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The World's **LARGEST SELECTION** of Electronic Components Available for Immediate Shipment



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Featuring 100% RoHS-compliant parts, the kit provides 21 specific samples of test points and jumpers, along with fuse clips, and battery contacts. The multi-compartment box contains standard, low, and ultra-low profile devices, as well as surface-mount, and thru-hole parts. [Click Here for More Information!](#)

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The Main Circuit

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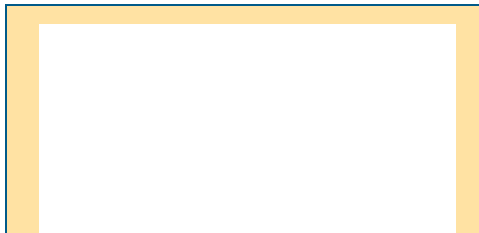
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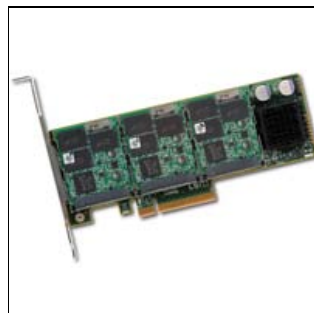


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ECN proudly presents the winners of the 2011 Reader's Choice Tech Awards! Congratulations to the winners and to all who were nominated!

Boards, Modules & Embedded Systems: PCI Express Solid-State Storage Card Helps Accelerate Application Performance



LSI Corporation's PCI Express-based WarpDrive SLP-300 acceleration card offers performance up to 240,000 sustained IOPS and 300 GB of SLC solid-state storage capacity within a low profile form factor. The card can help customers accelerate application performance, reduce energy costs and eliminate racks of storage by delivering the I/O performance of hundreds of hard disk drives while consuming less than 25 W of power. The low-profile, half-length WarpDrive card plugs into a standard eight-lane PCIe Gen 2.0 server slot and is designed to deliver high performance with low latency and a low CPU burden independent of main memory size. It offers system builders, system integrators and their end customers a cost-effective, plug-and-play

solution for maximizing the transactional I/O performance of applications such as Web serving, data warehousing, data mining, professional video and high-performance computing.

LSI Corporation, 800-372-2447, www.lsi.com

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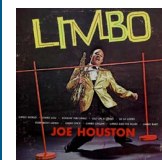
Forums



Bright Bunny Kit

3 hours ago
The Bright Bunny Kit is a great way to learn soldering and hand sewing. At the end of this project, you'll have a cute stuffed animal that lights up when you feed it a carrot!

The original design for the Bright Bunny came from Phillip Lindsay, aka follower.

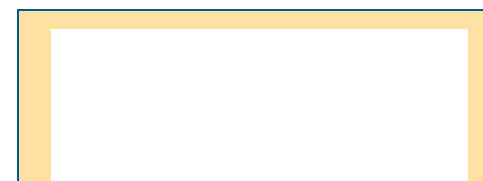


Laser Limbo

Feb 29
Sometime around mid 2011, Sparkfun had the idea of holding an Open House as a fun event that would give us the opportunity to interact with the community. We

brainstormed many fun ideas for the event and decided on which ones to shoot for.

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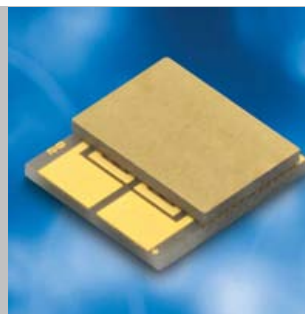


Cooling & Thermal Management (tie):

Thermoelectric Power Generator Delivers Steady-state Clean Energy at Very Low Temp Differentials

Nextreme Thermal Solutions announced the availability of the new eTEG HV56 thermoelectric power generator, the next entry in the high-voltage (HV) series of clean energy generators based on thin-film thermoelectrics, that operates at

temperature differentials as low as 10 degrees K. When combined with batteries and energy cells, the power generator offers a desirable steady-state energy solution for a variety of self-powered applications in the wireless sensor, automotive, aerospace, industrial and medical device markets. The HV56 is capable of producing 1.5 mW of output power and an open circuit voltage of 0.25 V at a 10 K?T in a footprint of only 11 mm². At 50 K?T, the HV56 produces 36.5mW of power and an open circuit voltage of 1.25V. The module is extremely thin: only 0.6 mm high, and can be configured electrically in series to produce higher voltage and power outputs.



