24th Annual
Product of the Year Awards

From the thousands of products introduced in 1999, the editors of Electronic Products have chosen the most outstanding. The selections are based on significant advances in technology or its application, a decided innovation in design, or a substantial gain in price-performance. As usual, picking winners was made difficult by the many impressive products announced during the year. Here is a product by Emco High Voltage chosen as a 1999 award winner.

Q Series high-voltage dc/dc converter
5-kV dc/dc converter breaks new ground in size, performance

High-voltage power supplies took a quantum step in size reduction last year with the introduction of the Q Series ultraminature high-voltage dc/dc converter. Several times smaller than other 5-kV supplies, the converter measures just 0.5 (L) x 0.5 (W) x 0.5 (H) in and weighs 0.15 oz. In addition, the converter sacrifices no performance as it exhibits an output ripple of 0.05%—half that of many larger converters.

The converter makes extensive use of surface-mount components to achieve the dramatic size and weight savings. Previously, high-voltage dc/dc converters have been too large and bulky for an emerging generation of portable battery-powered products such as field-emissive flat-panel displays and small scientific instruments. The Q Series overcomes those limitations.

Two versions of the supply are available: the Model Q50 with positive output polarity and the Model Q50N with negative output polarity. Both versions need no external components and have no minimum loading requirement.

Specifications include an input voltage of 0 to 5 Vdc, an output power of 0.5 W (1.25 W optional), a turn-on voltage of 0.7 V, an isolation voltage of 500 V, and an operating temperature range of -10°C to +70°C. The converter comes in an encapsulated glass-filled epoxy package.

As the smallest highest-performing 5-kV dc/dc converter, the Q Series makes possible a number of portable applications requiring very small size and high performance.

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