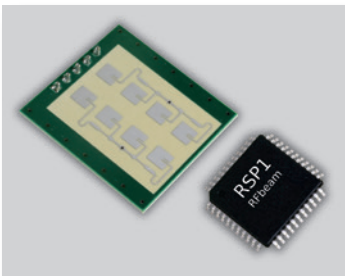# endrich news

electronica 2014 – our booth 138, Hall A5

Our Sensor-Portfolio – Highlights

RADAR SIGNAL CONTROLLER

» Controller designed for smart evaluation of signals from radar front-ends
» Complex FFT based signal processing
» Evaluation board available
» Applications:
   Movement detection for lighting applications, building, automation, burglar alarm;
   Door opener, Traffic control, Speed measurement
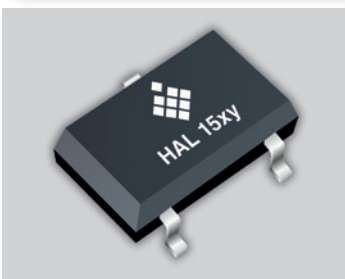
HALL-EFFECT SWITCHES IN SOT23-HOUSING

» 3-wire open-drain or 2-wire current output
» SOT-23 package (JEDEC)
» AEC-Q100 and ASIL-A-ready
» Low power consumption
» High ESD-performance (8 kV)
» Applications: Automotive, Industrial, White goods, Contactless switches
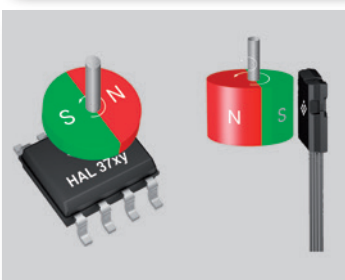
PROGRAMMABLE 3D-HALL-EFFECT-SENSORS

» Measures Bx, By and Bz
» On-chip signal processing
» Calculates the angle out of two magnetic components
» 12 bit ratiometric output (HAL372x)
» 0.2 – 2 kHz PWM output (for HAL373x)
» Applications: Linear and rotary movement detection, Non-contact potentiometer, E-bike

NEW SMD POWER INDUCTORS FOR HIGH VOLTAGE/PISMHV & PISTHV SERIES
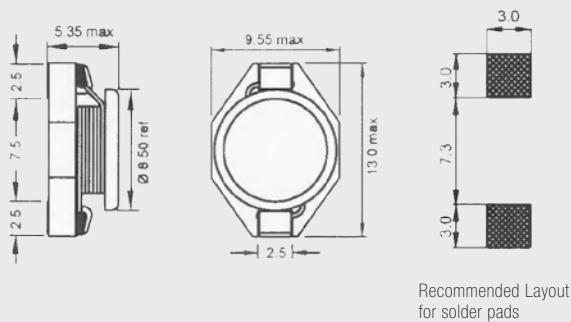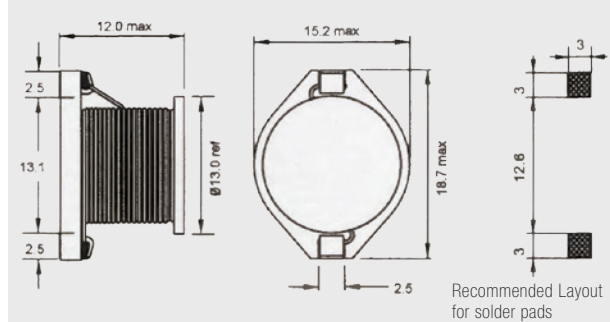
PISM HV series

PIST HV series

FASTRON presents a new High Voltage Version from the existing and popular SMD power inductor models PISM and PIST in the same size. Both, the new PISM HV and PIST HV are designed for higher voltages and voltage peaks up to 400 VDC for modern Power Converter Topologies. Low coil resistance allows for high currents in typical power applications.
PISM HV: L-range from 10 µH to 2.2 mH, current up to 3.57 A
PIST HV: L-range from 15 µH to 10 mH, current up to 4.9 A

DIMENSIONS – PISMHV-SERIES (mm)

