ECOMAL Electronic Components and Logistics

INSIGHTS

Edition 2/2007

Continuous improvement...

Ladies and Gentlemen,

In this edition:

"Distribution" is not new topic within the electronic business, and especially in terms of providing goods.

The important function of the distributors as inter-mediaries between manufacturers and users is indisputable. Whilst the manu-facturer covers very large demand quantities with a small number of customers, the distributor offers an abundance of services in order to commit specifically customer wishes.
In particular with the product portfolio, technical support, logistics and services there are substantial differences. The expansion of the existing lines of ECOMAL proceeds very carefully and we see ourselves as a distributor with highly specialised authority.

With the now signed distribution contracts between ECOMAL and our dynamic partners ELMOS and UPEC we go a further step into the correct direction. With ASSP's and high luminous LED's we give our customers further reasons to decide for ECOMAL in the future.

We have taken care of the important task of Product Changes Notification (PCN) with expert knowledge and in the future all of our customers will receive the relevant PCN electronically. To ensure that all information is provided such as customer article code the circle closes immediately with information from the manufacturer over to ECOMAL and to the end user.

We intend to work purposefully on further service with the intention of listening to the individual needs of our customers, so that in the future the distribution offers a much better value to our customers.

Yours truly Thomas Baumann
Director IT and logistics

Three, Two, One...

IR® PCS-products from now on with ECOMAL

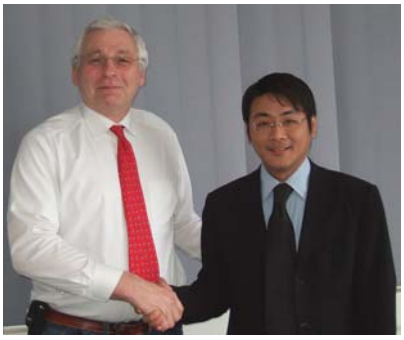
Since April this year the International Rectifier® "Power Control Systems" (PCS) section was taken over by VISHAY. The portfolio includes Diodes (Fast, Standard, Schottky, Ultrafast) Rectifiers, High Voltage Planar MOSFET's, Power Diodes and Thyristors, as well as the so-called Power Modules including combinations of IGBT's, Power Diodes, MOSFET's and Thyristors. With the type designations, technical data, markings of the products there are no changes.

The newest acquisition of Vishay, supplements the portfolio of ECOMAL excellently. Particularly for applications such as lighting, AC/DC, DC/DC, motor controls, welding engineering and UPS's our customers now have access to a complete assortment of discrete semiconductors, passive elements and electro-mechanics.

Let there be light

ECOMAL introduce a new franchise partner UPEC Electronics

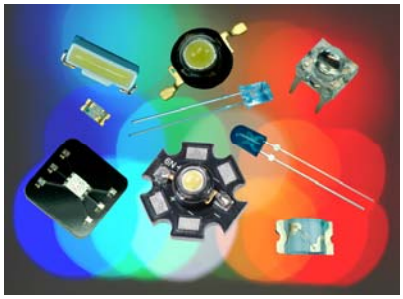
"The future in lighting technology belongs to power LED's" according to Ferre Tan, Assistant Vice President of UPEC. An important point of view when one considers that the worldwide annual growth of power LED's is 20% to 25%.



Martin Behlke, ECOMAL and Ferre Tan, UPEC

Now creating new products is not simply setting an LED on a mounting plate but in most cases a more intensive view must take into account parameters such as thermal and optical behavior as these count equally as electrical and mechanical layout. With its very strong development team, UPEC is in a position to offer innovative LED solutions.

We can offer IP68 approved, customised LED's which work without heatsink, DX512, PWM or I^2C-interfaces, metal core PCB's or simply FR4-materials.



Among the products of UPEC are LED components and LED modules, which are found in worldwide application's such as automotive, consumer, backlighting and general lighting applications.

Certificates according to ISO 9001:2000, ISO 14000, TS-16949 (Automotive approval) and Philips VAT534 (CE Level) are available.

