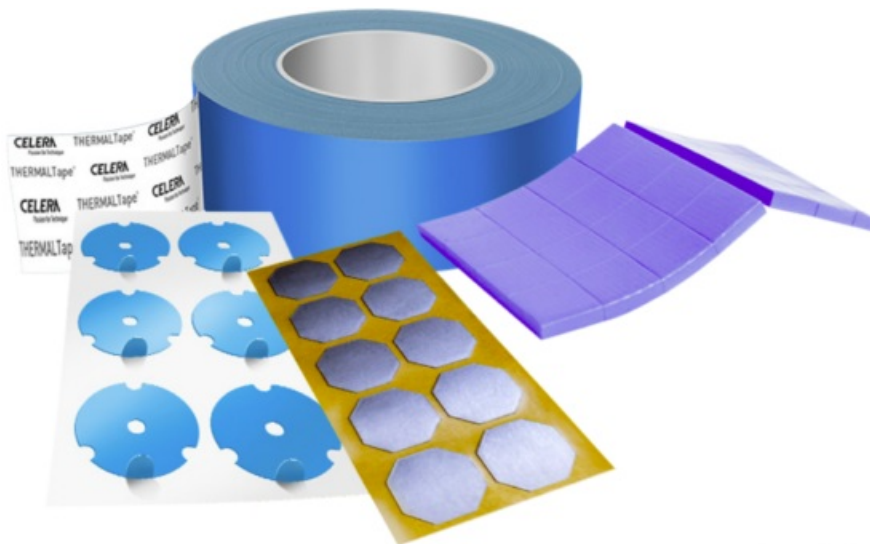


endrich FlexGRAF Thermal Interface Materials Instructions

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Immigration – an unsolved problem!



Lived from 1940 to 1945 with my parents in Sudetenland, today's Czech Republic.

After the war ended

the so-called "Imperial Germans" were more than unpopular and became distributed. Arrived in West Germany, Eastern refugees were distributed among communities. The reception in the West German communities that are suddenly on their own. Having to forego living space was not welcoming. There was at that time the so-called "housing management", i.e. all free-standing rooms were confiscated and taken with them occupied by refugees.

But since the state had hardly any financial resources, the so-called "load balancing" was invented, i.e., everyone Homeowner received a compulsory mortgage on his house pressed – completely irrelevant whether he agreed or not.

The first "SOLI".

At that time, Germany was ruled by three military governments in three zones (English, French and American). More than twelve million people were killed within a few months from the former German Reich territories in Poland and the Czech Republic resettled. Because people are out of time who had learned from the dictatorship, issued public regulations without complaint accepted, an assimilation process could take place slowly, but still successfully implemented in the communities. Today we have the problem with immigrants who come from Blanker Hardship and their sometimes terrible living conditions escape, look for a new home. The language problems and above all our jungle of paragraphs hinders this extreme sedentary behavior. Among these people, they are forced to seek protection and a home with us. There are many doctors, lawyers, craftsmen, even simple ones. Workers and they would help us with the current shortage to significantly alleviate the labor shortage.

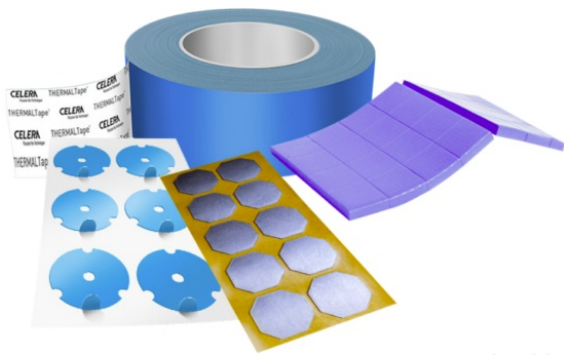
Integration is undoubtedly made more difficult by the lack of knowledge of German and the partly cultural ones. Differences. Why isn't it possible to keep everyone fresh? Immigrants take a crash course in German as well as about our legal system, our customs, values and customs to have a mandatory visit?