Recommended Layout for solder pads

DIMENSIONS – PISTHV-SERIES (mm)

Recommended Layout for solder pads

TYPICAL CHARACTERISTICS – PISMHV-SERIES

Typical L vs Frequency (f)

Typical L vs Current (I)
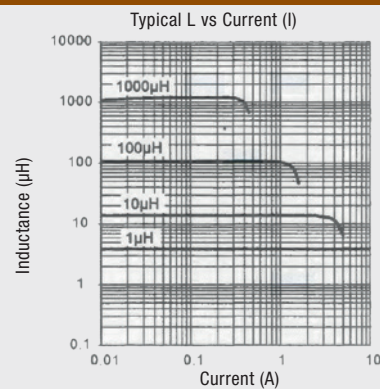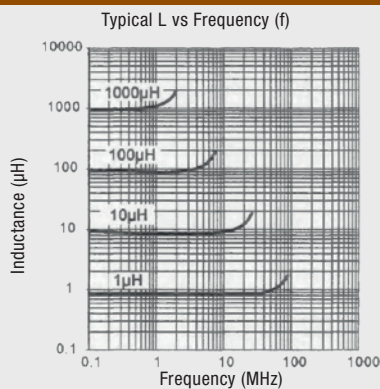
TYPICAL CHARACTERISTICS – PISTHV-SERIES

Typical L vs Frequency (f)

Typical L vs Current (I)

new

Contact for information: Mr. Jung · Tel. +49(0)7452-6007-26 · e-mail: t.jung@endrich.com
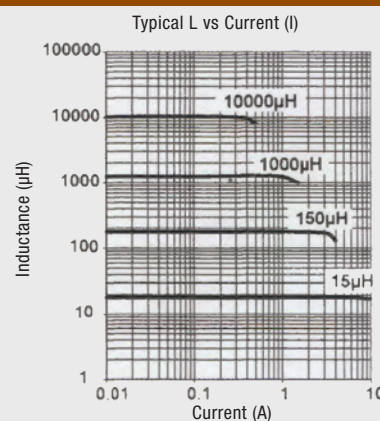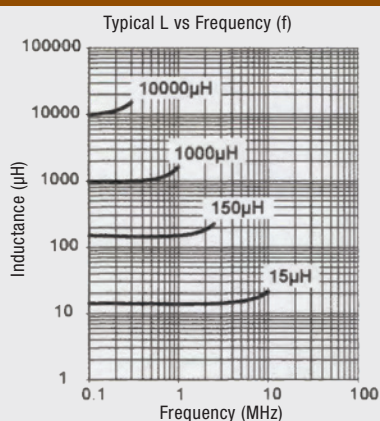
NEW SMD POWER INDUCTORS FOR HIGH VOLTAGE/PISMHV & PISTHV SERIES

FEATURES

» Designed for high currents
» Suitable for use at high temperatures (+155°C incl. self rise).
» AEC-Q200 qualified
» Shock and Vibration proof

APPLICATIONS

» Automotive
» Industrial
» General electronics with high quality requirements

SPECIFICATIONS – PISMHV SERIES

PART NUMBER	INDUCTANCE L [µH]	FREQUENCY f_L [MHz]	TOLERANCE [%]	SRF mln. [MHz]	RDC [Ω]	IDC (I_{SAT} typ.) [A]	IDC ($I_{\Delta T = 40°C max.}$) [A]
PISMHV-100M-04	10	0.1/1 V	±20	28	0.036	3.50	3.57
PISMHV-150M-04	15	0.1/1 V	±20	22	0.050	2.80	2.90
PISMHV-220M-04	22	0.1/1 V	±20	17	0.066	2.30	2.40
PISMHV-330M-04	33	0.1/1 V	±20	13	0.097	1.83	1.97
PISMHV-470M-04	47	0.1/1 V	±20	11	0.145	1.50	1.64
PISMHV-680M-04	68	0.1/1 V	±20	9.2	0.192	1.26	1.45
PISMHV-101M-04	100	0.1/1 V	±20	7.5	0.286	1.03	1.19
PISMHV-151M-04	150	0.1/1 V	±20	6.0	0.405	0.85	1.10
PISMHV-221M-04	220	0.1/1 V	±20	4.6	0.641	0.71	0.85
PISMHV-331M-04	330	0.1/1 V	±20	3.9	1.030	0.60	0.68
PISMHV-471M-04	470	0.1/1 V	±20	3.2	1.459	0.50	0.56
PISMHV-681M-04	680	0.1/1 V	±20	2.7	2.223	0.45	0.48
PISMHV-102M-04	1000	0.1/1 V	±20	2.0	3.483	0.35	0.40
PISMHV-222M-04	2200	0.1/1 V	±20	1.4	7.967	0.26	0.24

