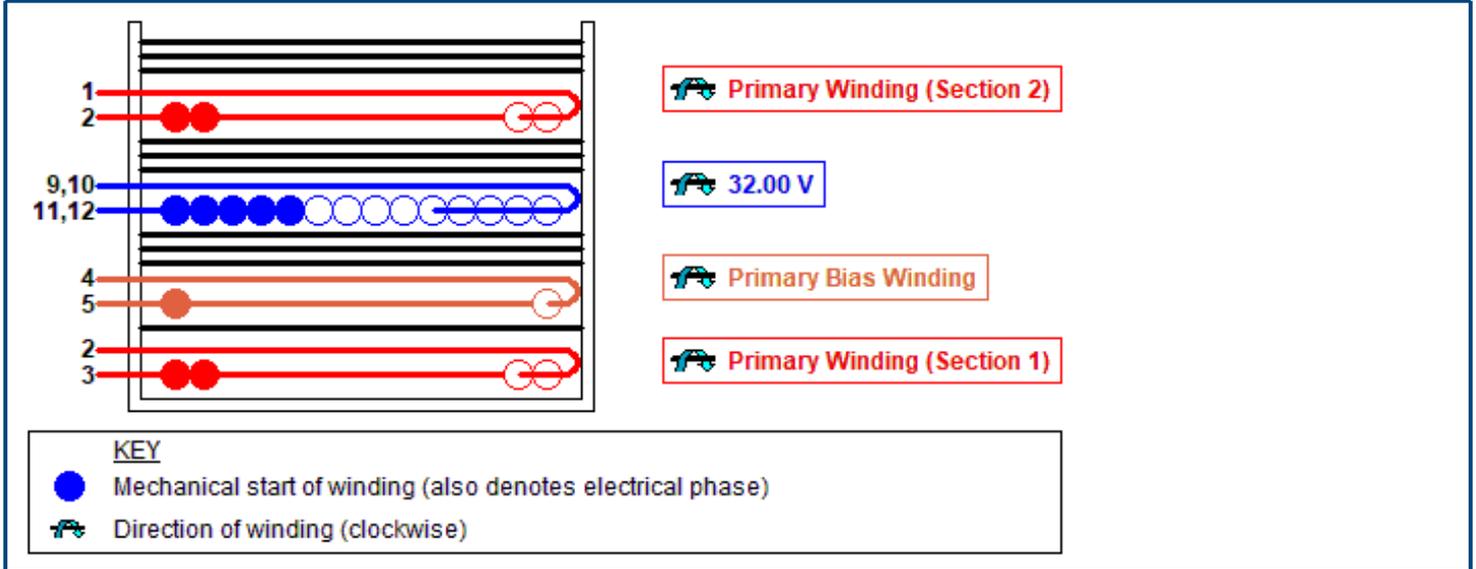




Mechanical Diagram



Winding Instruction

**Primary Winding (Section 1)**  
 Start on pin(s) 3 and wind 17 turns (x 2 filar) of item [5]. in 1 layer(s) from left to right. Winding direction is clockwise. On the final layer, spread the winding evenly across entire bobbin. Finish this winding on pin(s) 2.  
 Add 1 layer of tape, item [3], for insulation.

**Primary Bias Winding**  
 Start on pin(s) 5 and wind 4 turns (x 1 filar) of item [6]. Winding direction is clockwise. Spread the winding evenly across entire bobbin. Finish this winding on pin(s) 4.  
 Add 3 layers of tape, item [3], for insulation.

**Secondary Winding**  
 Start on pin(s) 11,12 and wind 8 turns (x 5 filar) of item [5]. Spread the winding evenly across entire bobbin. Winding direction is clockwise. Finish this winding on pin(s) 9,10.  
 Add 3 layers of tape, item [3], for insulation.

**Primary Winding (Section 2)**  
 Start on pin(s) 2 and wind 16 turns (x 2 filar) of item [5]. in 1 layer(s) from left to right. Winding direction is clockwise. On the final layer, spread the winding evenly across entire bobbin. Finish this winding on pin(s) 1.  
 Add 3 layers of tape, item [3], for insulation.

**Core Assembly**  
 Assemble and secure core halves. Item [1].

**Varnish**  
 Dip varnish uniformly in item [4]. Do not vacuum impregnate.

Comments

1. Pins 11 and 12 are electrically shorted to each other on the PCB via a copper trace.
2. Pins 9 and 10 are electrically shorted to each other on the PCB via a copper trace.
3. Use of a grounded flux-band around the core may improve the EMI performance.
4. For non margin wound transformers use triple insulated wire for all secondary windings.

Materials

Item	Description
[1]	Core: ETD39/20/13, 3F3, gapped for ALG of 184 nH/T <sup>2</sup>
[2]	Bobbin: Generic, 8 pri. + 8 sec.
[3]	Barrier Tape: Polyester film [1 mil (25 µm) base thickness], 25.70 mm wide
[4]	Varnish
[5]	Magnet Wire: 24 AWG, Solderable Double Coated
[6]	Magnet Wire: 25 AWG, Solderable Double Coated

## Electrical Test Specifications

<i>Parameter</i>	<i>Condition</i>	<i>Spec</i>
Electrical Strength, VAC	60 Hz 1 second, from pins 1,2,3,4,5 to pins 9,10,11,12.	3000
Nominal Primary Inductance, $\mu$ H	Measured at 1 V pk-pk, typical switching frequency, between pin 1 to pin 3, with all other Windings open.	211
Tolerance, $\pm$ %	Tolerance of Primary Inductance	10.0
Maximum Primary Leakage, $\mu$ H	Measured between Pin 1 to Pin 3, with all other Windings shorted.	3.17

Although the design of the software considered safety guidelines, it is the user's responsibility to ensure that the user's power supply design meets all applicable safety requirements of user's product.

The products and applications illustrated herein (including circuits external to the products and transformer construction) may be covered by one or more U.S. and foreign patents or potentially by pending U.S. and foreign patent applications assigned to Power Integrations. A complete list of Power Integrations' patents may be found at [www.power.com](http://www.power.com).