Nextreme Thermal Solutions, Inc., 919-597-7300, www.nextreme.com

DC Fan Series Accepts Wide Input Voltage for Telecom Apps



Orion Fans developed a line of DC fans that are desirable for telecom applications. Designated the OD1238-60HB Series, the fans operate using input voltage from 36 VDC to 72 VDC without sustaining damage, and measure 120 mm x 38 mm (4.7" x 1.5"). The OD1238-60HB Series fans are constructed with PBT, UL94V-0 plastic frame and impeller. They feature a dual ball bearing system and an auto restart, IC-protected brushless DC motor with input voltage ratings from 36 V to 72 VDC and a nominal voltage of 60 VDC. Airflow is 115 cfm, with speeds rated at 2600 rpm and maximum static pressure from 0.30 H₂O. Options include tachometer output, locked rotor alarm and IP55-sealing as well as pulse width modulation (PWM) and constant speed

controls. The operating temperature ranges from -20°C to +70°C, with a life expectancy (L10) of 65,000 hours at 45°C.

Orion Fans, 800-323-2439, www.orionfans.com

Electromechanical/Mechanical Devices: Miniature IP68-Rated Tactile Switch Features a Lifespan of 300,000+ Electrical and Mechanical Cycles

C&K Components' KMT0 Series of ultra-miniature tactile switches offer IP68-rated sealing. The switches are completely sealed and stay fully functional under water for a minimum of 5 hours at a depth of 2 m. In addition, the KMT0 Series is fully resistant to stringent conformal polymer coatings, including one of the smallest particle chemical vapors, parylene, which is used for coating printed circuit boards (PCBs) and medical devices. Featuring a lifespan of more than 300,000 [electrical](#) and mechanical cycles, the KMT0 Series tactile switch's ultra-low profile makes it appropriate for handheld and portable [electronic](#) device applications that require a small footprint, while the [IP](#) sealing is desirable for protection against perspiration and water in portable devices. The RoHS-compliant and halogen-free ultra-miniature switches feature a footprint of 3.0 mm x 2.6 mm with a height of 0.63 mm or 0.65 mm. The SPST normally-open switches are constructed with



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silver plating and are available with four operating forces: 1.0N, 1.6N, 2.3N and 3.4N. Maximum overload is 30N.

C&K Components, 617-969-3700, www.ck-components.com



Semiconductors & ICs: Controller Helps Turn Existing Coax Infrastructure Into Reliable Whole-home Entertainment Network



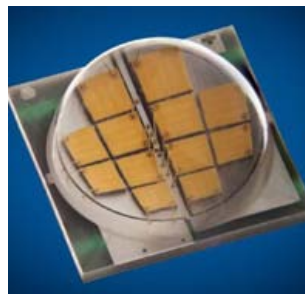
Entropic introduced its EN2710 MoCA 2.0 Coaxial Network Controller. Offered as a complete end-to-end MoCA 2.0 solution with MAC, PHY, analog, RF transceiver and RF front-end functionality, it provides 400 Mbps of application throughput in its basic configuration, and is scalable to support 500 Mbps Turbo mode and 800 Mbps /1 Gbps in channel bonded modes. According to the company, this high performance home networking device delivers more than twice the speeds of existing MoCA solutions. Additionally, by using the latest 40-nm semiconductor wafer processes, Entropic's solution is presented as capable of transforming current coaxial infrastructure into a highly efficient, affordable and reliably predictable whole-home entertainment network, ready to meet the new video delivery demands required by converging

broadcast-broadband networks.

Entropic, 858-768-3600, www.entropic.com

Lighting, LEDs, Optoelectronics and Displays: LED Promises Unprecedented Performance

Cree, Inc. announced a new [lighting](#)-class [LED](#) designed for high-output, small form-factor directional lighting applications. The XLamp MT-G LEDs are optimized for 35 W to 50 W halogen MR16 retrofit bulbs and other accent, track, display and down lighting. The multi-die LED features the company's EasyWhite technology to deliver consistent color in a small, highly efficient package. The XLamp MT-G LED is said to be the first in the industry binned and tested at 85°C which can simplify luminaire design calculations and speed time-to-market. With a 9-mm x 9-mm footprint, this LED delivers up to 560 lumens at 1.1A at 85°C or up to 1525 lumens at 4 A at 85 degrees C in warm white (3000K).



