What’s included:  Semiconductors  Thermal
Passives  Power
Sensors  Connectors
Welcome to the first Issue of the eBOM.com magazine, the publication for design engineers and purchasing professionals looking to discover, source, compare and buy the latest electronic components and services.

The eBOM.com magazine hand picks the latest component releases from eBOM.com and condenses them down into concise stories based on component type, allowing you to quickly and efficiently find what you are looking for.

Once discovered, components can easily be purchased by clicking the buy now button, this will instantly give you latest stock and price comparison direct from eBOM Authorized powered by ECIA Authorized. Also, you are able to insert any part number to efficiently check authorized distributors stock. Not to mention are selection of the latest free samples.

We all hope that the series will become an essential tool for your electronic component needs. Only time will tell.

Thomas Smart
Managing Editor
Increased processing power

Ultra-low-power Value line 8-bit MCU with 8 Kbytes Flash, 16 MHz CPU, integrated EEPROM

STM8L05J3 features an enhanced STMicrocontroller core providing increased processing power (up to 16 MIPS at 16 MHz) while maintaining the advantages of a CISC architecture with improved code density, a 24-bit linear addressing space and an optimized architecture for low-power operations.

The STM8L05J3 MCU includes an integrated debug module with a hardware interface (SWIM) which allows non-intrusive debugging and ultra-fast Flash programming. It features an embedded data EEPROM and low-power, low-voltage, single-supply program Flash memory.

The device incorporates an extensive range of enhanced I/Os and peripherals, a 12-bit ADC, two comparators, a real-time clock, two 16-bit timers, one USART, SPI, an I2C interface, and numerous other applications that demand highest efficiency or power density.

New logic level MOSFETS for low VGS

Available in three different voltage classes (60V, 80V, and 100V), Infineon’s logic level OptiMOS™ 5 power MOSFETs in PQFN 3x3.3 and IR MOSFETs™ in PQFN 2x2 are highly suitable for wireless charging, adapter and telecom applications.

The devices’ low gate charge (Qg) reduces switching losses without compromising conduction losses. The improved figures of merit allow operations at high switching frequencies. Furthermore, the logic level drive provides a low gate threshold voltage (VGS(th)) allowing the MOSFETs to be driven at 0V and directly from microcontrollers.

Despite the low gate charge, the products achieve a lower RDS(on) compared to the next best alternative.

Gallium nitride CoolGaN™ 600V e-mode power transistor IGO60R070D1 for ultimate efficiency

The IGO60R070D1 CoolGaN™ 600V e-mode power transistor offers fast turn-on and turn-off speed, minimum switching losses and enables simple half bridge topologies with highest efficiency.

The gallium nitride CoolGaN™ 600V series is qualified according to a comprehensive GaN-based qualification well beyond existing standards. It addresses datacom and server SMPS, telecom as well as adapter, or DMA controllers, enabling numerous other applications that demand highest efficiency or power density.

Single-chip maXTouch® touchscreen controllers enable 20-inch automotive touchscreens

Microchip announces a new family of single-chip maXTouch® touchscreen controllers designed to address the challenges in the design of modern automotive capacitive touch systems with screens up to 20 inches in size.

As touchscreen displays increase in the car grow larger, drivers expect screens to operate with the same touch experience as mobile phones. However, screens in automobiles need to meet stringent head impact and vibration tests, and consequently have thicker cover lenses that potentially impact the touch interface performance. As screens get larger, they are also more likely to interfere with other frequencies such as AM radio and car access systems.

The MXT2912TD-A, with nearly 3,000 touch-sensing nodes, and MXT2113TD-A, supporting more than 2,000 nodes, bring consumers the touchscreen user experience they expect in vehicles. These new devices build upon Microchip’s existing maXTouch touchscreen technology that is widely adopted by manufacturers worldwide. Microchip’s latest solutions offer superior signal-to-noise capability to address the requirements of thick lenses, even supporting multiple finger touches through thick gloves and in the presence of moisture.

