

APPLICATION NOTE 529

# 15V Input Converter Generates -185V at 50mA

Additional Information:

- [Quick View Data Sheet for the MAX668](#)
- [Quick View Data Sheet for the MAX4130](#)
- [Technical Support: Power](#)

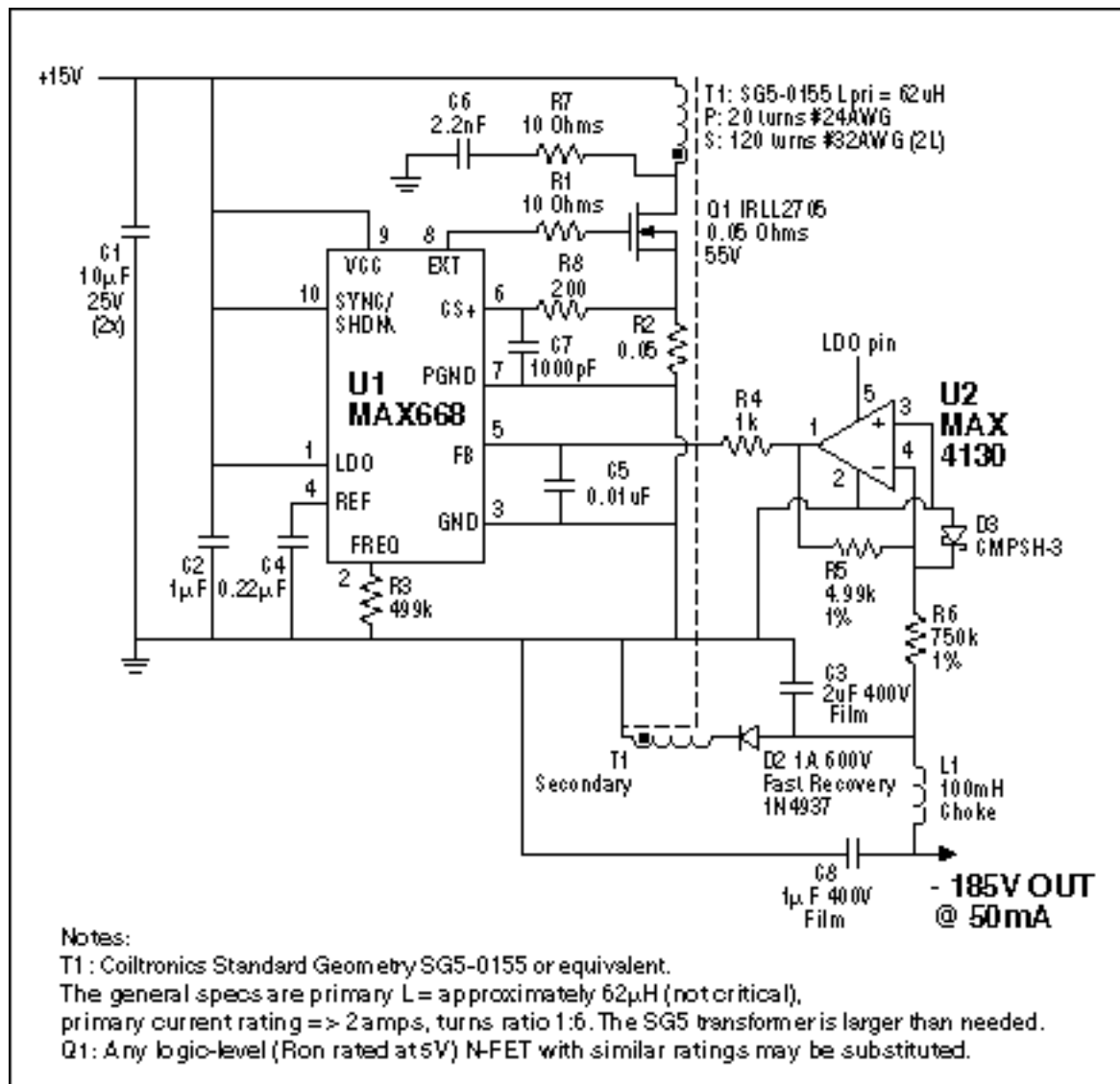


Figure 1. This circuit uses the MAX668 and a transformer (which will need about a one-to-six turns ratio) to make a flyback converter. The op amp inverts the feedback from the negative output voltage.

The circuit above generates -185V at 50mA from a +15V input. Based on a MAX668 transformer flyback application, the circuit employs a custom transformer to generate -185V through a combination of turns ratio and duty cycle. The transformer is designed on an SG5-size bobbin to facilitate the winding and to decrease the leakage inductance.

D2 is chosen as a fast-recovery diode to moderate the cost for a high-breakdown voltage part. Because the diode will see  $185V + (6 \times V_{in}) + \text{flyback}$  due to leakage inductance, a 600V rating is necessary. C3 is chosen as a film capacitor to get high voltage rating and high ripple-current capacity. A secondary LC (L1 and C8) reduces output ripple from 100mVp-p to less than 5mVp-p.

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### Related Parts

MAX4130: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

MAX668: [QuickView](#) -- [Full \(PDF\) Data Sheet](#) -- [Free Samples](#)

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