Cree, Inc., 919-313-5300, www.cree.com

Packaging, Enclosures, Clips and Interconnects: J1772 Connector is Touted as EV Industry's First UL-rated Level II 75-A, Four-hour-or-less Full Charging Solution

ITT Interconnect Solutions' EVC Series J1772 connector, based on HEP spring contact technology, is asserted to represent the industry's first UL-rated, J1772 Level II 75-A four hour or less full charging solution. Charging options include 75 A/240 V, 30 A/240 V, 15 A/240 V, and 15 A/120 V. Designed specifically for



electric vehicle charging applications, the J1772 is capable of performing Level I and II charging from a low-end of 15A/120V to a high-end range of 75A/240V. The inlet connector includes finger-tip protection on the power and ground pin contacts and also features an enhanced cable management system using ITT's VEAM CIR series backshells. By using a cable with a greater degree of flexibility, ease-of-use is assured on retractable design charging units. The new UL-approved J1772

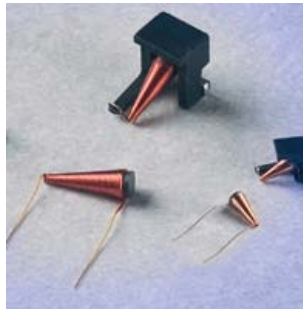
Level I and II electric vehicle charging robust coupler and inlet connectors are suitable for electric passenger vehicles, home charging units, public infrastructure charging units, roadside assistance trucks, electric fleet vehicles, and electric motorcycles.

ITT Interconnect Solutions, 714-557-4700, www.ittcannon.com

Passive and Discrete Components (tie)

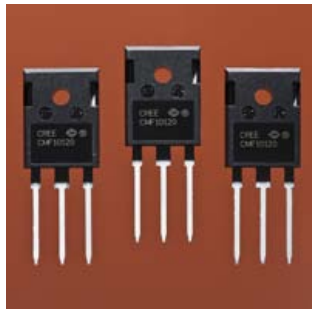
Conical Inductors Address Broadband Industry's High-frequency, High-power and Wide bandwidth Trends

Gowanda Electronics' inaugural line of Ultra-Broadband Conical [Inductors](#) – the "C" Series – responds to the market demand for more standard and custom broadband conical design options for communication applications. Gowanda's new broadband product line offers standard thru-hole, flying lead (self-leaded) and surface mount (SMT) designs in a variety of sizes with up to 150-W power capability, desirable co-planarity, and robust construction. Gowanda's broadband conicals address industry design trends requiring higher frequency, higher power, smaller size and wider bandwidth components. The conicals' 3-in-1 design (replacing three inductors with one conical) reduces the number of components, thereby saving precious board space and enhancing performance. The conicals also provide a predictable frequency response and repeatable RF performance. The unique broadband response of the coil is attributed to its precision winding, wire selection and coil configuration.



Gowanda Electronics, 716-532-2234, www.gowanda.com

1200-V SiC MOSFET Helps Conserve Energy for 3-10 kW Alternative Energy, Power Apps



Cree, Inc. extended its Z-FET family with a lower amperage 1200V SiC MOSFET. The new device features a smaller current rating that enables it to replace the silicon transistors (IGBTs) that are currently used in power inverter designs between 3 kW and 10 kW. Applications include high-voltage power supplies and auxiliary power electronics circuits, especially those designed for conversion of three-phase input power, solar power inverters, industrial motor drives, high-power DC data center power architectures, and PFC circuits. Cree's new SiC MOSFET is rated for 12 A at its operating [temperature](#) of 100°C and delivers blocking voltages up to 1200 V with a typical on-state resistance (RDS(ON)) of 160 mΩ at 25°C. Cree's new SiC MOSFET

exhibits an RDS(ON) value that remains below 200m Ω across its entire operating temperature range to reduce switching losses in many applications by up to 50 percent, increasing overall system efficiencies up to 2 percent while operating at 2- to 3-times the switching frequencies when compared to the best silicon IGBTs, according to the company.