Because they decided to leave their homeland and a new life in a safe democratic country start, this would be reasonable. The consequences of immigration are putting our state in an extreme financial situation. We have to use our tax money for these people to finance life initially. Most would prefer to earn money through their own hands.

The state would receive income tax and social security contributions to the social security funds and we would certainly have more satisfied people, new citizens. The baby boomers are retiring and there are currently not enough newborns. We become one people of the elderly without immigration. I wonder where the minds of our elected representatives finally understand that without immigrants we will have a problem in the future that we can only do by integrating these new citizens can solve. Do we want a Germany with retirement homes? without nurses and factories without workers?


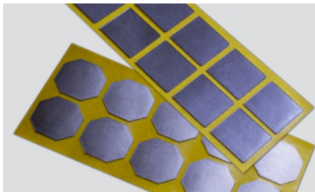


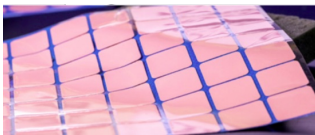
Kind regards, Wolfgang Endrich

THERMAL INTERFACE MATERIALS FOR LED APPLICATIONS



Celera has the most suitable solution for the thermal profile of your application.

Overheating at LED junction point is the main responsible for failures associated with durability, reliability and luminous performance. Celera has a wide family of solutions in thermal Interfaces to ensure the appropriate thermal management of LED Fixtures and Luminaires.

YOUR APPLICATION	THE CHALLENGES	OUR SOLUTIONS	
	Very high thermal load generated by super high/high power LED packages	Flex GRAF Thermally conductive graphite sheets	
		FORM APad Form-in-place gap pads	
	High/mid thermal load generated by high/mid power LED packages	Flex GRAF Thermally conductive graphite sheets	
		THERMAL Tape Thermally conductive double sided tapes	
	PCB attachment to aluminum profile and mid/low thermal load generated by LED packages	THERMAL Tape Thermally conductive double sided tapes	
	Very high/high thermal load generated by COB packages and low clamping force between PCB and heat sink	COOLPad Low compression silicon pad	
		FORMAPad Form-in-place gap pads	

WCF SERIES WIDE TERMINAL CHIP R

WCF series is a lineup of high rated power and compact size chip resistor from Prosperity Dielectrics Co. (PDC). During operation, resistors generate heat within the resistive element ($P=I^2 \cdot R$). The rated power of a chip resistor is determined by its capacity to efficiently dissipate this heat to both the PCB and the surrounding environment. The heat dissipation capability is, among other factors, contingent upon the ratio of the chip size to the terminal area. A comparison of two resistors of identical chip size reveals that the resistor with wide side terminals exhibits superior heat dissipation compared to the resistor with short side terminals. This phenomenon conveys various advantages to the resistor:

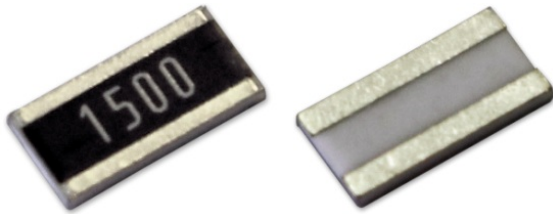
1. Increased power density without requiring additional PCB space.

2. Reduced PCB space through the utilization of smaller resistor package sizes or a decreased number of components.
3. Augmented safety margin and diminished aging effects.

In applications subjected to a wide ambient operating temperature range, careful consideration is essential when using larger chip sizes of resistors.

This caution arises from the disparity in the Coefficient of Thermal Expansion (CTE) between the resistor and PCB, which can induce mechanical stress and lead to terminal cracks after prolonged usage.

Generally, chip resistors with wide side terminals facilitate downsizing, mitigating the risk of terminal cracks. Even in larger sizes, resistors with wide side terminals exhibit increased robustness against stress induced by CTE due to their larger soldering area.



