02/2023

endrich NEWS

www.endrich.com

SUPPLY CHAIN ACT: QUO VADIS?

Wolfgang Endrich

The Supply Chain Act means that all importers with a headcount of 1,000 or more will be required to engage with their foreign suppliers. For example, in Vietnam, Cambodia, Thailand, to ensure that employees are working under humane conditions in safe workplaces and that a fair salary is paid. Occupational health and safety laws are in short supply!

But if you know the situation in the Far East better, you know that in numerous instances these are almost impossible demands. Suppliers feel that their freedom is being restricted, and in some cases, they also have sub-suppliers, so that it is almost impossible to fulfill the requested information according to the law. It is felt to be improper to publish such company data and to allow strangers to control their own company.

We know, however, that there are very regularly lacks in the compliance with safety regulations and sometimes chaotic conditions exist in the factories', furthermore often famished wages are paid. Of course, these are completely unacceptable conditions for us and our standards. But the local governments probably see things differently.

Perhaps we should look at this situation from the other side: We, that is, the consumers from Germany, but also from Europe or the USA, want low prices, for example in the textile and electronics industries. That's why Apple manufactures its cell phones in the Far East, or why we buy cotton from Kazakhstan and have it worked and even made up there. In other words, we have deliberately shifted production from Europe to the Far East, where it is nice and cheap. And these countries are on the drip of exports and need export income.

Since colonial times, where England, Spain and Portugal, exploited the countries in South America and India, not too much has changed. Our prosperity is at the expense of these supplier countries.

In my opinion, this is called exploitation. Our argumentation, on the other hand, is quite simple: by this transfer of industry to the Far East, we are giving the people who live there an opportunity to earn an income in the first place, thus helping them to avoid hunger, infant mortality, boundless unemployment and hopelessness. But the rights of the women are still limited.

And we appear as good people and demand, for example at the Olympiad in Doha, more rights for the women. Do we want to delight the whole world with our know-it-all attitude?

Because Asia is different! Other religions, very old rites and customs still determine life there, and we should learn to understand and respect that.

Read more on page 2

Continued from page 1

SUPPLY CHAIN ACT: QUO VADIS?

The old teachers of economics like Keynes and others were right about "change through trade". But crises, like Corona and war, were not included. Added to this was the shutdown of air and sea transport. Many containers of Christmas products are still stored in Chinese ports today. And now we feel our total dependency on Far East supplies, such as medicines, raw materials and others.

"Cheapness is just not cool!!!" Politics and business have finally woken up. The "turn off the times" has changed many things.

And what about the supply chain law? The EU had much better recall it. No one will miss this law. Neither is the global economy doing any better.

One thing should become clear to us: we will have to make cuts from the level of living standard we have enjoyed so far because the consequences of previous policies are now becoming painfully clear.

Wolfgang Endrich

NEWS

PLATINUM-CHIP-TEMPERATURE SENSORS

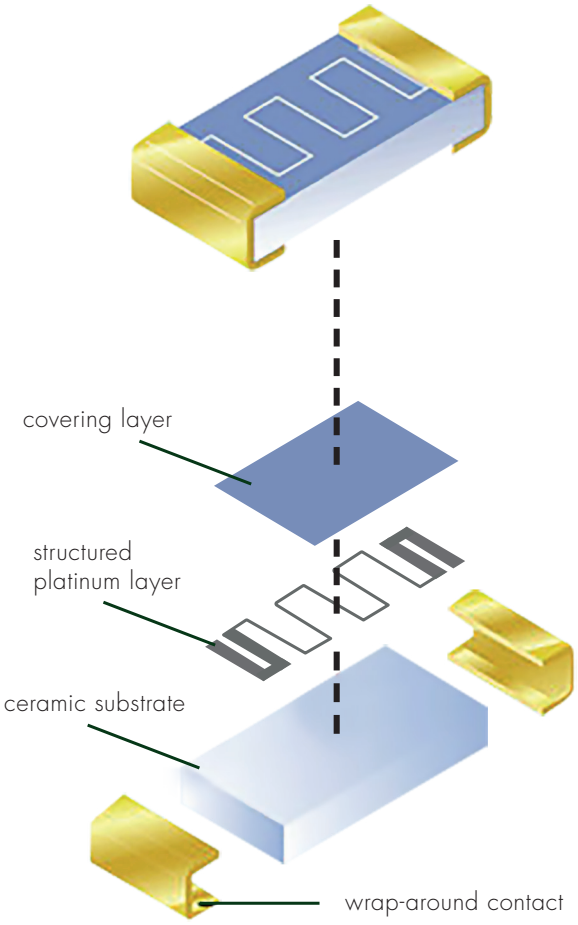
according to DIN EN 60751

Platinum-chip temperature sensors belong to the category of thin-film technology temperature sensors