Thus reason enough for ECOMAL to complete its already existing portfolio of standard LED's now also with high power LED's from a dynamic and innovative LED manufacturer.

Within the range of the LED components UPEC ranks among one of the prominent manufacturers for high power LED's as well as PLCC LED's. There are one colored as well as multi colored versions.

UPEC Electronics Corporation is the market leader in the LTCC ceramics housing technology, which permits to group a number of LED's in order to obtain an unusually high illuminating intensity with small dimensions.

By the way **LTCC** stands for **L**ow **T**emperature **C**o- fired **C**eramic and is a breakthrough concerning thermal performance with very high lifetime and reliability of the LED. Thereby grouping of chips are possible in one housing, which permits very high luminous intensity in smallest case dimensions.

The type **UE-HP845NW0-1XT** glare white light (6000K) with 150 Lumen at 700mA.
Dimensions of 8.4mm x 8.4 mm x 0.87mm (W x L x H). The LED's are in white, in RGB and in Monochrome from 1W thru 10W available.

All LTCC- advantages at a glance:

- High luminous flux with small dimensions
- Superior thermal power for improved reliability
- Long lifetime >> 50.000 hours under retention of the high luminous intensity
- RoHS compliant and RoHS solderable
- Customised dimensions, forms and configuration available

Core competence

Inductives – The construction is important !

Powerful, place and energy saving solutions are first choice in final products such as power supplies and motor controls of the current and next generation. Inductors, often hardly noticed, are confronted with large requirements in applications as energy stores or filters. Sophisticated construction and the maximum use of the core material is decisive for small electrical losses.

VISHAY DALE with the **IHLP series** offers a lead frame welded coil with a mixture of iron powder and high temperature adhesive. The advantages are clearly obvious. Very high values of saturation, followed by a rated current up to 60A in package size 5050 with the dimensions 13mm x 13mm x 6,5mm (W x L x H). The construction isolates the iron grains by adhesive. Thus eddy currents are avoided and losses are not possible. Electromagnetic interferences are effectively prevented. This is in particular with POL (POINT OF LOAD) applications, thus voltage supply directly at the consumer, an important aspect.

Predominantly with DC/DC converters where occasional energy is stored in inductance, the high effectiveness of the IHLP attracts attention to oneself.
The stored energy within the magnetic field is calculated as follows:

$W = ½ L \times I^2$

If you would like to store more energy in the coil it is clearly better to increase the rated current rather than the nominal inductance.

To that already broad IHLP range from the package size 2525, 4040 and 5050 now the smaller brother IHLP1616 with the dimensions 4.1mm x 4.5mm joins additionally.

A further highlight is the extension of the SMD series with dimensions above the largest version IHLP-5050, a high temperature material up to +155°C as well as a leaded version as alternative to the conventional toroids are planned.

Characteristics:

- Low heating due to lowest ohmic resistance
- Frequency range up to 5.0 MHz
- Shielded construction
- Customized inductive values up to 500µH (IHLP-5050FD) possible
- High pulse capabilities up to 5 times of the rated current

Type	Shape	Dimensions (L x W) in mm	Height in mm	Inductive range in µH	Rated current in A
IHLP-1616	AB	4.5 x 4.1	1.2	0.047 - 2.0	2.75 - 15.0
	BZ		2.0	0.01 - 4.7	2.0 - 12.0
IHLP-2525	AH	6.9 x 6.5	1.8	0.1 - 4.7	3.0 - 18.0
	BD		2.4	0.1 - 10.0	2.5 - 30.0
	CZ		3.0	0.1 - 15.0	3.0 - 32.0
	EZ		5.0	0.1 - 10.0	3.0 - 33.0
IHLP-4040	DZ	10 x 10	4.0	0.19 - 2.2	13.0 - 44.0
IHLP-5050	CE	12 x 13	3.5	0.1 - 10.0	7.0 - 43.0
	EZ		5.0	0.1 - 10.0	9.0 - 55.0
	FD		6.5	0.1 - 10.0	13.0 - 60.0

Wary bodyguards

Diodes for efficient protection against electrostatic discharge (ESD)

The effect of electrostatic discharge (ESD) has everyone of us already felt at the own body. Due to the tribo-electricity (Tribo electrical effect) humans are constantly electrically loaded during the course of motion. During the contact of e.g. the shoe with the floor, the distance between the two surfaces within the range of some nanometers and it comes to the charge carrier exchange due to the different energy levels of both materials. One of the materials loads up itself positiv, the other negative, thus a voltage come into existance.