SPECIFICATIONS – PISTHV SERIES

PART NUMBER	INDUCTANCE L [µH]	FREQUENCY f_L [KHz]	TOLERANCE [%]	SRF mln. [MHz]	RDC [Ω]	IDC (I_{SAT} typ.) [A]	IDC ($I_{\Delta T = 40°C max.}$) [A]
PISTHV-150M-04	15	100/0.1 V	±20	11.35	0.034	7.85	4.90
PISTHV-820M-04	82	100/0.1 V	±20	4.09	0.104	3.95	2.50
PISTHV-151M-04	150	100/0.1 V	±20	4.00	0.200	2.87	1.90
PISTHV-301M-04	300	100/0.1 V	±20	2.00	0.390	2.10	1.20
PISTHV-681M-04	680	100/0.1 V	±20	1.35	0.770	1.40	0.80
PISTHV-102M-04	1000	100/0.1 V	±20	1.20	1.200	1.17	0.65
PISTHV-472M-04	4700	100/0.1 V	±20	0.55	5.200	0.65	0.30
PISTHV-602M-04	6000	100/0.1 V	±20	0.48	6.700	0.60	0.26
PISTHV-802M-04	8000	100/0.1 V	±20	0.41	8.640	0.56	0.24
PISTHV-103M-04	10000	100/0.1 V	±20	0.40	10.50	0.39	0.21

new

RADAR SIGNAL CONTROLLER RSP1

RSP1 is a member of RFbeam Radar signal processors. The RSPx family helps users concentrating on their application know-how instead of investing time and money in raw signal processing. RSP1 contains all signal processing for Doppler Radar. It covers slow movement detectors as well as speed estimators up 200 km/h. It can be used as stand alone processor or as a co-processor in higher complexity systems. User has only to add an input amplifier and digital output drivers and gets a high performance detection system.

RSP1 is applicable for movement detectors, lighting control systems, security applications, object speed detection, etc.

FEATURES

- » Universal Doppler Radar signal processor
- » Complete I/Q Radar sensor interface
- » Double detection distance compared to traditional solutions
- » Object speed and direction detection
- » Complex FFT based signal processing
- » Efficient adaptive interference suppression
- » Inherent object speed detection up to 135 km/h
- » Stand-alone or hosted operation
- » Serial interfaces to host processor

TECHNICAL KEY DATAS

- » 12 Bit ADC
- » Differential analog inputs for I and Q signals
- » Internal programmable gain amplifier
- » Sampling rates from 1280 Hz to 22.5 kHz
- » Efficient 256 pt complex FFT
- » Logarithmic detection algorithms
- » Adaptive noise and interference analysis and canceling algorithms
- » Serial command and debug/streaming interfaces
- » Highly configurable by serial interface and/or digital and analog inputs
- » Application settings can be down- and uploaded from chip
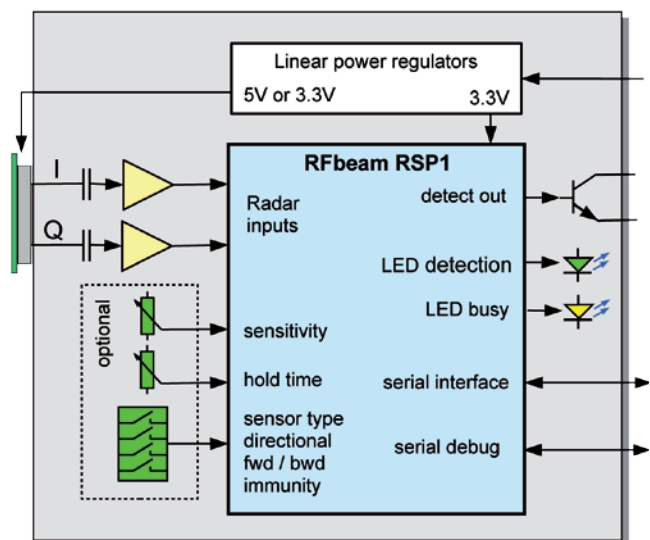- » Sophisticated serial outputs like peak magnitude, frequency and sign, noise level and many more