Series	L(mm)	W(mm)	T(mm)	Size Code	Rated Power (70deg.C.)	Max. RC WV	Avail. T CR	Avail To I.	Resistance value Range
WCF06	1.60 ± 0.20	3.20 ± 0.20	0.6 ± 0.15	0612	1 W	200 V	+/- 100 ppm +/- 200 ppm	+/- 1 % +/- 5 %	1 Ohm – 1Meg. Ohm
WCF25	3.10 ± 0.20	6.30 ± 0.20	0.6 ± 0.15	1225	2 W	200 V	+/- 100 ppm +/- 200 ppm	+/- 1 % +/- 5 %	1 Ohm – 1Meg. Ohm

APPLICATIONS

- Power supplies
- Industrial application (e.g. for ECU boards)
- Automotive (e.g. for xEV Inverter)
- General purpose applications

FEATURES

- High power rating to 2 W and compact size
- High reliability and high precision (1 %)
- Compatible with wave and reflow soldering
- Suitable for lead free soldering
- Meet AEC-Q200, RoHS compliant & Halogen Free

ULTRA-HIGH RANGING FREQUENCY LASER SENSOR BASED ON VCSEL

Industries have put forward new requirements on ranging distance and accuracy. If the deviation cannot be controlled within a certain range, or the measured distance cannot meet the actual needs, the related works will

not be able to carry out smoothly, even cause irreparable loss.

As a supplier of, Brightlaser laser sensors provides a serie of laser ranging products from several meters to tens of kilometers.

Laser sensor series LiDAR of Bright Laser adopts independent intellectual DTOF (Direct Time Of Flight: measures the time between the sending of an optical pulse and the arrival of the reflected light pulse).

Technology and high-performance high-pulse power VCSELs (vertical-cavity surface-emitting lasers: are superior to LEDs when it comes to short switching times and a narrow optical spectrum—making them the best choice for time-offlight (ToF) applications). Devices and high-quality optical design, advanced optomagnetic design and high-performance, high-precision timing circuit, high measurement frequency, small size, and realization of 360° two-dimensional scanning of distance; the infrared high-power pulsed VCSEL laser is used, which is invisible to the naked eye and safe for the human eye, and has strong antiinterference ability. It can be widely used in sweeper/robot navigation and obstacle avoidance.

As well known, ranging frequency directly determines whether robot be able to generate a map quickly and accurately. Brightlaser's scanning and ranging sensor uses high-quality VCSEL light source and algorithm system. The ranging frequency is adjustable and has two options, up to 14000 times per second. It is an incredibly competitive product in the industry, on account of cost-efficiency and high-performance.

TRAFFIC FLOW DETECTION	ROBOT APPLICATION	LASER RANGE FINDER SENSOR A4
		

APPLICATIONS UP TO 100m

- Sweeper navigation and obstacle avoidance
- Environmental scanning and 3D modelling
- Obstacle detection and evasion of security
- Regional security
- Robot navigation
- Vehicle ADAS



LS-0905D-150M-ED-XA4 range 150m 200-1000Hz



S-0905B-600M-AM-CA2 range 1-600m

APPLICATIONS MORE THAN 100M

- Traffic light control
- Positioning sensing
- Electrical cable monitoring
- Dam deformation monitoring
- Hill slope monitoring
- Range monitoring
- Traffic flow monitoring
- Stuff position monitoring



