It's not just size that counts

But, when it comes to DC-DC converters, the input voltage range as well. RICHARD WILSON looks at what's on offer

Input voltage range seems to be just as important as module size for the latest generations of point of load DC-DC power converters.

Tyco Electronics Power Systems is one supplier which has increased the input voltage range and add sequencing on the outputs to its existing range of non-isolated point of load (POL) DC-DC converters.

For example, the 6A MicroLynx II, 10A Austin Lynx II and 16A SuperLynx II nominal 12V converters can accept input voltages ranging between 8.3V-14V and produces a regulated output voltage of 0.75Vdc-5Vdc, programmable using an external resistor.

Similarly, the 6A MicroLynx II, 10A Austin Lynx II and 16A SuperLynx II converters, all with nominal 5V input voltages, take inputs in the range of 5.5V-2.25V. The regulated output voltage of 0.75Vdc-3.63Vdc is programmable within one per cent, using an external resistor.

These are surface mount modules with the largest being the Austin Lynx II and SuperLynx II measuring 33.00x13.5x8.28mm, while the MicroLynx II converters are only 27.9x11.43x7.29mm.

The number of small format non-isolated DC-DC converters available to the designer has been growing over the last few months. Artesyn Technologies' E-class series contains 12V input POL DC-DC converters with 5, 10 or 15A outputs. The input voltage range is marginally narrower than for the comparable Tyco part, accepting 10V-14V. Output voltages can be set anywhere from 0.8V to 3.63V by means of a single external resistor.

Power-One's 17A non-isolated POL converter has an even wider input voltage range from 3.0 to 13.2V and a programmable output 0.7 to 3.6V. It effectively covers both nominal 5V and 12V variants of other suppliers in one product. The vertical SIP package is also small measuring 7.85x32mm.

Lambda's Tarka range of POL converter has an input voltage range of 3V to 13V.

SynQor's NiQor has a narrower input range (3 to 5.5V) but delivers up to 20A at 3.3V, 2.5V, 1.8V, 1.5V, 1.2V and 0.9V.

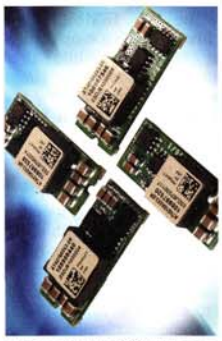
Artesyn's 10A and 15A variants are available in surface mount packages measuring 33x13.5x8.2mm. The 5A is available in a 20.3x11.4x5.97mm package. The 15A version is also available in a single-in-line form factor for through-hole mounting.

Artesyn is one of three suppliers which have formed an alliance to promote the use of small, on-the-board point-of-load modules in distributed power designs.

Artesyn Technologies and Emerson's Astec Power division have signed a second source license with Texas Instruments to standardise technology for pin-compatible, non-isolated, point-of-load DC-DC voltage converters.

"By combining our complementary strengths, Astec Power, Artesyn and TI are uniquely positioned to stimulate the rapid growth of this market by offering pin-compatible modules," said Mark Rice, v-p DC-DC sales at Astec Power.

In September Vicor introduced its first in a range of POL power converters which is designed to sit on its factorised bus architecture. Vicor's approach differs from other suppliers in that it offers isolated point of load devices, believing there is a problem with ground currents, generating unwanted noise with the more traditional non-isolated device.



Working from a 48V input and measuring 32x21.5x6mm, this device called the V-I chip voltage transformation module, will deliver an impressive 80A at 1.5V.

Another isolated DC-DC converter comes from Astec Power. This standard sixteenth-brick converter is a 50W surface mount module.

The ALX series operates from a 36V to 75V input bus voltage and delivers up to 20A of current from the 1.8V and 1.2V models, 18A from the 2.5V and 15A from the 3.3V units.