TYPICAL STAND-ALONE APPLICATION CIRCUIT

Typical applications need minimal external components. Configuration can be made by switches and potentiometers or fully digital via serial interface.

RSP1-EVALUATION KIT
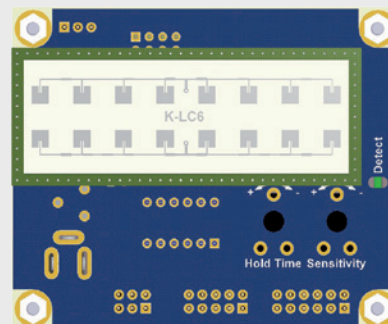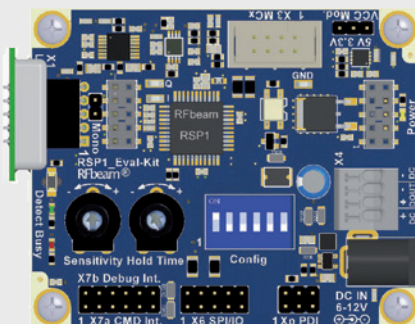
RSP1_Eval-Kit; Left: K-LC2 sensor on front connector; Right: Backside equipped with K-LC6 sensor
With RSP1 Evaluation Kit, you may explore most features of RSP1 working with different RFbeam sensors. Using a RSP_Terminal you have access to more than 30 parameters. Explore FFT, noise and other signals with the RFbeam SerialScope PC Software, that also makes part of the kit. All schematics, PCB layout and BOM are included as a reference.

new

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NEW PRODUCT OVERVIEW OLED-DISPLAYS

Raystar Optronics was established in Taiwan in 2007. Raystar specialises in the production of standard alphanumeric and graphic OLED displays as well as monochrome LC modules. In the last few years Raystar has succeeded in making a name in the Taiwan market as an OLED panel manufacturer.
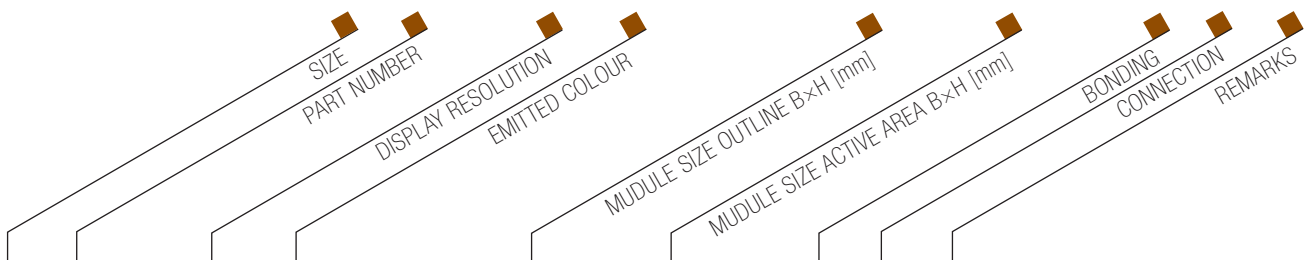
Raystar alphanumeric OLED displays

» Mechanically and electrically compatible with alphanumeric LC displays
» Sunlight readable technology available

RAYSTAR OLED-DISPLAYS 0.95 " to 2.89 "

