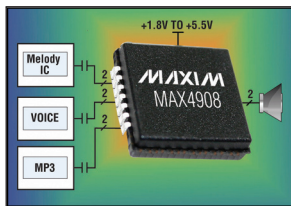


Analog Switches

Maxim Integrated Products' MAX4908/MAX4909, dual single-pole, triple-throw (SP3T) analog switches handle negative signals with a single-positive power supply. The devices feature integrated shunt resistors to ground. This feature reduces audio popping and clicking sounds by depleting the capacitive charge, which commonly builds up on the unconnected port of the switch, to ground.

In addition, the device has an extremely low 0.38- Ω on-resistance, low 0.35- Ω on-resistance flatness and low 0.02% total harmonic distortion. The AX4908/MAX4909 are both available in a 12-bump UCSP (1.5 mm \times 2 mm) and a 14-pin TDFN package (3 mm \times 3 mm). Prices start at \$1.20 each in 1000-unit quantities.



Maxim Integrated Products
Sunnyvale, Calif.
www.maxim-ic.com

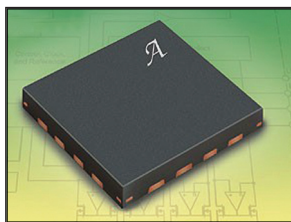
Charge Pump White LED Driver

Allegro MicroSystems has released the A8435, a high-efficiency charge pump white LED driver. The device is a solution for portable electronics display applications. Using a proprietary control scheme (1x, 1.5x), this LED driver can output well-matched LED currents for up to four channels, while maintaining the highest efficiency over most of the Li-ion battery lifetime.

The part accepts an input range of 2.7 V to 5.5 V and delivers up to 30 mA for each of the four regulated current

sources. It can deliver a total output current of 120 mA, meeting the requirements of most Li-ion battery-powered white LED backlight applications. Outputs can also be combined for white LED flash/torch applications.

The A8435 is available in a 0.75-mm profile, 3-mm \times 3-mm MLP-16 package (A8435EES).



Allegro Microsystems
Worcester, Mass.
www.allegromicro.com

LED Driver

Linear Technology's LT3491 is a high-efficiency constant-current white LED driver. The LT3491 features an integrated Schottky diode on-chip, eliminating the external diode. A high-side LED current-sense topology enables the LED cathode to be connected directly to ground, creating a single-wire current source. The LT3491 is designed to drive up to six white LEDs from a single Li-ion cell at efficiencies over 75%.

The LT3491 switches at 2.3 MHz, allowing the use of a tiny inductor and capacitors while keeping switching noise out of critical RF frequency bands. Its combination of high efficiency, low noise and small "total solution" footprint make it ideal for handheld applications requiring up to six white LEDs.

The LT3491 is available from stock in an eight-lead SC70 package. Pricing starts at \$1.25 each in 1000-piece quantities.

Linear Technology
Milpitas, Calif.
www.linear.com

Buck Regulator for GPUs

Intersil has introduced the ISL6263, a single-phase buck voltage regulator that powers next-generation graphics processing units (GPUs) or graphics cores used on Intel's Santa Rosa platforms. This device reduces power consumption and enhances the performance of the GPU by dynamically changing output voltage and operation modes corresponding to the advanced GPU control protocol.

The modulator at the heart of this power system is created using Intersil's patented Robust Ripple Regulator (R3) technology. Compared with traditional single-phase buck regulators, Intersil's R3-based converters provide better transient response and efficiency, and are capable of changing the voltage output when the GPU is in suspend or sleep mode.

The ISL6263 is available in a 32-lead thin QFN package. Pricing is \$2.70 each in 1000-unit quantities.



Intersil
Milpitas, Calif.
www.intersil.com

SMT Inductor/Transformer

The DR359 Series SMT Inductor/Transformer from Datatronics features a unique dual coil design. With a low seated profile standing only 0.315 in. above the circuit board in a square package, the DR359 Series Inductor/Transformer is a versatile magnetic component featuring both parallel and series functionality. The DR359's unique dual coil design allows circuit designers to take

advantage of its ability to support circuit requirements for either an inductor or transformer.

The DR359 Series Inductor/Transformer features an inductance range from 0.47 mH to 1000 mH. The parallel windings feature an inductance range from 0.419 mH to 1005 mH (+20%), with a DCR from 0.00195 Ω to 1.6600 Ω . The series windings inductance ranges from 1.676 mH to 4020 mH (+25%), with a DCR from 0.0078 Ω to 6.640 Ω .

