
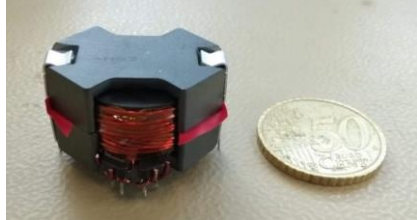
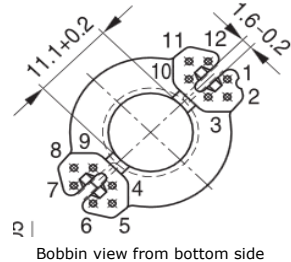

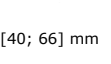



Identification		Short Designation	CERN N°	Date	Index	Visa	Update
Product	PFC Inductor	<b>CERN</b> <b>The Large Hadron Collider</b> 		2020-12-16	01	L. Patnaik	
Creation Date	2020-12-16						
Made by	L. Patnaik						
Verified by	L. Patnaik						
Assembly	PFC Buck AC-DC Power Inductor						
Sub. Assembly							

Identification Block							Wiring Details			
Manufacturer Code		Des.	Reference Description	Precision	AI (nH)	Designation	Qty	CERN Code	<div></div> <div><p>Bobbin view from bottom side</p></div> <div><div><div>1 part ungapped → </div><div>1 part gapped → </div></div><div>RM10: Ae = 98 mm<sup>2</sup> RM10: L<sub>avg</sub> = 53 mm [40; 66] mm</div></div> <div><div><div>06 1 wire from 4 in hand</div><div>01 05 1 wire from 4 in hand</div><div>02 08 1 wire from 4 in hand</div><div>11 07 1 wire from 4 in hand</div><div>12</div></div><div>09 1 wire in hand</div><div>04</div><div>Winding pinout and sense</div><div><p>Bobbin &amp; windings side-view</p></div></div>	
<a href="#">EPCOS RM10 N87</a>	Pot.1	RM10 N87 (Epcos)	±3 %	293 nH	Ferrite RM core (manufacturer not dependent)	1				
<a href="#">FERROXCUBE RM10 3C95</a>	Pot.2	RM10 3C95 (Ferroxcube)	±3 %	293 nH						
<a href="#">B65814N1012D0001</a>	Bobbin	RM10 Coilformer, 12 pins			For series	1				
<a href="#">B65814B2203X000</a>	Clip	RM10 Clip (clip preferred)			RM10 Clip	2				
<a href="#">AV118 (If clip not used.)</a>	Glue	Araldite glue			Huntsman / araldite glue	0.1g				
	Wire	AWG22 0.65mm - AWG23 0.56mm			Enamelled copper wire	4x1.2m				
	Wire	AWG34 0.15mm - AWG38 0.10mm			Enamelled copper wire	1x0.5m				
<a href="#">3M Electrical Tape 92</a>	Tape	Tape/Scotch 10 mm width			Kapton / yellow tape (optional)					
Wiring										
Wind.	Bob.2 (if #)	Bob.1	Nb. Turns	Ø CU	CLASS	E / C	OBSERVATIONS			
P1		06 - 01	20	1 x AWG-22 0.65 mm			Quadrifilar winding (4 wires in hand) on 5 layers; 4 turns per layer			
P2		05 - 02	20	1 x AWG-22 0.65 mm						
P3		08 - 11	20	1 x AWG-22 0.65 mm						
P4		07 - 12	20	1 x AWG-22 0.65 mm						
S1		09 - 04	7	1 x AWG-34 0.15 mm			1-wire wound on one layer			
Technical data for validation test									Impregnation & Marking	Comments
Dielectric Rigidity	1500 V <sub>AC</sub>			Resistance (25°C)	R <sub>P1</sub> = R <sub>P2</sub> = R <sub>P3</sub> = R <sub>P4</sub> = [88 mOhms <sub>LF</sub> ; 5.2 Ohms <sub>100kHz</sub> ]				Impregnation	Power inductor, operating at I <sub>max</sub> (6.5 A) gives B <sub>max</sub> around 0.32 T. The power part (Px) inductor is split in four parallel inductors, to minimize skin effect. An auxiliary winding is placed for primary power supply.
									In vacuum: classe:	
Turns Ratio	P <sub>11/2/3/4</sub> / S <sub>1</sub> = 20 / 7 = 2.86 / 1 = 1 / 0.35 (auxiliary winding S1 set to 16.8 V).			Leakage Inductance	NA				Marking	
Inductance	P1 = P2 = P3 = P4 = 117 µH ± 3% S1 = 14 µH ± 3%			Capacitance	NA				Test Pass Date Code Primary: P, Secondary S	