SIZE	PART NUMBER	DISPLAY RESOLUTION	yell.	green	blue	red	white	MODULE SIZE OUTLINE B×H [mm]	MODULE SIZE ACTIVE AREA B×H [mm]	BONDING	CONNECTION	REMARKS
1.2 "	REC000801A	8 × 2	•	•	•	•	•	58.00×32.00	28.16×11.86	COB	plug-in	Character OLED
1.6 "	REC001202A	12 × 2	•	•	•	•	•	58.00×32.00	38.95×11.80	COB	plug-in	Character OLED
2.29 "	REC001602A	16 × 2	•	•	•	•	•	80.00×36.00	56.95×11.85	COB	plug-in	Character OLED
3.67 "	REC001602B	16 × 2	•	•	•	•	•	122.00×44.00	91.14×18.98	COB	plug-in	Character OLED
2.29 "	REC001602E	16 × 2	•	•	•	•	•	84.00×44.00	56.95×11.85	COB	plug-in	Character OLED
3.08 "	REC002002A	20 × 2	•	•	•	•	•	116.00×37.00	77.30×11.85	COB	plug-in	Character OLED
2.88 "	REC002004A	20 × 4	•	•	•	•	•	98.00×60.00	70.16×20.95	COB	plug-in	Character OLED
2.26 "	REX001602C	16 × 2	•					68.50×17.50	56.22×13.52	COG	solder	Character OLED
2.93 "	REX002002A	20 × 2	•					84.50×19.28	75.52×13.52	COG	solder	Character OLED
2.89 "	REX002004C	20 × 4	•					84.50×27.50	70.42×20.82	COG	solder	Character OLED
0.95 "	REX009664A	96×64	•					24.90×22.95	19.95×13.42	COG	solder	Graphic OLED
0.96 "	REX012864D	128×64	•					26.70×19.95	21.74×10.86	COG	solder	Graphic OLED
1.54 "	REX012864B	128×64	•					45.24×29.14	35.06×17.52	COG	ZIF	Graphic OLED
1.6 "	REX012864F	128×64	•					41.80×27.90	36.45×18.21	COG	ZIF	Graphic OLED
2.23 "	REX012832A	128×32			•			62.00×24.00	55.02×13.098	COG	ZIF	Graphic OLED
2.36 "	RET012864E	128×64	•	•			•	75.00×52.70	53.73×26.85	TAB	plug-in	incl. PCB
2.36 "	RET012864F	128×64	•	•			•	60.50×37.00	53.73×26.85	TAB	ZIF	
2.7 "	RET012864C	128×64	•	•				89.70×47.20	61.41×30.69	TAB	ZIF	incl. Frame
2.8 "	RET025664A	256×64			•			84.00×25.80	69.098×17.26	TAB	ZIF	

new

NEW PRODUCT OVERVIEW OLED-DISPLAYS

In the past 10 years RiTdisplay Corp. has grown to a world market leader for passive OLED displays. The spectrum of these products extends from monochrome to full colour OLEDs.

Special optical qualities of the OLED displays are an extremely high contrast of 2000:1 and an unusually wide viewing angle of 160°. Most of the displays have in addition to the 8-bit parallel interface an SPI and I²C interface.
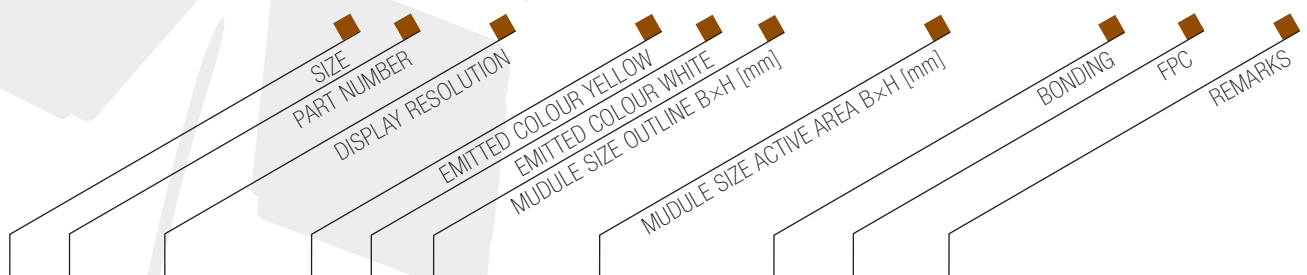
RiT OLED-DISPLAYS 0.5" to 1.0"