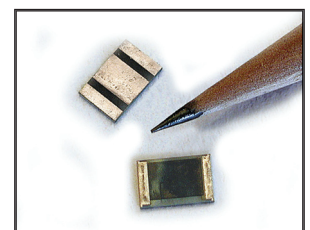
The DR359 measures 0.493 in. square and is priced from \$0.25 each in typical production volume.

Datatronics
Romoland, Calif.
www.datatronics.com

Chip Resistors

APX Series Aluminum Nitride (AlN)-based components from International Manufacturing Services (IMS) give designers the ability to upgrade power handling capability without increasing footprint size. Due to its greater thermal conductivity properties, AlN allows designers to avoid costly redesigns by packing more power into a same-sized footprint.

The APX Series products are manufactured using robust, thick film technology, and are suited to demanding applications. They are available in 10- Ω to 2-k Ω resistance values.



International Manufacturing Services
Portsmouth, R.I.
www.ims-resistors.com

CSTBT IGBTs

Powerex has introduced a family of 1700-V devices that use carrier stored trench gate bipolar transistor (CSTBT) IGBT technology. The new A-Series family, which replaces Powerex's KA-Series in the range of 75 A to 400 A, offers compatible packaging with the 1200-V CSTBT family, to make the addition of drives for 575-V and 690-V lines an easy transition.

The A-Series reduces on-state losses by 35%, a level that is equal to third-generation 1200-V devices. The devices are available with current ratings of 75 A, 100 A, 150 A, 200 A, 300 A and 400 A at 1700 V in dual or half-bridge packaging.

Pricing for the A-Series family of products in quantities of 10 ranges from \$63 to \$282 each.



Powerex
Youngwood, Pa.
www.pwr.com

Configurable Power Supply

The A3600 from Powerstax is a series of low-profile 1U high, 19-in. rack-mount, configurable ac-dc power supplies. Capable of providing up to 3600-W output power, the A3600 offers users multi-output power solutions without extended lead times and high nonrecurring engineering costs.

The A3600 employs a modular construction using high-efficiency (greater than 90%) standard products from the Powerstax range. The A3600 offers combinations of single- or multi-output,

regulated dc power from a universal input mains supply of 85 Vac to 264 Vac. Input and output connection may be specified at the front or rear and may be cable entry, connector or safety stud as required.

With up to 18 isolated and adjustable outputs, it is possible to individually margin, enable, parallel or stack the outputs to provide multiple power variants. Features include zero-load operation and fully floating outputs that have standard output voltage ranges from 1.5 V to 58 V, few electrolytic capacitors (all long life), local and remote adjustment, and user-adjustable current limit and inhibit/enable functions.

Powerstax
Farnborough, England
www.powerstaxplc.com

CCFL Controller

Texas Instruments' (TI's) integrated, full-bridge phase-shift power controller for CCFL backlight power supplies is suited for LCD TV monitors and notebook computers. The flexible TPS68000 controller supports input voltages from 8 V to 30 V, and the integrated gate drivers can drive four external NMOS switches without external circuitry.

The device is capable of synchronizable constant frequency operation. It also has programmable phase delays of operating frequency for master-slave operation. It can regulate lamp voltage and current, and supports analog and burst dimming.

The TPS68000 controller's wide-input voltage range is suitable for designing inverter modules powered directly from regulated 12-V or 24-V rails, or any other source with output voltages in this range.

The TPS68000 is available in volume production. The

device comes in a 30-pin TSSOP package and is priced at \$2.50 each in quantities of 1000.

Texas Instruments
Dallas
www.ti.com

MOSFET Drivers

The TC4451 and TC4452 MOSFET driver circuits from Microchip offer peak output currents of 12 A. The devices feature latch-up immunity and a fast drive speed of 15 nF in 27 ns, which equip them to drive large MOSFETs and IGBTs in switch-mode power supplies and other applications.

The 12-A peak output currents of the TC4451 and TC4452 improve power-supply efficiency and simplify drive circuits.

Samples and production volumes are available. Pricing for the TC4451 and TC4452 drivers in the 8-pin SOIC and PDIP package options is \$1.44 each in 10,000-unit quantities. Pricing for the devices in the 8-pin DFN package is \$1.64 each in 10,000-unit quantities, and \$1.81 each in 10,000-unit quantities for the 5-pin TO-220 package.



