Advanced E-Shield[™] with Multi-Balance Windings in Multi-Output Transformer

Description

- Multi-output transformer structure with improved electromagnetic interference (EMI) performance
- Blocks displacement current from input to all output windings by using:
 - Core cancellation winding connected to input winding with the other end floating
 - Input balance winding connected to the input winding
 - Output balance winding connected to the common terminal of multi-output windings
 - Input and output balance windings positioned next to each other on the core with floating end terminals (No Connect, NC)
 - Multi-output windings are interleaved on the core



Figure 2. Electrical coupling of multi-output transformer windings with multi-balance windings

US Patent #6,995,990; 7,236,078; 7,355,871 Rev: 1; Dec 2016; PI.0041X

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Advanced E-Shield[™] with Multi-Balance Windings in Multi-Output Transformer

Benefits

- Saves on space, size and
 cost of printed circuit board
 (PCB) compared to
 conventional solutions by:
 - Eliminating the external EMI filter components (common mode choke and/or the X-capacitor)
 - Eliminates the Y-capacitor and possibly two resistors



Figure 2. Multi-output transformer winding structure with multi-balance windings

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