After the separation of the two surfaces (materials) the distance is some decades higher, so that some millivolts are transformed into hundred or thousand Volts.

If the „uploaded" person touches a grounded, electrically conductive object such as computers or devices where wires get plugged in, then it comes to a hop of electrons from humans to the electronics. The quantity of electrons or amperes depends on the charge quantity of Q and the capacity C of both bodies and/or materials.

Electronic elements such as semiconductors can be destroyed by this discharge process due to overvoltages and/or overcurrents. Additionally ESD disturbs communication in electrical devices and falsifies important data signals. It applies to meet thus appropriate precaution measures, in order to protect sensitive electronic circuits against electrostatic unloading.

The classical protection method with passive elements represents a high security, but works however as a filter. Consequence - all voltage signals are affected independently their value, which means a clearly filtered, and thus slow data signal particularly in the modern Highspeed applications (bus systems, data lines etc.). This leads to a misinterpretation on the data side.

ESD protection diodes, which limit high voltage peaks to an uncritical value, offer progressive protection. An advantage is, that signals in its working area are not be affected and the receiver side will be clearly recognized.

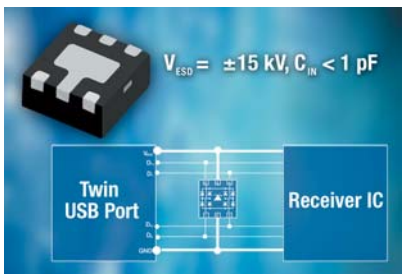
VISHAY-Semiconductors offers a complete portfolio of ESD protection diodes in SMD, as arrays and EMI- filters.

Basic ESD protection function:

- Bidirectional asymmetrical protection **BiAs**
- Bidirectional symmetrical protection **BiSy**
- Unidirectional protection **UNI**
- Bidirectional universal symmetrical protection for **BUS**-application
- ESD-Diodes with integrated **EMI- Filter**

Fast I/O ports get thus effective and protect unrestricted against electrostatic discharge during data communication.

With the new protection diodes arrays from type **VBUS054B-HSF** and **VBUS054B-HS3** in a compact LLP75-package, with a base area of 1.6mm x 1.6mm and a height of 0.6mm, one is able to protect two high speed USB ports or four HF signal lines up to 15 kV acc. IEC 61000-4-2 (ESD).
Another advantage is the small capacity of <1pF and the low leakage current of typ. < 0.1µA during the maximum nominal voltage from 5V. The arrays have a breakthrough voltage of 6.5V (type. at 1mA) and a maximum applied voltage of 15V with 3A.



The space requirement on the PCB minimizes itself, which meets the requirements in portable devices among other things such as diagnostic terminals in industrial and medical applications.

You can receive the total overview of all available ESD protection solutions from your local ECOMAL office.

Informed on time

ECOMAL launches automatic PCN

The PCN (Product Change Notification) refers to information provided by a manufacturer about technical changes to one of its products. The automatic PCN shipment is forwarding the manufacturer product change notifications to our customers in a selective and targeted manner.

When we receive a new product change notifications, an automatic check tells us whether your company has purchased the relevant product from us in the last 24-36 months or currently has orders pending for it.

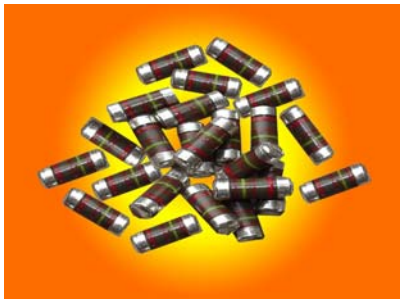
As well as a hyperlink to the original manufacturers PCN, the information provided includes product discontinuation, customer specific data such as material number or a proposed replacement product (if one is available from the manufacturer).

