EAGLE COMTRONICS INC.

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Air Coils

Eagle Comtronics designs, manufactures and markets an extensive line of wound air coils and inductors.

Standard coil selection criteria:

- Wire Sizes: 30 AWG to 12 AWG (0.010" to 0.081")
- Mandrel Sizes: 0.030" to 0.75"
- Turns: 1 to 70

Applications:

- Microwave equipment manufacturers
- AM/FM Radio receivers / transmitters
- Satellite communication Systems
- Telecommunication products
- RF and microwave filters
- Customs Assemblies
- Power Amplifiers
- Medical Products
- Test equipment
- OEM

Options:

- Tinned leads
- Surface Mount
- Thru Hole Mount
- Custom lead lengths
- Custom lead configurations

What Eagle Comtronics offers:

- On-time delivery
- Competitive pricing
- Project design Assistance
- Extensive Technical support
- Uncompromising Product Quality
- State-of-the-Art manufacturing Processes
- Prototypes, small & volume runs available

Traditional air coils increase the Q for tunable inductors, minimize dielectric losses, and reduce distributed capacitance. These coils are self-supporting and do not require a flanged bobbin for assembly.

Design Considerations:

- NUMBER OF TURNS: This varies from person to person. Various method of counting exist, but Eagle Comtronics counts the number of times the wire crosses the form or mandrel.
- INSIDE DIAMETER: This typically applies for air wound coils. The question here relates to the form or mandrel diameter the coil is being wound on versus the finished coil inside diameter. Care should be taken when building larger gauge wire coils.
- SPACING: This is defined as the spacing between turns. This can also be related to the "spring out" condition already discussed.
- LEADS: As the leads on air wound coils are part of the device, they contribute to the overall inductance of the part. Consideration must be made for the lead contribution when designing the coil.
- TINNING: Tinning of leads is often an option selected. Care should be taken as leads immediately adjacent to the windings of a coil may become "fused", thereby changing the tuning range and the inductance value of the coil.
- SOLDER TEMPERATURE: Careful consideration should be taken when specifying high temperature solder for lead tinning. The gauge of the wire also has to be considered when specifying the temperature of the lead tinning, especially for smaller gauge wires.
- WINDING DIRECTION: It is important to specify winding direction (clockwise or counter-clockwise) and not assume that it is always clockwise.

Wire coatings:

• Polynyleze (Class 130 °C, Type B)
Polyurethane-nylon is a two coat application consisting of a base coat of modified polyurethane resins and a superimposed film composed of polyamide resins (nylon). It has excellent film flexibility and abrasion resistance, plus good electrical properties. It may be stripped by solder Dipping at temperatures between 750-800 F.

• Polythermaleze (Class 200 °C, Type K)
Modified polyester is a two film insulation consisting of a base coat of polyester-polyimide polymer and an overcoat of polyamide-imide resins. It offers excellent electrical properties, moisture and solvent resistance, superior dielectric strength, film flexibility and abrasion resistance.

Contact us at Coils@eaglecomtronics.com or 1-800-448-7474 with your requirements.

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