As automakers use screens to replace mechanical switches on the dashboard for sleeker interior designs, safe and reliable operation becomes even more critical. The MXT2112TD-A and MXT2113TD-A devices incorporate self- and sensor-diagnostic functions, which constantly monitor the integrity of the touch panel. The diagnostic features support the automotive safety integrity level (ASIL) classification index as defined by the ISO 26262 Functional Safety Specification for Passenger Vehicles.

The new devices feature technology that enables adaptive touch utilizing self-capacitance and mutual-capacitance measurements, so all touches are recognised and false-touch detections are avoided.

They also feature Microchip’s proprietary new signal-shaping technology that significantly lowers emissions to help large touchscreens using maXTouch controllers meet CISPR-25 Level 5 requirements for electromagnetic interference in automobiles. The new touch controllers also meet automotive temperature grade 3 (-40 to +85°C) and grade 2 (-40 to +125°C) operating ranges and are AEC-Q100 qualified.
Passives

Capacitors, chokes and fuses

SCHURTER – DKIH-4 High Current Choke

SCHURTER expands its successful range of PCB mount current-compensated chokes with a series for 4-wire high-current applications. The series is available for three phase applications with neutral line at rated currents from 10 A to 40 A. Due to the open design, the chokes are particularly compact and lightweight.

The power system portion of an electronic equipment is increasingly configured on a printed circuit board using discrete components. Dense integration of these components to achieve a compact design, increases thermal problems due to the resulting high currents on the PCB. EMC interference can affect adjacent modules due to the lack of spatial separation. Therefore, a compact filter on the PCB with discrete components is often the best solution. A current-compensated choke with capacitors is the most efficient method of suppressing EMC interference and the DKIH-4, with its nanocrystalline ring core, provides much greater inductance in a smaller footprint over conventional ferrite core chokes.

SHF 6.3×32 Compact High Performance Fuse with Extended Range

SCHURTER extends the rated current range of its SHF 6.3×32 down to 500mA for a total nineteen rated currents, ranging from 500 mA and 32 A, including the newest 500 mA, 630 mA and 800 mA versions.

The SHF 6.3×32 is a ceramic fuse for higher voltages (AC and DC) with fast tripping characteristics. The high dielectric strength and the high breaking capacity of 1500 A at rated voltage of up to 500 VAC/VDC exemplifies the high performance of this fuse series, while also allowing for new areas of application.

Besides a multitude of applications in the energy and industrial sector, the SHF 6.3×32 is especially suitable for the protection of 3-phase systems. The compatibility with existing form and fit products on the market makes the SHF 6.3×32 an ideal substitution for applications with demand for increased ratings in the 6.3×32 mm size. The fuse series is available as a standard, or with pigtail leads (from 1 to 8 A).

Vishay Intertechnology Releases Commercial IHLP® Inductors Featuring Short Lead Times

To provide faster access to its most popular IHLP® low profile, high current inductors, Vishay Intertechnology, Inc. has introduced alternative versions of its commercial style IHLP with shorter lead times of 8 to 10 weeks.

The devices released today offer designers alternatives to Vishay’s 10 best-selling series of commercial, standard IHLP inductors that currently have extended lead times. Manufactured on separate, dedicated production lines, the device lineup consists of over 100 inductor part numbers in the 1616, 2020, 2525, and 4040 case sizes. These devices are targeted for commercial applications and are equivalent in fit, form, and function to standard IHLP inductors but may show slight deviation in datasheet parameters.

Chip fuse for highest demands

With the UAI 1206, SCHURTER offers a pulse and temperature resistant chip fuse with slow release characteristics for applications in which aging resistance and maximum reliability have the highest priority.

Usual fuses have some kind of memory. If they are exposed to pulse-shaped current peaks and high temperature fluctuations, their properties change. Every pulse makes it a little weaker, every temperature fluctuation a little more susceptible. Not so with the SCHURTER UAI 1206.