During the manufacturing of these temperature sensors, a thin layer of platinum is deposited on a substrate of ultrapure aluminum oxide ceramic and structured in a meander-style pattern.

The temperature sensors are based on a temperature-dependent resistance, the curve and admissible tolerance of which are defined in the international standard IEC 60751:2008. The thin film technology used enables the production of particularly small and robust design types. The favorable, linear characteristic curve, the wide temperature measuring range, and high measuring accuracy, together with outstanding long-term stability, make these standardized temperature sensors the ideal choice.

The sensors are delivered in belt packaging in standard rolls. The temperature sensor is available as a wrap-around contact (type PCS) or with one-sided contact (type PCF (flip chip)) for "face-down installation". The flip chip types (see Fig. Type PCF...B) can be provided with a complete solderable nickel/gold metal layer on the rear/underside. This enables direct thermal contact with another body via a solder connection.



APPLICATIONS

- E-mobility
- Sensor solutions
- Temperature probes
- PCBs

FEATURES

- For temperatures from -50 to +150 °C (-70 to +250 °C)
- In accordance with DIN EN 60751, nominal values Pt100, Pt500 and Pt1000
- Tolerance classes F0.1, F0.15, F0.3 (standard) and F0.6
- SMD design type 1206 (3216M) and 0805 (2012M)
- Gold-plated nickel solder contact
- Solderability according to IEC / DIN EN 60068-2-58
- Belt packaging according to DIN IEC 60286-3
- High load capacity

JUMO

Contact for information: Mr. Wolf · **phone:** +49 7452 6007-23 · **e-mail:** t.wolf@endrich.com

DEVELOPMENT OF "UPWARD-LIGHTING MULTICOLOR LEDS"

Small, high brightness LED packages that have an improved color mixing property

Enabling the use of a wide variety of expressions related to products

Citizen Electronics Co., Ltd (Head Office: Fujiyoshida City, Yamanashi Prefecture.President: Sekiguchi Kanetaka) has developed upward-lighting multicolor LEDs in the "CL-V501 Series," that have realized a better color mixing property as well as being small and high in brightness. Shipment of samples is expected to start from October 2021, and shipment of mass production is expected to start from January 2022.

Upward-lighting multicolor LED

Product name: CL-V501 Series
Type: Upward
Size: W 1.6 mm x L 1.4 mm x H 0.55 mm
Applications: Illumination and indicators for game devices, keyboards for personal computers, home appliances, hobby goods, displays, ambient lighting for automobiles, colored lighting
Date of sale: Shipment of samples is expected to start from October 2021, and shipment of mass production from January 2022.

Background for development

Multicolor LEDs have three dies of RGB (Red, Green, and Blue), which are light's primary colors, in one package. That is why they can generate various colors including white by mixing the colors and are used for illumination or as indicators in many kinds of devices such as digital devices. In recent years, applications for illumination in game devices, keyboards for personal computers and amusement devices have been expanding. The number of devices that contain a lens and light guide to create a complicated lighting expression has increased. With this background, smaller, high brightness LEDs are required, and good color mixing properties when more than two dies are lighted simultaneously, is an important factor so as not to damage the design and functionality of the device. Through our unique packaging technology based on high-density packaging, we have realized a high color mixing property which conventional packages were unable to achieve. Downsizing and high brightness is also achieved enabling customers to use a wide variety of expressions they require.

