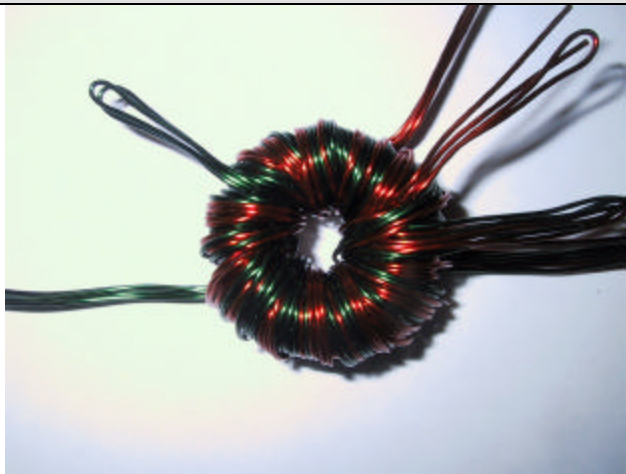


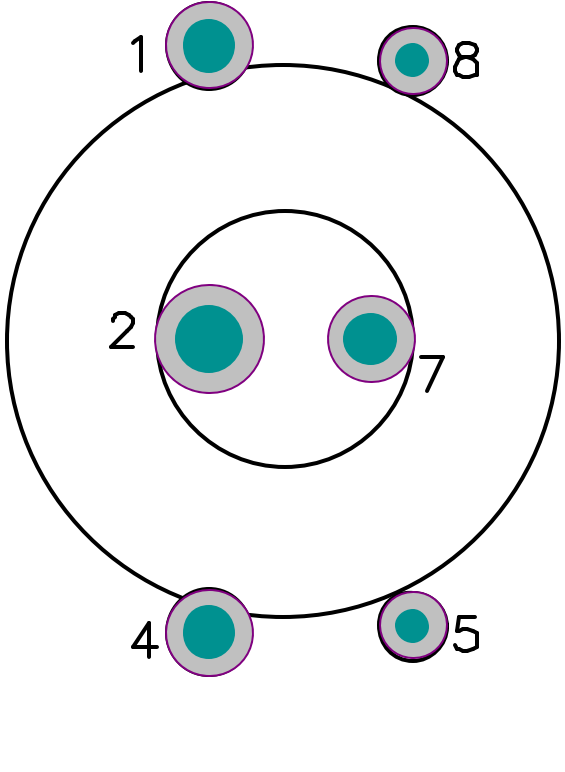
**IR CAR Power Supply 2085 transformer winding instructions and electrical characteristics**  
**IR Assy P/N IR-TR500-2085**

Schematic	Materials required
	<p>Core: Magnetics material "R" <a href="#">ZR42915TC</a></p>

	Step No. 1
<p align="center"><b>Fig No. 2</b></p>	<p>Winding P1(Green magnet wire):</p> <ol style="list-style-type: none"> <li>1. Cut 12 inches of 20 AWG x 4 magnet wire.</li> <li>2. Start winding P1 at 0 degrees forward or Clock wise, as shown in Fig 2, start is the top side, and finish is the bottom side</li> <li>3. Wind 4 turns in parallel at the same time, evenly spaced around the core as shown in Fig 2</li> <li>4. Leave 2" inches of wire at both ends, spaced 1/2 inch between ends, as shown in Fig 2</li> </ol>

	Step No. 2
<p align="center"><b>Fig No. 3</b></p>	<p>Winding P2 (Red magnet wire):</p> <ol style="list-style-type: none"> <li>5. Cut 12 inches of 20 AWG x 4 red magnet wire</li> <li>6. Start winding P2 at 45 degrees forward respect to the start point of P1, as shown in Fig 3, start is the top side, and finish is the bottom side</li> <li>7. Wind 4 turns in parallel at the same time, evenly spaced around the core, between the spaces of P1 (green wire) in the same direction as shown in Fig 3</li> <li>8. Leave 2" inches of wire at both ends, spaced 1/2 inch between ends, as shown in Fig 3</li> </ol>

Step No. 3	
 <p style="text-align: center;"><b>Fig No. 4</b></p>	<p>Winding of S1 and S2 at the same time :</p> <ol style="list-style-type: none"> <li>9. Cut 32 inches of 20 AWG x 2 for both Green and Red magnet wires at the same time, it means 2 Green and 2 Red in parallel</li> <li>10. Start winding of S1 and S2 at the same time 180 degrees forward respect to the start point of P1, as shown in Fig 4, start is the top side, and finish is the bottom side</li> <li>11. Wind 11 turns in parallel at the same time, evenly spaced around the core on the same direction as shown in Fig 4</li> <li>12. Leave 4” inches of wire at both ends.</li> </ol>

Step No. 5	
Performing “Start and Finish wires”:	
Mounting holes; using an IR2085_MB_R1 PCB, perform the next instruction:	
 <p style="text-align: center;"><b>Fig No. 6</b></p>	<ol style="list-style-type: none"> <li>13. Perform P1 “finish of green wires” , to be fitted into mounting hole 2 as shown in Fig No. 6, this is the center tap of the Primary side</li> <li>14. Perform P1 “start of green wires” to fit into hole 1 as shown Fig 6.</li> <li>15. Perform P2 “finish of red wires” , to be fitted into mounting hole 4 as shown in fig No. 6.</li> <li>16. Perform P2 “start of red wires” to fit into hole 2 as shown Fig 6, this is the center tap of the Primary side</li> <li>17. Perform S1 “start of green wires” (top winding) to be connected to pin 8 as shown on Fig 6</li> <li>18. Perform S1 “end of green wire” (bottom winding) to be connected to the holes 7, this is the center tap of the secondary side</li> <li>19. Perform S2 “start of the red wires” (top winding) to the center tap holes 7</li> <li>20. Perform S2 “end of red wire” (bottom winding) to be connected to hole 5 as shown on fig 6</li> <li>21. Cut and strip magnet wires for ½ inches long to be performed as vertical mounting</li> </ol>

Step No. 7 Electrical Characteristics	
Inductance at P1 and P2 on terminals 1,2 and 2,4	65uH-75uH
Inductance difference between windings P1 and P2	5uH maximum
Inductance at S1 and S2 on terminals 5,7 and 7,8	750uH minimum
DCR at P1 winding 1,2 and P2 winding 2,4	3.0mOhms max
Inductance difference between windings S1 and S2	10uH maximum
DCR at S1 terminals 5,6 and S2 terminals 7,8	46mOhms max
Number of turns for P1 and P2	4 Turns 20AWG x 4
Number of turns for S2 and S2	11 Turns 20 AWG x 2
Resistance between Primary and Secondary (P and S windings)	Infinite
Resistance between any winding and core	Infinite
High-Pot between primary and secondary windings	500VAC
High-Pot between any winding and core	500VAC
Dimensions	1.4" OD x 0.80" Height
Mounting	See Fig 6

Prepared by Manuel Rodriguez [mrodrig5@irf.com](mailto:mrodrig5@irf.com)

International Rectifier  
101 N. Sepulveda Blvd.  
El Segundo CA 90245