Thanks to the special fuse construction, the resistance to current pulses smaller than the melting integral (I2t) could be massively increased. The UAI 1206 has practically no derating to the usual extent. The ingenious design of the fuse body also dampens temperature fluctuations to a high degree. The SCHURTER UAI 1206 is also hermetically sealed against potting compound.

Vishay Capacitors Enhanced to 500V Rated Voltage

New Yorker Electronics has announced it will be carrying the newly enhanced Vishay BC Components 500 PGP-ST series of aluminum screw-terminal capacitors. This new model now has an increased maximum voltage rating of 500V. These new devices have the same 5000h lifetime at +85°C as the other voltage ranges, which were recently upgraded from their previous 2000h lifetime at +85°C. The 500V PGP-ST has been optimized for DC-Linking in power conversion electronics rated at 20kW and above and are available with 8mm terminals.
Simply sensing

Maxim, Integrated PPG and ECG Biosensor Module

Designers now have an easier way to deliver both photoplethysmogram (PPG) and electrocardiogram (ECG) measurements for health monitoring from a mobile, battery-powered device. The new MAX86150 from Maxim Integrated Products, Inc. is a first-of-a-kind biosensor module, comprised of internal LEDs, photodetectors and an ECG analog front-end (AFE) to provide highly accurate, FDA-certifiable PPG and ECG performance in compact, power-saving designs.

Delivering synchronized PPG and ECG measurements has been challenging because designers have had to utilize two separate biosensors that together consume more board space and power than a mobile device can typically afford. In addition, achieving high accuracy in the measurements has also been challenging. The MAX86150 overcomes these challenges, sampling both PPG and ECG simultaneously to provide the optimal conditionals are maintained with the minimum of energy expenditure.

Gas Sensing Solutions (GSS) has solved this problem with its low power, LED-based sensor technology. The sensor’s power requirements are so low that wireless monitors can be built that measure CO2 levels as well as temperature and humidity with a battery life of over ten years. Being wireless means that they can be placed wherever they are required with no need for cabling or disruption and simply relocated as building usages change.

To make the design of these monitors easier, GSS has added an I2C interface to its very low power CO2 sensor. With the widely used I2C interface now makes the integration of the sensor into a design very easy. The CozIR®-LP is the lowest power CO2 sensor available requiring only 3mW that is up to 50 times lower than typical NDIR CO2 sensors.

Shield2Go boards based on advanced sensing capabilities

The boards are equipped with two high-performance digital MEMS Microphone IM69D130 in stereo mode configuration and come with a ready-to-use software library for Arduino. With the IM69D130 Shield2Go users benefit from studio-like microphone and recording quality. The microphones come with dynamic range of 105dB where sensitivity (±1dB) and phase (±2° @1kHz) are matched. Other features are: flat frequency response with low-frequency roll-off at 28Hz, very fast analog to digital conversion speed (≥5us latency @1kHz), power optimized modes determined by PDM clock frequency, and omnidirectional pickup pattern. The board offers PDM and I2S output configuration.

UV Light Sensor Breakout – VEML6075 (Qwiic)

The VEML6075 UV Light Sensor Breakout is SparkFun’s latest ultraviolet sensing solution. The VEML6075 implements a simple photodiode to measure the levels of UVA (320-400nm) and UVB (280-320nm) radiation. With this breakout, you will be able to read the intensity of these types of light in irradiance, and from there, calculate the UV Index. Utilizing our handy Qwiic system, no soldering is required to connect it to the rest of your system. However, we still have broken out 0.1” spaced pins in case you prefer to use a breadboard.

Thermal

New high thermal conductivity die

Engineered Material Systems, debuts its TM-6520 low temperature cure adhesive. Designed for die attach and general circuit assembly applications, the adhesive is electrically insulating and offers high thermal conductivity.

TM-6520 cures in 60 minutes at 70°C or 20 minutes at 100°C with a thermal conductivity of 1.7 W/K. This material is ideal for applications where the components are temperature sensitive and require a high thermally conductive adhesive for heat dissipation. TM-6520 has a 24-hour work-life and a 15,000µp viscosity at 5rpm for easy needle dispensing.