SIZE	PART NUMBER	DISPLAY RESOLUTION	EMITTED COLOUR YELLOW	EMITTED COLOUR WHITE	MODULE SIZE OUTLINE B×H [mm]	MODULE SIZE ACTIVE AREA B×H [mm]	BONDING	FPC	REMARKS
0.5"	P24701	72 × 32		•	14.90 × 11.29	11.212 × 4.972	COG	ZIF	Graphic OLED
0.7"	P18701	96 × 16		•	26.30 × 8.0	17.644 × 3.260	COG	solder	Graphic OLED
0.7"	P20603	96 × 32		•	19.80 × 12.8	16.300 × 5.420	TAB	solder	Graphic OLED
0.7"	P20606	96 × 32	•		19.80 × 12.8	16.300 × 5.420	TAB	ZIF	Graphic OLED
0.7"	P20608	96 × 32		•	19.80 × 12.8	16.300 × 5.420	TAB	ZIF	Graphic OLED
1.0"	P25303	128 × 64		•	26.70 × 19.26	21.740 × 10.86	COG	solder	Graphic OLED
1.0"	P15201	96 × 64	•		25.34 × 22.50	20.140 × 13.42	COG	solder	Graphic OLED
1.0"	P15204	96 × 64		•	25.34 × 22.50	20.140 × 13.42	COG	solder	Graphic OLED
1.0"	P17504	128 × 32		•	30.40 × 14.50	25.580 × 9.40	COG	ZIF	Graphic OLED
1.0"	P18301	128 × 64		•	28.22 × 21.63	23.020 × 11.50	COG	solder	Graphic OLED
1.0"	P18303	128 × 64		•	28.22 × 21.63	23.020 × 11.50	COG	ZIF	Graphic OLED