Microchip Technology
Chandler, Ariz.
www.microchip.com

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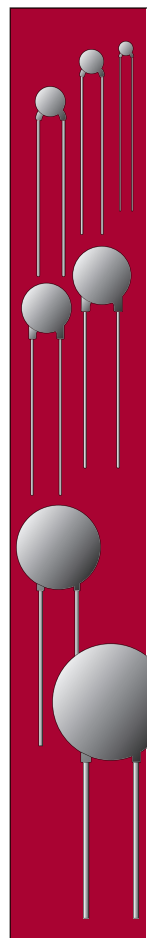
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Logic-Level MOSFET

International Rectifier (IR) has added to its logic-level trench HEXFET MOSFET family. The IRLR3110ZPbF is rated for 100 V and has an improved logic gate capability, resulting in only a 14% increase in on-resistance when going from a 10-V gate drive to a 4.5-V gate drive.

The device is Q101 qualified for automotive use up to the maximum junction temperature of 175°C, and features a 16-mΩ on-resistance at 4.5 V. The maximum drain current for the device, which is package limited, is 42 A. The package is a DPAK and the thermal resistance is 1.05°C/W. The $R_{DS(ON)}$ temperature coefficient is 2.67.

The IRLR3110ZPbF is

available immediately, and is priced at \$1.10 each in 10,000-unit quantities. Die are also available in various chip packaging media. *International Rectifier El Segundo, Calif.*
www.irf.com

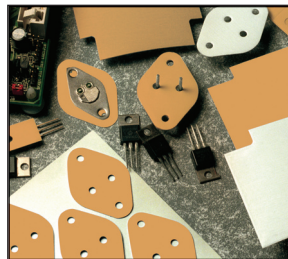
Thermal Film

T-gard 5000 from Laird Technologies' Thermal Product business unit is a thermally conductive, low-cost, film-based electronic insulator for switch-mode power supply devices used in telecommunication and computer networking products.

T-gard 5000 is a ceramic-filled silicone conformal coating on a high-temperature polyimide film, providing higher electronic insulating and thermal conduc-

tivity qualities than fiberglass-based insulators. This more flexible film-based insulator, while thinner and less expensive than fiberglass, offers superior cut-through resistance.

T-gard 5000 is available for volume distribution and is priced from \$0.015 to \$0.045 per TO-220 part, depending on purchase quantity.



*Laird Technologies
Cleveland, Ohio
www.lairdtech.com*

Fixed Chip Inductors

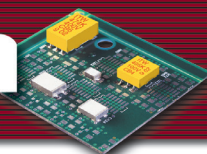
Tabtronics has announced the addition of a comprehensive line of fixed chip inductors for high-reliability surface-mount applications. The M83446 product line features space agency qualification (ESA 3201/008), excellent Q values even at high frequencies, very high self-resonant frequencies, extremely stable inductance values from -55°C to 125°C, optional tab terminations, a frequency range of 200 kHz to 1 GHz, and a weight of 0.07 g. In addition, RoHS-compliant versions are available.

Pricing for the M83446 series starts as low as \$7 per unit in quantities of 1000.

*Tabtronics
Rochester, N.Y.
www.tabtronics.com*

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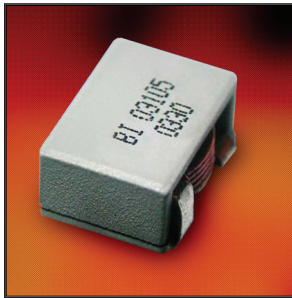
www.paktron.com

Compact Inductors

TT electronics' BI Technologies Magnetic Components Division has expanded its range of high-power inductors. The HM70 Series of high current, surface-mount, shielded inductors, which are rated up to 180°C, are suitable for tight board layouts in power supplies, dc-dc converters and modules.

The maximum operating frequency for the inductors is 1 MHz. Inductance for the series ranges from 0.63 μ H to 1.6 μ H at rated currents.

The inductors are available in 400-unit and 500-unit, 13-in. diameter embossed tape-and-reel packages. Typical pricing for the HM70 Series is \$0.67 each in quantities of 10,000.