LEXAN™ film offers high thermal process stability

SABIC launches innovative new transparent high-heat LEXAN™ CXT film. The new polycarbonate (PC) based technology combines superior optical clarity and high design flexibility with excellent thermal and dimensional stability at elevated process temperatures. The material was specially developed to provide a high-performance and cost-efficient solution for substrates in the rapidly growing flexible printed electronics market temperatures.

“Our new high-heat LEXAN™ CXT film has been engineered to overcome these constraints while at the same time offering excellent transmission, low haze and clarity compared to traditional high heat films explains Mr. Ravi Menon, Global Business Manager Film for SABIC.

UNIQUE FANS AND BLOWERS FOR INDUSTRIAL APPLICATIONS

FROM COOLING TO AIR MOVING

NEW U100HL RANGE OF IP67 METAL BODIED RUGGED DC BLOWERS

Can generate over 120 mBar (12,000 pascals) of pressure
Free blowing air flow over 900 litres per minute
Very compact small size package of 107 x 107 x 118 mm
Energy and space saving alternative to bulky and power hungry side channel blowers
The Maxim MAX17250 DC-DC boost converter, includes a selectable input peak current limit of 3.5 A, 2.7 A, or 1.85 A and operates over an input voltage range of 3.7 V to 18 V with an output voltage range of 3 V to 18 V. The device supports switching frequencies up to 1 MHz and offers short-circuit protection and a maximum on-time of 800 ns in a space-saving 12-bump, 1.72 mm × 1.49 mm package.

There are three models of single output voltages from 12 VDC to 48 VDC. They also feature a universal input and comply with EN 55032 class B and the latest IEC/UL 60601-1 edition to cover a wide range of applications.

Maxim’s MAXM17552 uSLIC Power Module, Offers Higher Voltages for Industrial Applications

Mouser Electronics, Inc., is now stocking the MAXM17552 compact step-down DC-DC power module from Maxim Integrated. Offering an ultra-small power source to drive high-voltage industrial and consumer applications, the micro-system-level IC (uSLIC) module provides a wide input voltage range for factory automation, medical, and communications devices.

The MAXM17552 converter implements three modes of operation: The first mode of operation is a soft-start mode at power-up. The second mode of operation is normal operation, which converter switching only when needed. The MAXM17552 converter’s True Shutdown™ mode completely disconnects the output from the input, resulting in a current draw of just 0.1 μA, virtually stopping battery drain, providing long battery life, and eliminating the need for external disconnect switches.

The MAXM17552 module is part of Maxim’s Himalaya series of voltage regulator ICs and power modules, which enable cooler, smaller, and simpler power supply solutions. The MAXM17552 module operates over a wide input-voltage range of 4 V to 60 V and delivers up to 100 mA output current over an adjustable output voltage from 0.9 V to 5.5 V. The module integrates a wide-input Himalaya buck regulator with built-in FETs, compensation and other functions with an integrated shielded inductor in a minuscule 2.6 mm × 3.0 mm × 1.5 mm package. The module uses peak current-mode control architecture, operates in pulse-width modulation (PWM) mode, and offers a soft-start feature to reduce input inrush current. The charger can operate with only a battery, only an adapter, or both connected. It takes DC input power from conventional adapters, travel adapters, and USB Type-C power delivery (PD) ports, and safely charges battery packs with up to four-cell Li-ion series batteries. In NVDC mode, the ISL9241 automatically selects the adapter or battery as the source for system power. NVDC operation also supports Turbostart™ mode by turning on the BGATE FET to limit adapter current at the adapter’s current limit set point. NVDC is the ISL9241’s initial startup state before the system controller’s firmware changes the configuration to HPBB. In higher power HPBB mode, the ISL9241 supports bypass, bypass plus charging, reverse turbo-boost mode, and reverse turbo-boost mode plus turbocharging.