LS-0905B-001K-AM-CA2 range 1-1000m 5Hz



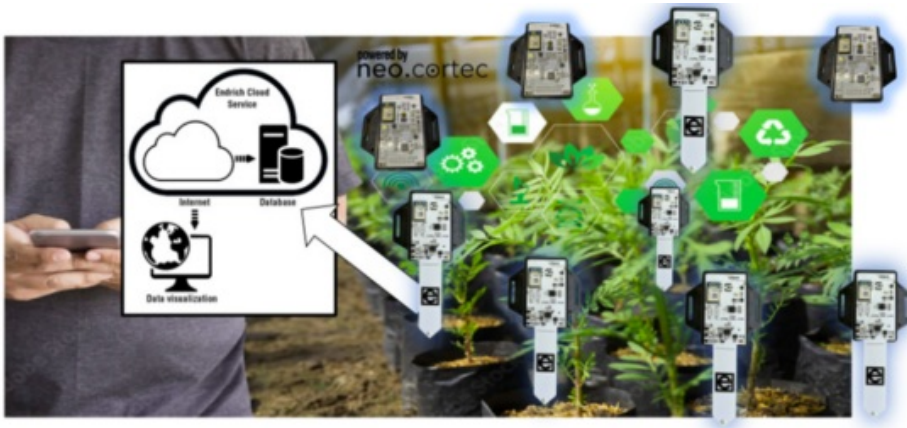
LS-06XXC-0X0M-Am-EA6 635nm Range 60m 5-10Hz

As well known, ranging frequency directly determines whether robot be able to generate a map quickly and accurately. Brightlaser's scanning and ranging sensor uses high-quality VCSEL light source and algorithm system. The ranging frequency, up to 14000 times per second. It is an incredibly competitive product in the industry, optical communication and transportation.



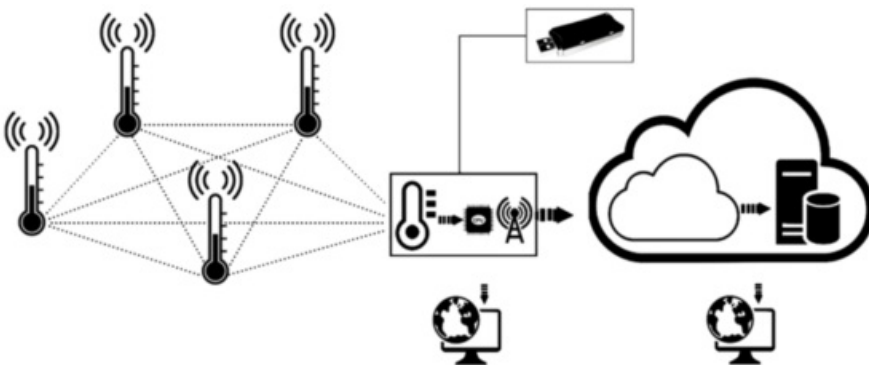
Single Line Scanning Lidar LS-0940H-00XM-AC-FX9

SOIL MOISTURE MEASUREMENT USING AD-HOC LOCAL NETWORK AND NB-IOT TECHNOLOGY.



An interesting field of use

Soil moisture detection is one of the key elements of environmental monitoring and agricultural and horticultural IoT solutions. It involves measuring the amount of water in the top layer of soil, which directly affects plant growth, irrigation strategies and our water conservation efforts. A variety of methods are used to detect soil moisture, from traditional techniques such as gravimetric measurements to modern technologies such as capacitance sensing or TDR (TDR). Accurate soil moisture sensing helps optimize irrigation schedules, prevent over- or underwatering, promote sustainable farming, and ultimately increase agricultural productivity while minimizing water wastage. Supplementing traditional sensors and control electronics with modern wireless communication units and integrating the IoT is a popular and interesting task, which really makes sense if we want to get an idea of the soil moisture conditions in large plantations using computational methods from the data of many sensors. During his business trip to South America this summer, the author spoke with representatives of several companies where the lack of coverage of cultivated areas with telecommunication services makes it impossible or uneconomical to use, for example, smart sensors with a direct sensor-cloud connection (GSM, SAT, etc.). In such cases, a solution may be to organize the soil moisture sensors into an ad-hoc wireless network that uses renewable energy sources, uses low consumption modems, which can cover a large area, and provide this network with a single connection to the Internet to promote cost-effectiveness. The used gateway (one piece) can be a device operating in a property with Internet connection on the edge of the area, a gateway with SAT connection, which is organically integrated into the smart sensor mesh network.