Furthermore, because PCN messages are categorised, there is no need to spend time looking for original manufacturer PCNs or prioritising them for the purpose of internal processing.

Flat Out

Carbon film MELF's with advanced pulse load capability

For resistors there is a multiplicity of technologies, with many different applications. If a circuit has to be protected against signal and power input, carbon film resistors are an excellent solution. They offer in relation to voltages pulses highest insensitivity up to the kV range.



Carbon film construction offers only small and or constant reactance's, whereby the resistances have an outstanding high frequency behaviour.
The **CMB0207** MELF resistors of V**ISHAY Beyschlag** offers in particular high impulse capacity and are used in circuits, which are exposed to electrostatic discharge and electromagnetic influence, first choice.

Their small dimensions with a body length of 5.8 mm and a diameter of 2.2 mm permit integration onto PCBs, with which the space requirement is important.

The SMD resistors are completely lead free, the pure tin coating of the top caps offers first-class suitability both for lead free and for tin/lead soldering processes.

Characteristics:

- VDE approved (IEC 60065, 14.1.a = VDE 0860, 14.1.a)
- Up to 10 kV or 17 kW single pulse capability
- ESD capability: 16 kV, Human Body Model
- Special carbon film technology
- Standard SMD package: 0207

A Europe wide cooperation

ECOMAL and ELMOS join common ways

ECOMAL is with immediate effect Europe wide authorized distribution partner for ASIC's (Application Specific Integrated Circuits) and ASSP's (Application Specific Standard Products) from **ELMOS Semiconductor AG,** manufacturer of Mixed Signal, Microsystem, Sensor and Optoelectronic ICs. With this step ECOMAL broadens its portfolio on Design-In products, which require a substantial amount of explanatory support.

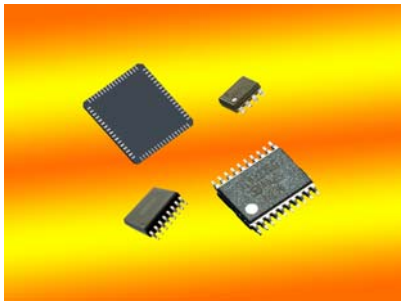
ELMOS Semiconductor AG

ELMOS with over 1000 employees and manufacturing locations in America and Europe rank since 1984 among the most innovative manufacturers of system solutions on semiconductor basis, and gained in the past two decades a prominent market position in the European market for automotive electronics. Their products are:

- Integrated circuits for bus systems as CAN, K or LIN bus
- DC/DC converter
- I/O IC's for analog multiplexing and monitoring of voltage values or mechanical switches
- Motor driver for pumps und blowers
- Driver IC's for relays, LED's and bus systems
- Ripple Count IC's for the sensor less control of rotation speed or for the position at DC-motors
- Hall sensors and optical sensor ICs

In particular for the standard products ASSPs, that is on basis of customized manufactured ICs ELMOS has developed products for further ranges of application too, like consumer-, industry- or medicine electronics, which are provided to a broad clientele via the partner ECOMAL, so Raimund Kohnemann, manager marketing & distribution with ELMOS.

ECOMAL has its focus in the market segments of the industrial, medical and telecommunications electronics, and is therefore according to Martin Behlke, ECOMAL Managing Director the ideal partner for ELMOS.



With the distribution agreement the basis for both sides is established to serve the goal markets in Europe with a specialized Distributor. Due to the broad range of products of ECOMAL not only the ELMOS IC´s also the necessary passive elements as well as the discrete semiconductors for the circuit can be delivered.

With its Technical Support Center (TSC) the distributor offers a competent team of application engineers, and are able to offer a substantial amount of explanatory support for Design In activities to the point of supply logistics.

It is of special interest for ECOMAL that ELMOS already offers a broad selection of products for all applications thus completing the existing Portfolio of ECOMAL.

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