# Ferrites and accessories

EP, EPX, EPO cores
General information

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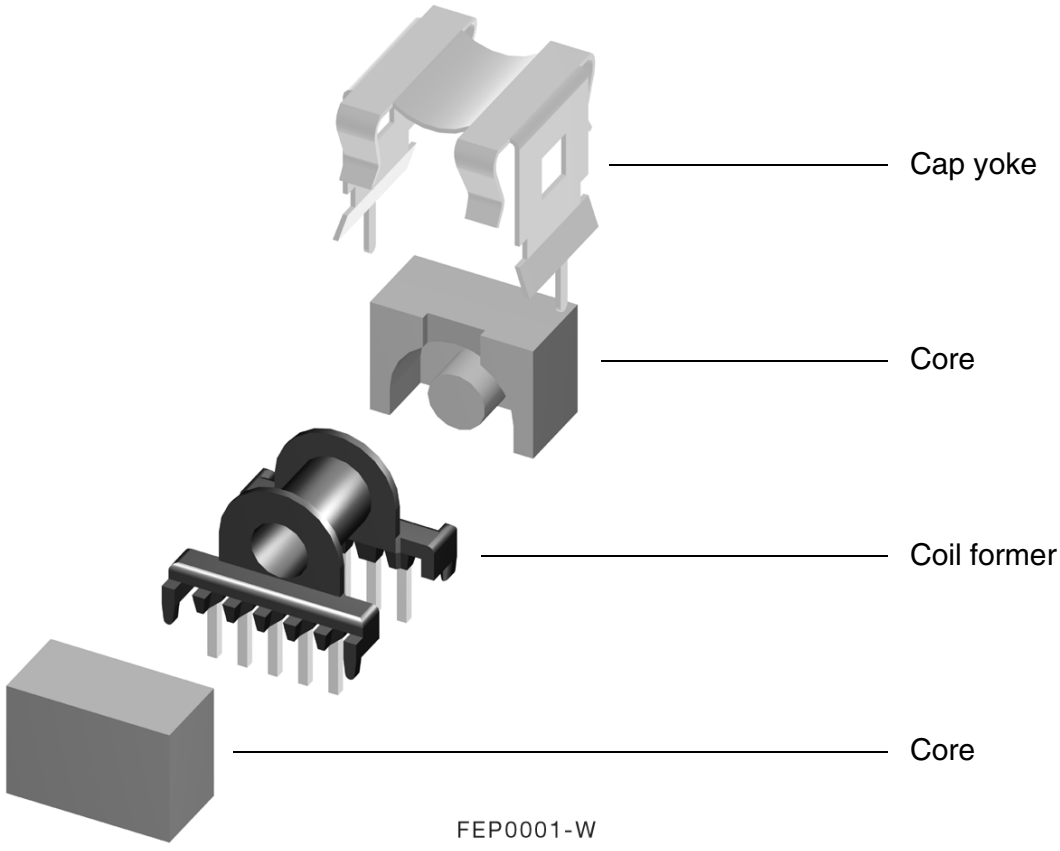
## General information

EP, EPX and EPO cores are typically used for transformer applications. Their cubic shape provides an excellent volume ratio to total space used and permits high PCB packing densities. The compact design and the broadband materials used (N30, T38, T57, T65 and T66) ensure low magnetic leakage, low signal distortion and excellent properties for broadband small-signal transmission (xDSL).

EP cores are increasingly being used for power applications. Here we recommend the series EP 7 through EP 20 made of N87 for operation up to about 300 kHz.

Matching pinned and SMD coil formers suitable for automatic processing and shielding accessories (yoke, clamp or cap yoke) complete the product line.

### Example of an assembly set EP 13




### Core losses

The maximum dissipation loss for each core type employing power materials is specified in W/set together with the measurement parameters. The flux density has been calculated on the basis of a sinusoidal voltage and is referred to the minimum cross-sectional area $A_{min}$.

### Tolerances for EP cores

Increasing use is now being made of gapped EP cores with $A_L$ values and ultra-low $A_L$ tolerances, especially for broadband transformers.

The tolerances for EP cores have consequently been defined with consideration of optimized process parameters for all materials with an initial permeability $\mu_i$ in the region of 1400 to 15000 as a step function (see figure below).

The “quantized” $A_L$ step values should preferably used. They are still available in their respective lower tolerance ranges. Thus a tolerance of ±5% can be determined for an EP 13 made of T38 material for an $A_L$ value of 250 nH.

With this type of tolerance definition, EPCOS has defined standard $A_L$ values and the associated tolerances for the first time.