

Winding arrangements of output transformers

The winding arrangement of an output transformer can be optimized to achieve good common mode rejection and/or good bandwidth. Good CMRR is desirable to avoid mode transfer (common mode signals are transformed to differential mode signals) in the output transformer. This sheet explains the different winding structures for our output transformers

With Faraday shield

Faraday shields, placed between the primary and the secondary windings, are used to reduce the capacitive coupling. A transformer with Faraday shield is more complicated to manufacture but can be used with any type of output drive. In our Faraday shielded output transformers, such as the LL1517 and the LL1518 each coil is wound in three sections.

Primary cold ends facing secondary winding

The primary and secondary windings can be arranged such that the cold (grounded) side of the primary winding faces the secondary winding. As the voltage swing in this end of the primary winding is only a fraction of the total swing, the capacitive coupling is greatly reduced. This technique requires different winding arrangement for unbalanced drive (e.g. LL5402) or balanced drive (e.g. LL1524).

Five-section structure for increased bandwidth

In a five-section structure, leakage inductance is minimized almost to the extent of a bifilar wound transformer. By letting the electrical potential of each layer of the secondary winding follow the potential of the adjacent primary winding, capacitive coupling is reduced, and thus high bandwidth is achieved.