CITIZEN

Contact for information: Mr. Große · **phone:** +49 7452 6007-953 · **e-mail:** p.grosse@endrich.com

NEWS

Main characteristics – Natural white color realized by high color mixing property

White color generated by lighting RGB dies in conventional multicolor LEDs had poor color mixing property, and it was difficult to use as white color. Thus, in some cases, RGBW LED was used, in which white (W) LED is added to RGB. This solution makes the LED package larger and circuit design of the device complicated and was expensive. However, by developing the composition of raw materials and adopting a new manufacturing method, we have succeeded in controlling directivity in the device itself. The natural white color is realized with this high color mixing property. As the light source does not generate color breakup, design is improved as well to meet various applications. Even in cases where a lens and light guide plate are used, it is easier for customers to create designs because the light source itself has color mixing.

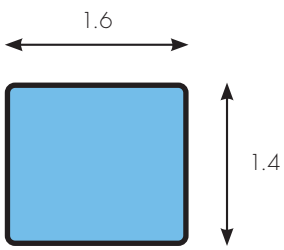
NEW PRODUCT (CL-V501)	CONVENTIONAL PRODUCT (CL-341)
Image of color mixing	
	
Real picture taken through a lens	
No color breakup is generated when RGB dies are lighted simultaneously. Natural white color can be emitted.	Color breakup is generated when RGB dies are lighted simultaneously. Color mixing property is too low to use as white color.

Both high-brightness and small size are realized, and luminous efficacy per unit area is doubled

We have further developed our high-density packaging technology to achieve a small package with good color mixing properties. Compared with our conventional product, area of the product is reduced by 30%, and luminous area is reduced by 50%. This downsizing contributes to space-saving of the mounting area of the device, and the doubling in luminous efficacy per unit area can reduce energy consumption.

1 New product CL-V501

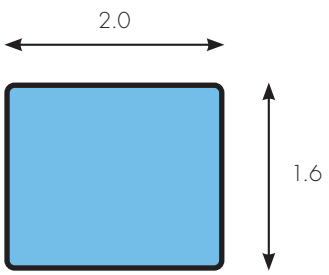
W 1.6 mm x L 1.4 mm = Mounting area is 2.24 mm^2
(Luminous area is 1.34 mm^2)



1 New product
(CL-V501)

2 Conventional model CL-341

W 2.0 mm x L 1.6 mm Mounting = area 3.20 mm^2
(Luminous area is 2.62 mm^2)



2 Conventional model
(CL-341)

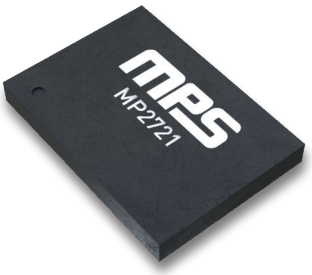
CITIZEN

Contact for information: Mr. Große · **phone:** +49 7452 6007-953 · **e-mail:** p.grosse@endrich.com

SINGLE-CELL NVDC BATTERY CHARGER FAMILY INDRODUCTION

MP2720: 2.5A, Single-Cell NVDC Buck Charger

MP2720A: 2.2A, Sing-le-Cell Buck Charger with 15 mA Termination Current

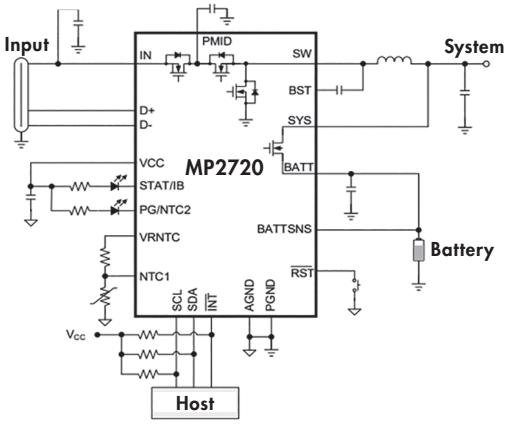


MP2721: 5A, Single-Cell NVDC Buck Charger

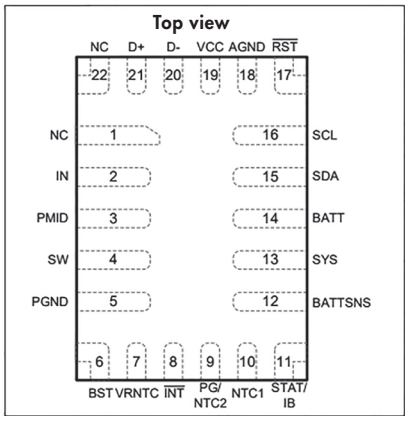
MP2722: 5A, Single-Cell NVDC Buck Charger with Integrated USB Type-C DRP Detection

