

Reduced Displacement Current & Improved EMI with No Additional Winding

■ Description

- ▶ Transformer structure for a flyback converter to reduce displacement current between input and output windings and improve EMI
- ▶ Portions of the input or output winding that are located at the interface between input and output winding may cover the bobbin length and act as balance winding

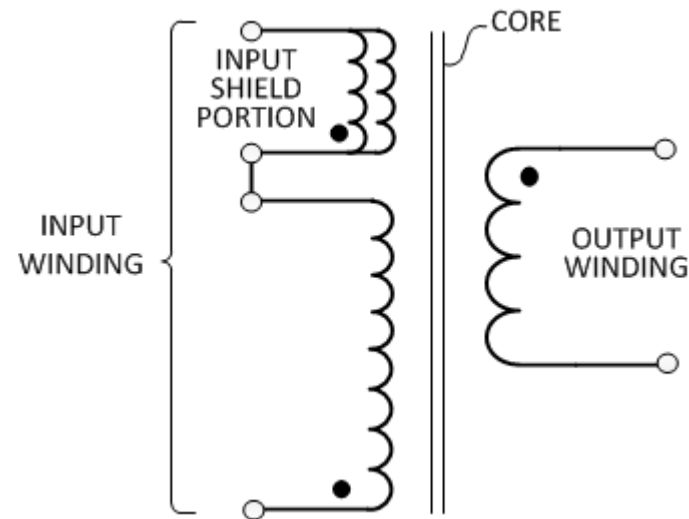


Figure 1. Electrical coupling of transformer windings with portion of input winding acting as balance winding

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■ Benefits

- ▶ Saves on space, size and cost of the printed circuit board (PCB) by:
 - Eliminating external EMI filter or by reducing size and cost of an external EMI filter
 - Simplifying winding structure and reducing bobbin pin out because it does not require additional balancing or shield winding

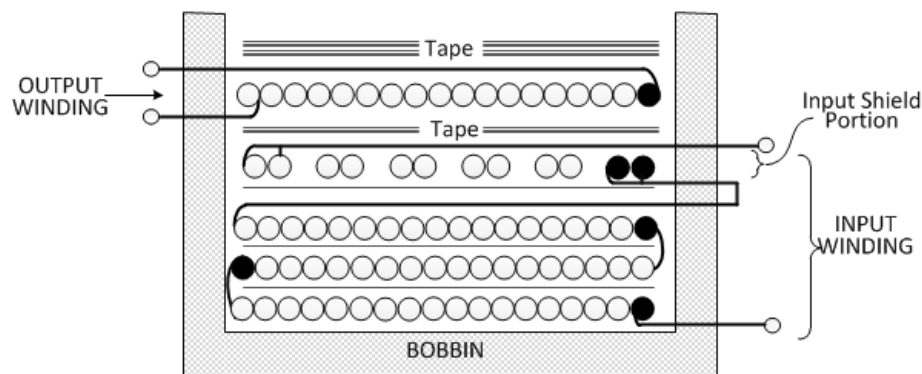


Figure 2. Transformer winding structure when primary winding is at inner layer and portion of input winding acts as a balance winding

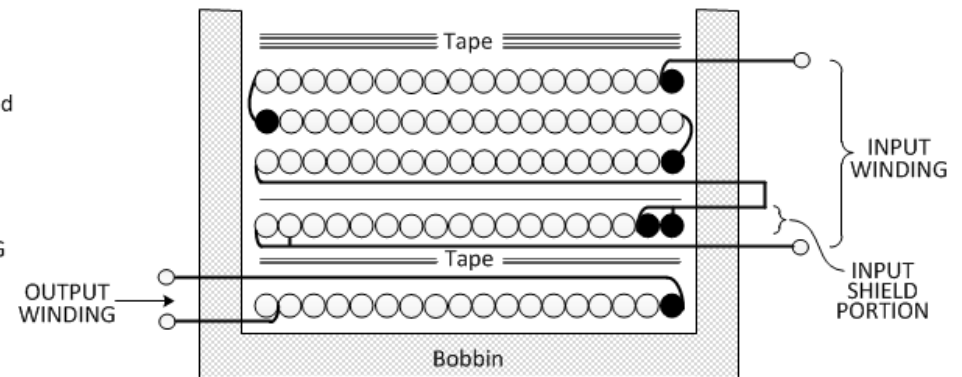


Figure 3. Transformer winding structure when primary winding is at outer layer and portion of input winding acts as a balance winding