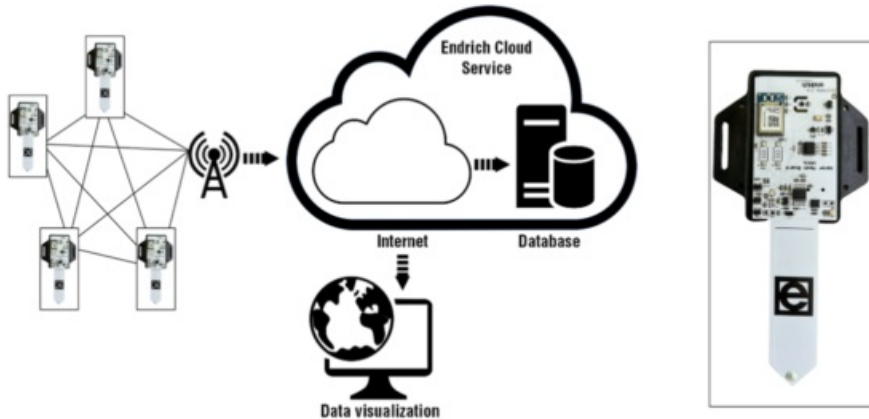


The E-IOT platform combined with a low-power ad-hoc local area network.

In this case, we call for a low-consumption ad-hoc local sensor network solution, for example, in our case we can use the NeoCortec Neo.Mesh protocol presented earlier. A large number of smart sensors can be connected with ultra-low power consumption to a local, sub-GigaHertz wireless network, where a single data concentrator/gateway with an Internet connection takes care of delivering the data to the Cloud DB via the cellular network, for example using LTE-M or NB-IoT, even with satellite or wired connection. This modular sensor network infrastructure offers multi-point-to-point communication to the cloud through the LPLAN-LPWAN/WAN gateway. In our previous article, we described the characteristics of this communication technology in detail, and now we would like to write about the concept that was newly developed for agricultural tasks

E-IoT wireless soil moisture transmitter

As an experiment, we created a sensor that works on the capacitive principle, which transmits a signal proportional to the moisture of the topmost layer of the soil through the neo.mesh network. As we discussed earlier, the “mesh” of sensors placed outdoors at a distance of up to a hundred meters from each other is suitable for covering relatively large areas due to the applicability of a large number (thousands) of nodes without the data being lost, since each sensor also acts as a repeater and finds the data at the same time the way to the target gateway. During the day, the integrated solar panel provides energy for the electronics of each node, while at night, the rechargeable battery ensures continuous operation.



NJW1871A-T1 MOSFET DRIVE SWITCHING REGULATOR IC

The NJW1871A is a MOSFET drive switching regulator IC designed for boost/flyback converters with a wide operating voltage range from 4.5V to 40V. Its internal N-channel MOSFET driver circuit ensures high-efficiency driving, making it ideal for applications requiring high output currents. This IC is equipped with protection features, including pulse-by-pulse overcurrent detection to limit the switching current during overload, with automatic recovery in the event of load anomalies. In addition, its support for high transmit frequency enables avoidance of AM band noise and facilitates the use of small inductors. Overall, the NJW1871A is suitable for boost/flyback applications such as automotive and industrial equipment.

APPLICATIONS

- Consumer Electronics
- Industrial Instruments
- Boost converter for small to middle range power supplies



FEATURES

- Input Voltage Range from 4,5V to 40V
- Operating Temperature Range from -40°C to 125°C
- **Supply Current:** Typ. 1200 μ A / Max. 1700 μ A
- **Standby Current:** 10 μ A/ Max. 20 μ A
- **Output Voltage Accuracy:** $\pm 1/2$ %

- **Oscillator Frequency:** 1000kHz to 2000kHz
- **Package:** MSOP10(VSP10)
- Current Mode Control / PWM Control
- Standby Function
- Soft Start (Fixed 20ms typ.)
- Over Current Protection (Hiccup)
- Over Voltage Protection
- Thermal Shutdown

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References

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