The new MP272xx Battery Charging Family is a switch-mode battery management device for single-cell Li-ion or Li-polymer batteries. The narrow-voltage DC (NVDC) power management structure provides a low impedance power path, that optimizes charging efficiency, reduces battery charging time, and extends battery life during discharging. The device's input source type identification algorithm supports USB battery charging specification 1.2 (BC1.2) and non-standard adapter detection. The I2C interface offers complete operating control, including charging parameter configurations and status/interrupt monitoring. The MP2720 supports a fully customizable JEITA profile with configurable temperature windows and actions.

Typical application



Package reference



QFN-22
(2.5 mm x 3.5 mm)

APPLICATIONS

- General ≤15W USB Applications
- Bluetooth headphones
- Bluetooth speakers
- Point-of-Sale (POS) terminals
- Portable cameras
- EVKT-MP2720 are available

FEATURES

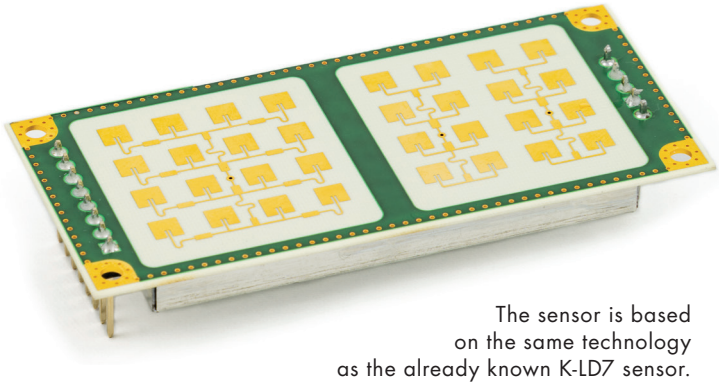
- **MP2720xx 2.5A**, Single-cell NVDC buck charger
- **MP2720Axx 2.2A**, Single-cell buck charger with 15 mA termination current
- **MP2721xx 5A**, Single-cell NVDC buck charger
- **MP2722xx 5A**, Single-cell NVDC buck charger with integrated USB type-C DRP detection

NEWS

NEW RADAR SENSOR FROM RFbeam

As a logical extension of its 24 GHz and 61 GHz radar sensor portfolio, RFbeam unveiled its latest development at Electronica 2022 in Munich

K-MD7 24 GHz digital 2D radar transceiver



The sensor is based on the same technology as the already known K-LD7 sensor.

A wide range of filter functions and parameters help optimize sensor functionality for different application requirements.

No special knowledge of analog or digital signal processing is required, which speeds up the time-to-market for new developments.

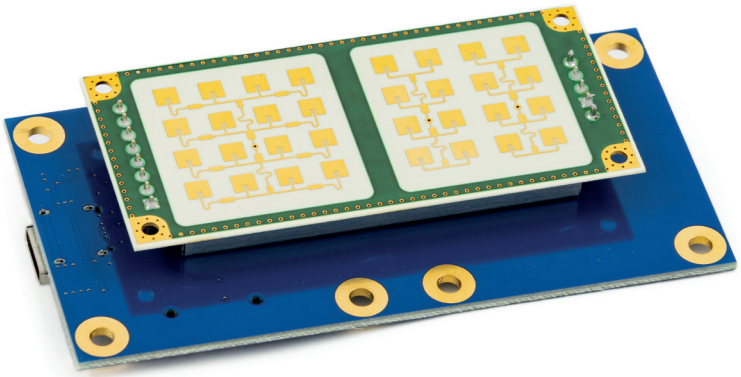
In addition to the sensor, an evaluation kit is also presented, which enables convenient parameterization and evaluation of the sensor in the usual RFbeam manner.