BI Technologies
Fullerton, Calif.
www.bitechnologies.com

Baseplate Material

CPS offers aluminum silicon carbide (AlSiC), a metal matrix composite, ideally suited as a thermal management material for IGBT baseplates. These plates can be used in high-power traction, power control and fly-by-wire applications, which require thermal performance reliability. The IGBT baseplates are lightweight and offer high strength.

AlSiC's tailored, isotropic coefficient of thermal expansion (CTE) can be adjusted for specific applications by modifying the Al-metal/SiC-particulate ratio to match the CTE of the die or substrate.

AlSiC's CTE matching eliminates the need for thermal interface stacking and ensures IGBT baseplate compatibility with ceramic substrate attachments for high-power applications.

Coupled with its CTE matching, AlSiC's high thermal conductivity offers high reliability and longevity by preventing the bowing and flexing of packaging and substrate material.

CPS
Chartley, Mass.
www.alsic.com

Industrial Microcontroller

Dualcore Semiconductor's system-on-chip DCIC9907 microcontroller contains two ARM 946E cores, two CAN channels, two 10/100 Mbit Ethernet MACs with HW extension for real-time protocols, and a versatile motion-control logic capability, specifically designed for time-critical and other industrial control applications.

Although optimized for motion-control applications, key features support a wide variety of industrial applications. The two 10/100 Mbit Ethernet MAC ports have hardware extensions that support real-time protocols via Ethernet. The new DCIC9907 is ideally suited to time-critical, cost-conscious control applications. The DCIC9907 is available in an industrial temperature range, 305-pin BGA package at under \$20 each in volume quantities.

Dualcore Semiconductor
GmbH
Nürnberg, Germany
www.dualcore.com

EMI Filter

The CORCOM WG series EMI filter from Tyco Electronics is a high-performance EMI filter for applications requiring a low-cost method of providing industry compli-

ance for conducted EMI/RFI emissions. Providing a broad range of low-frequency common-mode performance, the WG is available in six standard filter versions.

WG series filters are rated for up to 16 A at 250 Vac at 50 Hz or 60 Hz. Leakage current ranges from 0.10 mA to 1.27 mA, depending on the model selected. Insertion loss data is available at www.corcom.com.

CORCOM WG series filters are packaged in an industry-standard tubular design, are RoHS compliant and are equipped with five 0.25 FASTON quick-connect terminals and an M8 \times 1.25-in. mounting stud.

Prices range from \$2.52 to \$3.02 each in 1000-piece quantities.



Tyco Electronics
Harrisburg, Pa.
www.tycoelectronics.com

Boost Converter ICs

Vishay Intertechnology offers two new boost converter ICs designed to maximize the power available from single- or dual-cell NiMH or alkaline battery packs by providing 85% dc-dc conversion efficiency and operating from battery voltages as low as 0.85 V.

Delivering this high level of efficiency over a broad current range of 1 mA to 500 mA, the SiP12502 and SiP12503 will prolong operating time and reduce component count in portable and battery-powered electronics.

The booster converter ICs offer a choice of fixed 2-V, 3.3-V and 5-V (SiP12502) or adjustable 2-V to 5-V

(SiP12503) output voltages with an 0.85-V to 5-V input voltage range. An internal low-resistance power MOSFET switch enables startup at the low 0.85-V input voltage, and thus maximizes the useful power available from battery cells. The integrated MOSFET is rated for a 0.24- Ω impedance at a 3.3 V output.

The SiP12502 and SiP12503 are available in a lead-free, six-pin, thermally enhanced PowerPAK MLP33 (DFN-6, 3-mm \times 3-mm) package. Pricing for 1000-piece quantities starts at \$0.80 each.

Vishay Intertechnology
Malvern, Pa.
www.vishay.com

AC-DC Switcher

XP Power's ac-dc switching power supply enables users to specify any voltage level up to the maximum rating of each output while maintaining full agency approvals. The RCL175 is available with one to four outputs: 3 V to 60 V on output one, 5 V to 60 V on output two, and 5 V to 30 V on outputs three and four. Outputs three and four are isolated, allowing parallel or series connection for further flexibility. Output one is user-adjustable by \pm 10% and the other outputs track this by the same percentage.

The range is based on 18 standard models that can be quickly modified, both electrically and mechanically, for individual applications. Mechanical options include open frame, U-channel, U-channel with cover and U-channel with fan cover. Molex or terminal block connectors can be provided.

The RCL175 is available now priced from \$155 each for 100-plus quantities.

XP Power
Anaheim, Calif.
www.xppower.com **PETech**