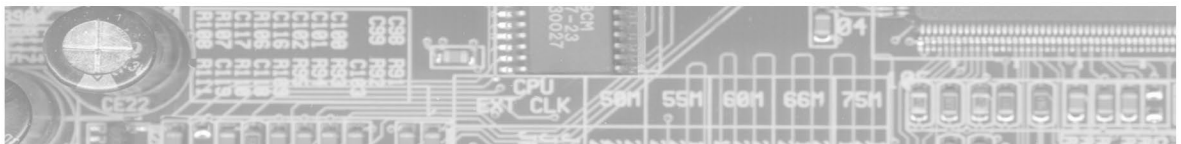
By it's acquisition of the Munich based company Scantec Mikroelektronik in 2014 Macnica Europe formed a powerful semiconductor distribution with headquarter in Ingolstadt and offices in Munich, Regensburg, Milton Keynes (UK) and Warsaw offering an attractive and competitive portfolio of highly sophisticated devices.

Macnica provides end to end support from design-in to production through its global service network to its customers, regardless of the final destination of the product shipment to customers' manufacturing locations.

About Macnica ATD Europe S.A.S.

Founded in 1990 as ATD Electronique, Macnica ATD Europe headquarter offers innovative components dedicated to imaging applications for the European market. Its product portfolio includes: image sensors (CCD, CMOS, InGaAs, Thermal etc.), optics, interface circuits, FPGA & IPs, imaging processors, cables and OLED microdisplays.

It also covers development tools and design services enabling fast and efficient realization of new high-performance camera systems for markets such as machine vision,



medical, life sciences, surveillance, automotive and others. After the acquisition of the company by Macnica Inc. as of October 1, 2020 the company operates under the name Macnica ATD Europe.

About Macnica, Inc.
Macnica was established in 1972 as a semiconductor distribution company headquartered in Yokohama, Japan, and has over 85 sales offices worldwide in eastern Asia, Europe and the USA. Total number of employees is over 3,900 and its consolidated revenue for fiscal 2021 was approximately US$ 7.6 B.

Macnica is famous for having an excellent engineering team of more than 900 application support engineers, IC designers and software developers with strong focus on providing technical support for its customers including custom design services. Macnica is continuing to extend its presence globally by having successful partners in strategic areas in the electronics market.

More information about Macnica: https://www.macnica.com/global/en/home.html.