FEATURES

- Speed, distance, and angle measurement
- Detects moving objects up to 200 km/h
- FSK signal processing with tracking included
- Multi-target tracking for up to 8 moving objects
- Target list output over serial UART interface
- Wide operating voltage range of 3.2 to 5.5 V
- 34 x 34-degree beam pattern
- Detection distance: 50 m (persons) / 150 m (cars)

The K-MD7 is an evolution of the successful K-LD7 with a narrower antenna and more processing power. This allows higher detection distances and tracking of multiple objects up to 200 m.

K-MD7 evaluation kit



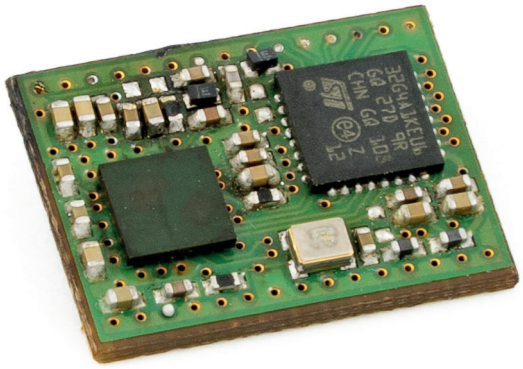
First evaluation kits will be available from Q2 / 2023

RFbeam

Contact for information: Mr. Deuschle · **phone:** +49 7452 6007-929 · **e-mail:** w.deuschle@endrich.com

NEW RADAR SENSOR FROM RFbeam

V-LD1 61 GHz FMCW radar distance sensor



RFbeam unveiled its latest development at Electronica 2022 in Munich, Germany. A small and low cost 61 GHz FMCW distance measurement sensor.

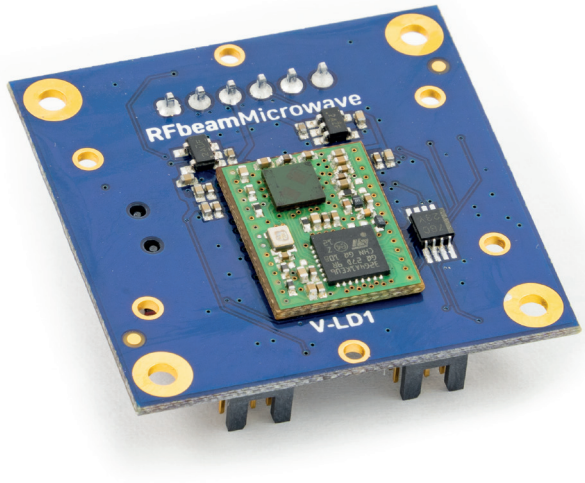
No special knowledge in analog or digital signal processing is needed to adapt the module to different applications resulting in a fast time to market. Transmit frequency and sweep bandwidth are controlled internally and a selection of settings is available to adapt to your application requirements.

The beam width of the module itself is 80 x 80 degrees. However, RFbeam also offers an evaluation kit in combination with a plastic lens that focuses the beam to 6 x 6 degrees, which is perfect for tank leveling applications.

FEATURES

- Precise distance measurement with mm accuracy
- Fully digital with distance output over serial interface
- Ultra Small SMD form factor (12 mm x 16 mm)
- Single 1.8 V power supply for simple integration
- Low power mode with lower duty cycles
- Usable as robust touchless switch
- Perfect for simple tank leveling applications

V-LD1 evaluation kit



First evaluation kits will be available from Q2 / 2023

RFbeam

Contact for information: Mr. Deuschle · **phone:** +49 7452 6007-929 · **e-mail:** w.deuschle@endrich.com

HEADQUARTERS

endrich Bauelemente Vertriebs GmbH
P.O.Box 1251 · 72192 Nagold, Germany

T +49 7452 6007-0
E endrichnews@endrich.com
www.endrich.com

SALES OFFICES IN EUROPE

France
Paris:
T +33 1 86653215
france@endrich.com

Lyon:
T +33 1 86653215
france2@endrich.com

Spain
Barcelona:
+34 93 2173144
spain@endrich.com

Bulgaria
Sofia:
bulgaria@endrich.com

Austria & Slovenia
Gmunden:
+43 1 6652525
austria@endrich.com

Romania
Timisoara:
romania@endrich.com

Hungary
Budapest:
T +36 1 2974191
hungary@endrich.com

Switzerland – Novitronic
Zurich:
T +41 44 30691-91
info@novitronic.ch