The ISL9241 provides 5V to 20V reverse buck, boost, or buck-boost operation to the adapter port (OTG mode). This allows configurations to support USB-C PD output for fast charging Programmable Power Supply (PPS) ports.

Renesas Electronics

Renesas Electronics Corporation introduces the industry’s first USB-C™ combo buck-boost battery charger. Renesas Electronics Corporation introduces the industry’s first USB-C™ combo buck-boost battery charger to support both Narrow Voltage Direct Charging (NVDC) and Hybrid Power Buck-Boost (HPBB) charging for notebooks, ultrabooks, tablets, and power banks using the reversible USB Type-C™ connector cable. Through firmware control, the ISL9241 can switch between NVDC and HPBB modes, providing a low-cost and small solution size capable of efficiently processing a full range of power levels. It leverages Renesas’ advanced R² modulation technology for superior light-load efficiency and ultra-fast transient response to extend battery run time. The charger’s reconfigurable internal registers allow the use of a smaller inductor for HPBB mode to achieve higher efficiencies across multiple power levels.

The ISL9241 delivers charging, system bus regulation, and protection features using NFETs for highest efficiency and bill of material (BOM) cost optimization. The charger can operate with only a battery, only an adapter, or both connected. It takes DC input power from conventional adapters, travel adapters, and USB Type-C power delivery (PD) ports, and safely charges battery packs with up to four-cell Li-ion series batteries. In NVDC mode, the ISL9241 automatically selects the adapter or battery as the source for system power. NVDC operation also supports Turbostart™ mode by turning on the BGATE FET to limit adapter current at the adapter’s current limit set point. NVDC is the ISL9241’s initial startup state before the system controller’s firmware changes the configuration to HPBB. In higher power HPBB mode, the ISL9241 supports bypass, bypass plus charging, reverse turbo-boost mode, and reverse turbo-boost mode plus turbocharging.

The ISL9241 provides 5V to 20V reverse buck, boost, or buck-boost operation to the adapter port (OTG mode). This allows configurations to support USB-C PD output for fast charging Programmable Power Supply (PPS) ports.
Connectors

**Connectivity**

**MXMag RJ45 connector family from Molex**

Tested to over 2,500 mating cycles, the MXMag RJ45 Connector Family is robust, highly-reliable magnetic jacks with optional automated ratcheting-solder capabilities to increase production output and Power over Ethernet (PoE) function to deliver additional cost advantages.

**VeriO™ Connector from Amphenol ICC**

VeriO™ Connector is a versatile, robust and compact I/O system featuring multiple standard connector interfaces such as RJ45, PoE (Power over Ethernet), Signal, Power and Hybrid. It is easy to install and operate with a swift push pull type movement. VeriO connector is ideal for industrial applications as well as harsh indoor or outdoor environments. Multiple standard I²O connector interfaces enable greater choice, easy to install and operate, weather proof; IP67 resistant, small form factor enable greater port to port density.

**New Amphenol Industrial LTW X-LOK IP68 field installable connector family**

Amphenol LTW’s X-LOK product series portfolio for signal, power, and hybrid applications is now available from TTI, Inc. The X-LOK Series features a push lock mechanism, enabling blind mating for fast, simple and convenient installation, repair and maintenance in the field. The X-LOK Series meets the high standards required for industrial connectors as devices are manufactured using UL94V-0 and UL-flamed material to provide protection against UV exposure, as well as being IP68 rated to protect against jets of water and dust ingress.

**TE Connectivity adds to M12 range with connectors for PCBs and panels**

TE Connectivity (TE), a world leader in connectivity and sensors, is extending its M12 connector portfolio. The latest connectors, with eight and twelve pin positions for direct mounting onto PCBs and panels, complement field-installable connectors and cable assembly solutions.

