Re: About leakage inductance in transformers

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- *From*: MassiveProng <MassiveProng@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>
- *Date*: Mon, 05 Mar 2007 22:41:10 −0800

On Tue, 06 Mar 2007 17:33:52 +1300, Terry Given <my_name@xxxxxxxx>
Gave us:

> MassiveProng wrote:
>
> > On Tue, 06 Mar 2007 16:14:01 +1300, Terry Given <my_name@xxxxxxxx>
> > Gave us:
> >
> > > why do you think windings are interleaved? not to maximise
> > coupling to
> > > the core, but to maximise coupling to *each other*.
> >
> > Not all transformers have "STACKED" windings. Interleaved is an
> > entirely incorrect term, dope.
>
> look harder.

Wrong. "Interleaved" is NOT synonymous with "stacked", idiot.

> stacked <> interleaved.

You're an idiot.

> and not all stacked windings are interleaved.

None are, dumbass. That's because you chose an incorrect term which
is not even used by the industry for this application.

> I have several designs that use a segmented bobbin, and the primary
> is at one end, and the secondary spans the rest of the bobbin. The
> reason is isolation as well as the fact that some 1700 plus secondary
> turns were required. If you know anything about transformers, you
> would know that the number of turns that can be safely nested together
> is limited by the breakdown strength of the insulation on the mag
> wire. Typically a max of a few hundred. That is why one will see a
> layer of secondary windings, covered by tape, and then another layer
> wound over that one. It is even referred to as a "layered build".

indeed.

OMG! What, no standard idiots from the retarded bandwagon response?

> If one places too many turns on one bobbin segment, the longevity of
> the transformer is in serious jeopardy as the voltage differential
> from the first turn to the last is so high that breakdown is likely.

hence, for example, progressive− or jumble−winding. zig−zag winding is exactly wrong for this purpose (and serves to maximise end−to−end winding capacitance)

> There are even transformers where the primary and secondary are on
> separate bobbins on opposite sides of the core.

Philips/ferroxcube used to make a 2−part ETD29 bobbin, for much the same reason (its not in the 2000 ed of MA02). one bobbin fit entirely inside the other, so creepage & clearance was very high.

No. I am talking about a C I core where the primary and secondary
are separated by several inches.

Nowadays one would simply use TIW, unless its an HV transformer.

SO YES, it is the

> core that passes the energy, you stupid dipshit.

all these types of transformers have poor coupling.

You are one of those dopes that calls zero degrees C cold.

It is all relative. Planck would have a field day with you.

> I suspect your experience is limited to HV transformers, where dielectric breakdown, corona etc considerations dominate, and you just have to live with poor coupling.

I suspect that you make retarded assessments all the time, as you have already made several in these few threads alone.

Try taking apart an fried, baked solid transformer from a '43 Chrysler AM tube radio apart forensically to find one mil fish paper between 40 layers of windings of #40 wire at about 25 turns per layer, then counting the layers to reconstruct the turns count, then examining the primary so that you can rebuild the thing for the WWII aviator that owns the refurbed car.

It was such a pain in the ass to re−make that I had to leave on lamination plate out during the rebuild.. 100% vacuum impregnated with Dolph's varnish, and baked at 425F for several hours. Radio has worked for years since with no appreciable heat from the transformer. I switched to #38 wire for the secondary. I suspect that made much of the difference.

> for non−HV applications, its all about maximising coupling.

Only at 60Hz. For switchers, it's all about making the circuit perform optimally, and in such cases gaps are often needed, and very often used to condition the drive signals.

> how about this then: Assuming I can live with the resistive losses, the amount of power I can bung thru a transformer is NOT limited by the core.

To a point. That would depend on the volts per turn used for the design. Saturation is possible in many cases where accepted design rules/conventions were not followed.

> You still havent responded to my challenge.

Did you think it was a five minute exercise?
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