

How does FKS reduce EMC interference in transformer design ?

1.FKS often collects the noise of the distributed capacitance by adding a shielded copper foil or winding between the primary stage and shunt it to other places through the primary ground.

The thickness of the shielded copper foil is usually 0.1mm, in order to meet the insulation requirements, the backbonded copper foil is generally used, one end of the welded enamelled wire is primarily grounded, the other end does not overlap, and the total number of turns is 0.9. The shielding winding is relatively simple, the wire diameter is mostly 0.2~0.3mm, and it can be wrapped around a layer, one end is primary grounded, and the other end is cut and buried in the online package.



2. Copper foil is added to the periphery of the transformer, the main purpose of which is to reduce radiation. The conventional operation is to wrap a ring of copper foil along the perimeter and

connect it with the secondary ground. EMI requirements are more strict for the cross copper foil, and the overlapping place is welded together to ground.

However, the peripheral copper foil should consider the primary insulation problem, so the width of the copper foil needs to be set reasonably to avoid poor voltage resistance. In addition, in order to facilitate the transformer process operation, the peripheral copper foil is mostly self-adhesive copper foil, and the thickness is mostly between 0.05 and 0.1mm.



3. The primary winding is placed in the innermost layer of the transformer, and all the outer winding can screen this layer. This method mainly considers that the drain of MOS tube produces unstable voltage, which affects the primary coil.



4. Reduce leakage as much as possible and reduce the peak current of the MOS switch tube, thereby reducing EMI interference.

5. The primary auxiliary winding is grounded, and the other end is grounded through a small capacitor. This method is similar to the principle of shielding between the primary stages, but the primary auxiliary winding is generally outside the secondary, and the effect is not as obvious as the shielding between the primary stages.