

Planar Transformers For Active-Clamp Forward Topology And Wide Input Range

[Champs Technologies'](#) P26R6-AC offline series of standard planar transformers offers performance proven in many existing customer applications. The series is designed for high efficiency and power throughput via a forward converter active-clamp topology on the input side and secondary-side synchronous rectification control on the secondary side. The transformers are also optimized for wide input range (Fig 1.)

According to the vendor, these transformers boast the lowest achievable volume for ac offline applications including the lowest achievable leakage inductance. They also feature multilayer PCB optimization for the lowest ac resistance and proximity loss.

The series covers input voltage ranges of 38 to 180, 50 to 160, 88 to 400, 150 to 400 and 270 to 400 Vdc. Power levels range from 140 to 196 W. Transformer footprint is 27 mm (width) x 32.7 mm (length) x 15 mm (height) (Fig. 2).

These transformers meet UL and IEC 60950-1 clearance/creepage Class II, reinforced insulation, peak working voltage 1400 Vpk. They also meet the IEC 61180-1 peak impulse withstand voltage of 8 kV. These components are derived from customer verification in many supported applications.

Typical specifications include 94% to 95% efficiency and a 45°C to 65°C temperature rise above ambient. The transformers are also available with a thermal pad or heat sink for lower temperature rise.

This series includes a wide variety of part numbers, designs and turns ratios in stock with surface-mount, thru-hole, pad-to-pad, and embedded planar options. For more information, see the P26R6-AC [page](#).

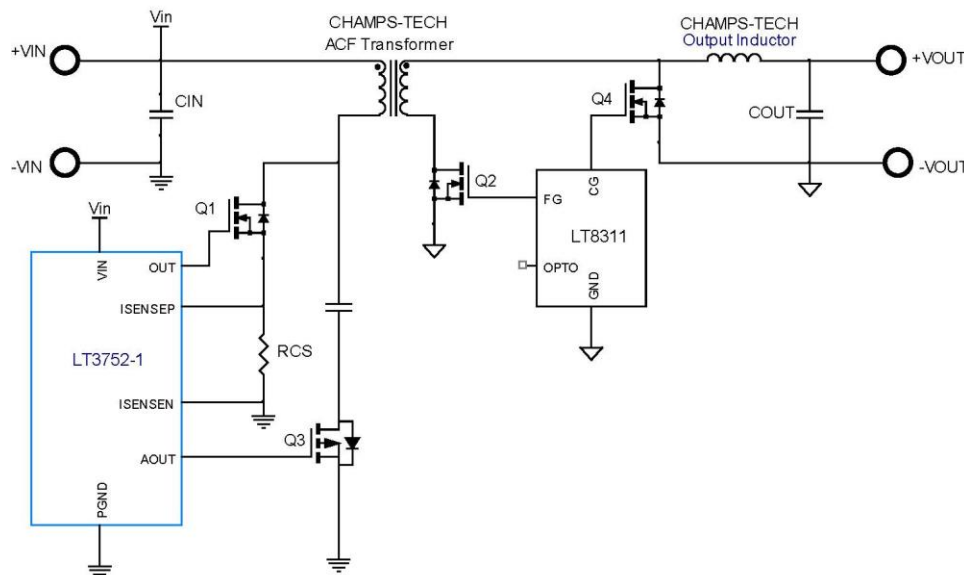


Fig. 1. The offline series standard planar transformers are optimized for high efficiency and power throughput in active-clamp forward converters with wide input voltage range.

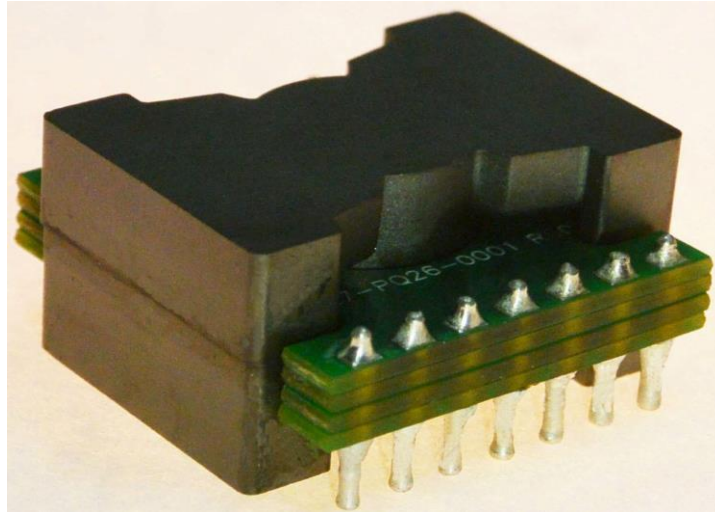


Fig. 2. The P26R6-AC series includes a wide variety of part numbers, designs and turns ratios in stock with surface-mount, thru-hole, pad-to-pad, and embedded planar options. The series covers input voltage ranges of 38 to 180, 50 to 160, 88 to 400, 150 to 400 and 270 to 400 Vdc at power levels ranging from 140 to 196 W.