Ericsson Power Modules' 80A PKM-C family of DC-DC modules come in the larger quarter brick format and incorporate a footprint design called 'Double-P' to improve thermal behaviour. And to keep the maximum current per pin below 50A, and preferably to a maximum of 40A.

www.vicoreurope.com
www.power.tycoelectronics.com
www.artesyn.com
www.astec.com
www.power-one.com
www.ericsson.com/products/powermodules
www.synqor.com

EMI filter for DC-DC conversion

Vicor has introduced an active EMI filter for 48V DC-DC converter applications. The QPI-1 delivers over 40dB of common-mode and more than 80dB of differential-mode noise attenuation at 500kHz from a 24.5x24.5x5.1mm surface-mount package, said the firm. Active filtering eliminates ringing on the input of the converter in response to load and line transients. An active filter attenuates noise over the entire frequency range. There are no resonant elements that can amplify the noise. The QPI-1 meets the specifications of the international 36 to 76Vdc telecoms bus, including the 100V, 100ms surge. Rated at 12A, the unit supports single or multiple DC-DC converters up to 576W at nominal line voltage. Units can be placed in series for higher attenuation or paralleled for higher currents.

FURTHER INFORMATION
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Network processors perk up with security features

Despite concerns over the networking market processor developers Agere Systems, Motorola and Wintegra are offering comms chips with design-relevant features such as voice-over-ATM, security and Gigabit Ethernet.

Aimed at asynchronous transfer mode (ATM)-based wireless infrastructure networking, Agere Systems is offering a performance boosting coprocessor to support its APP 500 5Gbit/s network processor chip.

The APP100 effectively takes on the ATM Adaptation Layer 2 functions needed for voice over ATM processing, usually run on the host CPU. It processes voice signals at speeds of up to 622Mbit/s.

The chip also simultaneously processes 32,000 voice channels. It is sampling later this month with production quantities are planned for next April.

Motorola has added security features to its PowerQUICC III family of communications processors. The PowerPC-based MPC8555 also comes with 256kbyte of Level 2 cache. The chip offers a security core capable of single-pass encryption and authentication that is required by security protocols such as IPSec, SSL and 802.11i.

The MPC8555 device integrates two main processing blocks: e500 PowerPC core with 256kbyte of Level 2 cache and a Risc-based communications processor module for the peripherals tasks. The PowerPC core will be offered with clock speeds scaling from 533MHz to 833MHz.

Wintegra's latest access packet processors the WinPath WIN747 and WIN740 are intended to support DSLAM access device design employing Gigabit Ethernet uplinks or requiring on-board support of numerous TDM channels.

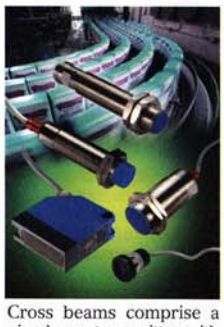
The devices feature two Risc datapath engines and two 10/100/1000Mbit Ethernet MACs. 16 serial ports, each provide T1/E1 and T3/E3 connectivity. The two devices also provide multi-PHY support, 127 on each UTOPIA port. In addition, the control plane device (WIN747) integrates a 5Kc MIPS core.

The Win747 and Win740 are scheduled to sample in Q1, 2004.

www.wintegra.com
www.agere.com
www.mot-sps.com

Sensors for OEMs

The X-Sensors range of proximity sensors from Switchtec includes inductive, thru-beam, area and contrast sensors. Devices are aimed at OEMs and end users in the packaging industry, for use as security devices, for product line management and in automotive applications. Thru beam devices offer easy alignment and high contamination immunity for use in 'dirty' applications. The receiver/emitter combination is able to operate at up to 4m apart. Inductive sensors comprise amplified sensors operating at a nominal 10 to 30Vdc over a switching distance of 2mm in shielded form, and 4mm unshielded.



Cross beams comprise a nine-beam transmitter with microcontroller designed to operate with the matching receiver unit.

FURTHER INFORMATION
SWITCHTEC
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