Cree, Inc., 919-313-5300, www.cree.com

Power Sources: Iron Phosphate Battery Presents as a Sealed Lead Acid Battery Replacement

Micro Power announced IronWorks, an Iron Phosphate battery solution, which serves as a drop-in replacement for Sealed Lead Acid (SLA) batteries. This new standard U1 format battery intended for use with mobile equipment offers light weight, long runtime, fast charge time and long cycle life. IronWorks is based on Lithium Iron Phosphate. The battery features thousands of cycles with full 100 percent discharge, zero maintenance for several years; and fuel gauging and battery status are reported via standard SMBus. They accept SLA charge regimens and tout a robust mechanical design.

Micro Power, 800-576-6177, www.micro-power.com



Sensors: Hall-Effect Magnetic Encoder is Presented as Highest-resolution for Industrial Apps



Avago Technologies announced what is said to be the market's highest-resolution Hall-effect magnetic encoder. The new AEAT-6600-T16 encoder provides advanced positioning information with the robust performance required for the harsh operational environment of industrial applications. This magnetic encoder offers up to 16-bit resolution for precise angle measurement over a full rotation of 360 degrees. The use of magnetic technology for [motion control](#) and sensing activities enables non-contact operation free from mechanical wear and tear. The encoder is a system-on-chip combining integrated Hall elements, analog [front end](#) and [digital](#) signal processing in a single device. It features built-in programmability to allow customized encoder

settings and offers simple one-step alignment with no calibration required.

Avago Technologies, 800-235-0312, www.avagotech.com

Software: MPLAB X Unites Microchip Development Software

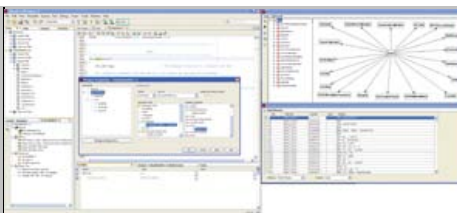
Microchip Technology has a new open-source integrated development environment (IDE), called MPLAB X, that runs with the Linux, Mac-OS and

Windows operating systems and covers all of the company's PIC microcontrollers, dsPIC digital-signal controllers, and memory devices. The free IDE lets you manage several projects, format code as you

choose, add bookmarks such as "TODO" and "FIXME," do simultaneous debugging, use an advanced editor, and create call graphs. The MPLAB X software also includes "code completion" that anticipates what you will type next, helps you complete a command, and identifies previously defined variables and function calls. Users can import projects created with earlier tools and Microchip will continue to support the current MPLAB 8 tools. The MPLAB X IDE maintains compatibility with third-party and Microchip tools such as MPLAB ICD 3, PICkit 3, and MPLAB REAL ICE. The MPLAB X IDE builds on the open-source NetBeans platform, so engineers and designers can take advantage of NetBeans software components and plug-ins. And MPLAB X users can customize the IDE as they wish.

– Jon Titus

Microchip Technology Inc., 888-624-7435, www.microchip.com



Test and Measurement: Oscilloscope Combines Scope and Spectrum Analyzer Functionality In a Single Instrument



Tektronix introduced what it asserts is the first mixed domain oscilloscope (MDO) that delivers the functionality of an oscilloscope and a spectrum analyzer in a single [instrument](#). The MDO4000 Series gives engineers the ability to capture time-correlated analog, digital and RF signals for a complete system view to rapidly solve complicated design issues, saving days or even weeks of debug time. The instrument allows users to capture time-correlated analog, digital and RF signals across four analog, 16 digital and one RF channel. The RF input frequency range extends to 6 GHz and provides a capture bandwidth of greater than or equal to 1 GHz at all center frequencies.

Users can also see up to four decoded serial and/or parallel buses at one time on the same display, so they can make accurate timing measurements to understand delays and latencies between command/control events in their design and changes in the RF spectrum. The MDO4000 also allows designers to see the RF spectrum of a signal at any point in time within a long acquisition to see how the spectrum changes over time or with device state.

Tektronix, Inc., 800-833-9200, www.tektronix.com

Wireless: Front-end Module Enables WiMAX-Coexistence Operation on Same Device

Avago announced a complete RF front-end module (FEM) for WiMAX radios in mobile handset or portable PC applications. The AFEM-S257 module is designed for coexistence operation of WiMAX with other cellular and WiFi radios in the same device. The module features two receive ports and a single transmit port in a small 5 mm x 7 mm x 1 mm package that is appropriate for space-constrained mobile applications in the



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