Gapped Cores
How To Order

Part Number

0P44317  A450

Same as for ungapped cores

Gap Code

The letter indicates the type of gap and a three-digit number defines the value.

<table>
<thead>
<tr>
<th>CODE</th>
<th>MEANING</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A__</td>
<td>A&lt;1000 (if &lt;1000)</td>
<td>OP42311A275 (A=275)</td>
</tr>
<tr>
<td>X__</td>
<td>A if 1000 or greater (add 1000 to code)</td>
<td>OP44721X250 (A=1250)</td>
</tr>
<tr>
<td>F__</td>
<td>A if &lt;100, non-integer (divide code by 10)</td>
<td>OR42510F807 (A=80.7)</td>
</tr>
<tr>
<td>G__</td>
<td>Depth of Grind in mils (1000° of an inch)</td>
<td>OF44317G079 (Gap=0.079&quot;)</td>
</tr>
<tr>
<td>M__</td>
<td>Depth of Grind, mm (divide code by 10)</td>
<td>OF43019M015 (Gap=1.5 mm)</td>
</tr>
</tbody>
</table>

A is inductance factor, mH/1000 Turns, or nH/T.
Either the A, or the depth of grind (not both) is controlled during production of gapped cores.
See the chart on pages 14-15 for tolerances.

Gapping for A<sub>l</sub>

In most applications, defining the gap with the A<sub>l</sub> results in inductors with the least variation. Electrical measurement is inherently more precise, and compensation is made for variability in material permeability and core geometry.

When specifying and ordering E cores (including EC, EFD, EER, ETD, and Planar E cores) gapped to an A<sub>l</sub>, it is important to note which cores are produced in gap-to-gap combination, because two gapped pieces are assembled to achieve the A<sub>l</sub>. Alternatively, for E cores provided ungapped-to-gap, an ungapped piece must be used with a gapped piece to achieve the A<sub>l</sub>. Pot, RS, DS, RM, PQ, and EP cores are sold as sets whether the combination is gap-to-gap or ungapped-to-gap.

A testing and limits are calculated to three significant digits, based on the normal value.
For example, A<sub>l</sub>=99±3% is interpreted as 96.0 Minimum, 99.0 Nominal, and 102.0 Maximum.

Magnetics tests gapped A<sub>l</sub> values with full bobbins, usually 100 turns, or 250 turns for deep gaps. The drive level is low (5 Gauss) and the frequency is set low enough to avoid resonance effects. Measured inductance in an application may vary significantly from the theoretical value due to low turns, low bobbin fill, leakage effects, resonance effects, or elevated drive levels.

It is important for the users to verify the correlation between the test of the core and the specific test being applied to the inductor or transformer. Planar E cores, Planar RM, and Planar PQ cores are especially susceptible to correlation discrepancies.

Gapping for Depth of Grind

For parts ordered in pieces (E and I cores), the depth of grind is given for each piece.

For parts ordered in sets, the depth of grind is given as a total for the set, and may be ungapped-to-gap core pieces, or gap-to-gap. To make an ungapped-to-gap set, use one piece of each. For example, use OR41808G050 with OR41808EC for an asymmetrical gap of 0.050"±0.001". For the same gap, but symmetric, use two pieces of OR41808G025.

For deep gaps, however, better consistency often results when the depth of grind is specified. In such cases, variation in the finished inductor is dominated by the variation in the windings, especially if the number of turns is low.