new

NEW PRODUCT OVERVIEW OLED-DISPLAYS

SIZE	PART NUMBER	DISPLAY RESOLUTION	EMITTED COLOUR YELLOW	EMITTED COLOUR WHITE	MUDULE SIZE OUTLINE B×H [mm]	MUDULE SIZE ACTIVE AREA B×H [mm]	BONDING	FPC	REMARKS
RiT OLED-DISPLAYS 1.1" to 3.2"									
1.1 "	P19601	96 × 64	•		29.00 × 21.00	23.430 × 15.65	TAB	solder	Graphic OLED
1.1 "	P27901	96 × 96	•		27.00 × 27.00	20.140 × 20.14	COG	solder	Graphic OLED
1.3 "	P14201	128 × 96		•	33.00 × 26.80	26.860 × 20.14	COF	solder	Graphic OLED
1.3 "	P14209	128 × 96		•	33.00 × 26.80	26.860 × 20.14	COF	ZIF	Graphic OLED
1.3 "	P27201	128 × 96		•	32.50 × 36.40	26.860 × 20.14	COG	solder	Graphic OLED
1.5 "	P22101	128 × 128	•		33.80 × 36.50	26.860 × 26.86	COG	solder	Graphic OLED
1.5 "	P22102	128 × 128		•	33.80 × 36.50	26.860 × 26.86	COG	solder	Graphic OLED
1.6 "	P19401	128 × 64	•		41.90 × 28.00	36.450 × 18.21	COG	ZIF	Graphic OLED
1.6 "	P19407	128 × 64		•	41.90 × 28.00	36.450 × 18.21	COG	ZIF	Graphic OLED
2.4 "	P21501	128 × 22	•		63.30 × 20.80	58.850 × 11.85	COG	ZIF	Graphic OLED
2.4 "	P21503	128 × 22		•	63.30 × 20.80	58.850 × 11.85	COG	ZIF	Graphic OLED
2.4 "	P27701	128 × 64	•		60.50 × 37.00	55.010 × 27.49	COG	ZIF	Graphic OLED
2.4 "	P19701	128 × 64	•		60.50 × 37.00	55.010 × 27.49	TAB	ZIF	Graphic OLED
2.4 "	P19702	128 × 64	•		60.50 × 37.00	55.010 × 27.49	TAB	PIN	Graphic OLED
2.4 "	P19703	128 × 64		•	60.50 × 37.00	55.010 × 27.49	TAB	ZIF	Graphic OLED
2.7 "	P19301	128 × 64	•		70.90 × 41.86	61.410 × 30.69	TAB	ZIF	Graphic OLED
2.7 "	P19303	128 × 64		•	70.90 × 41.86	61.410 × 30.69	TAB	ZIF	Graphic OLED
3.1 "	P19101	256 × 32		•	83.80 × 18.00	79.084 × 9.868	COF	ZIF	Graphic OLED
3.2 "	P21301	256 × 64		•	87.40 × 28.50	79.084 × 19.756	COF	ZIF	Graphic OLED
3.2 "	P21302	256 × 64	•		87.40 × 28.50	79.084 × 19.756	COF	ZIF	Graphic OLED
1.1 "	P27801	96×3×96	262k Full Colors		25.80 × 30.10	20.135 × 20.14	COG	solder	Graphic OLED
1.3 "	P22201	128×3×96	262k Full Colors		33.00 × 25.80	26.297 × 19.708	COF	solder	Graphic OLED
1.5 "	P23901	128×3×128	262k Full Colors		33.50 × 33.50	26.297 × 26.284	COF	solder	Graphic OLED
1.5 "	P23905	128×3×128	262k Full Colors		33.50 × 33.50	26.297 × 26.284	COF	solder	Graphic OLED
1.8 "	P16803	160×3×128	262k Full Colors		42.70 × 33.40	35.015 × 28.012	COF	ZIF	Graphic OLED
1.8 "	P16807	160×3×128	262k Full Colors		42.70 × 33.40	35.015 × 28.012	COF	solder	Graphic OLED
2.26 "	P29401	16 × 2		•	67.20 × 17.50	56.220 × 11.52	COG	solder	Character OLED
2.93 "	P29501	20 × 2		•	83.00 × 19.00	73.520 × 11.52	COG	solder	Character OLED

new

NEW HIGH PERFORMANCE OPTOCOUPLERS

EVERLIGHT's 80 V 4-pin optocouplers EL617, EL101X and EL121N combine high performance with a wide operating temperature range.

EVERLIGHT ELECTRONICS CO., LTD., a leading player in the global LED and optoelectronics industry, showcased its broad and growing infrared portfolio at electronica 2014 that includes infrared LEDs, photo transistors and photo diodes, infrared receiver modules, optical sensors, photocouplers and high speed couplers. A particular attention this year was given to three new high performance optocouplers **EL617**, **EL101X** and **EL121N** that combine a high breakdown voltage of 80 V with a wide operating temperature range from -55 to 110°C which enhances system reliability.

EL617 and EL101X have a high isolation voltage of 5000 Vrms for improved insulation characteristics and a creepage distance of more than 8 mm which offer an advantageous combination of key specifications sought after by power supply designers. The EL121N with 3,750 Vrms targets DC-DC converters. Other applications include programmable controllers, measuring instruments, telecommunication equipment, home appliances and for signal transmission between circuits of different potentials and impedances. All three optocouplers are Pb-free, RoHS-compliant and VDE approved. Sampling and technical support are available now (upon request). Mass production starts in Q4/2014.

SPECIFICATIONS

TYPE	SHAPE	DIMENSIONS	BV_{CEO}	V_{ISO}	CTR	CREEPAGE DISTANCE	OPERATING TEMP.
EL101X	SMD	7.6×3.60×2.0 mm	80 V min.	5000 V$_{rms}$	50 % … 600 %	>8 mm	-55°C … +110°C
EL617	DIP u. SMD	6.6×4.68×3.5 mm	80 V min.	5000 V$_{rms}$	50 % … 600 %	>8 mm	-55°C … +110°C
EL121N	SMD	4.4×3.60×2.0 mm	80 V min.	3750 V$_{rms}$	100 % … 400 %	>8 mm	-55°C … +110°C

new

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