**Global IoT connectivity with LPWA Module Platform**

To meet booming global demand for Low Power Wide Area (LPWA) IoT connectivity, Gemalto announces a platform of innovative Cinterion IoT Modules based on the latest Qualcomm® 9205 LTE IoT modem from Qualcomm Technologies, Inc. The new solution is designed to support global LTE-M and NB-IoT connectivity with optional 2G fallback from a single, ultra-small IoT module. Ready for the latest 3GPP specifications (Rel 14), the platform will be loaded with Gemalto security and value-added features specifically designed for compact, power-efficient IoT applications including smart meters, asset trackers, healthcare, wearable and smart city solutions.

**Pinpoint SMD antenna ‘Raptor’**

Antenova Ltd has developed a new SMD positioning antenna that achieves an extraordinary level of accuracy in the GNSS bands – it can pinpoint a location to within centimetres.

**Nordic Semiconductor demonstrates new nRF91 Series SiP for cellular IoT**

Nordic’s unique nRF9160 System-in-Package, brings cellular IoT to any application, the award-winning nRF52840 Bluetooth LE/Bluetooth 5 SoC demonstrates concurrent protocol support, asset tracking, LTE-A gateways, and Thread sensors.

**New ultraminiature, thin-film transmission line capacitors**

AVX Corporation, has introduced a new line of ultraminiature, thin-film transmission line capacitors for high-frequency links. DC blocking in the UHF range (300MHz – 3GHz), and other high-performance microwave and RF applications. The new capacitors have a novel metal-insulator-metal (MIM) structure, copper traces for optimal circuit conductivity, a transmission line wire-bond pad, and a gold-metallized backside ground, and can be supplied on a variety of low-loss substrates including quartz, alumina, glass, and silicon.

**Frequency**

**Frequency management for an IoT world**

Available in the second half of 2019, the first Cinterion products based on Qualcomm Technologies’ next-gen IoT LTE chipset will include the multimode Cinterion EX982 IoT Module and Cinterion EX582 IoT Module with 2G fallback. The miniaturized solutions are designed to deliver global connectivity and extended coverage range with support of power class 5. This can enable up to 70% reduced power consumption helping to preserve the battery for applications remote locations. It can also reduce cost and complexity for device makers and ensure worldwide reliability, which is crucial for the 6 billion new IoT devices expected to leverage LPWAN connectivity by 2026.

**New transmission line capacitors are also available in a wide range of capacitance values: 0.3–50pF with a ±20% tolerance, and each is made using a high-frequency structure simulator (HFSS) to proactively address any electromagnetic challenges and provide the highest possible RF performance and reliability.**
Cost effective wire-to-board 1mm pitch connection system from Taicom

The TxH1001 series from Taicom provide a simple and reliable wire-to-board connector solution. These cost effective industry compatible connectors are available on a space saving 1mm pitch in straight and right-angled surface mount options. The fine pitch makes the series an excellent choice where PCB real estate is at a premium.

Flexible electronic and electric device labelling

Communicate instructions to increase ease of use, safety and compliance of any device on a reliable label that can last the lifetime of many electronic and electric devices. Get samples and download the free labeling guide.

High accuracy 3-axis inclinometer with digital true inclination angle output

Murata announced a new 3-axis inclination sensor with a tilt angle output and digital SPI interface. The high performance SCL3800 series of devices will be used in a variety of demanding applications including levelling, tilt sensing, machine control and structural health monitoring.

Heilind Electronics Now Stocking Molex OTS Squba Discrete Cable Assemblies

Heilind Electronics has expanded its selection of interconnect solutions with the company’s off-the-shelf (OTS) Squba discrete wire cable assemblies. Squba wire-to-wire cable assemblies are designed to accommodate small spaces and provide protection against liquid, dust and dirt. In addition, their IP67 rating ensures a reliable connection even in wet conditions.
The Definitive Discrete Semiconductor Selection Guide

Exclusively from Anglia the new guide details a comprehensive selection of discrete semiconductors. Products include rectifier, small signal, zener, schottky and fast diodes, bridge rectifiers and small signal transistors all available in industry standard packages to suit a wide range of designs.

To reserve your copy now or download the interactive selection guide visit www.anglia-live.com/discrete