

## O-NETICS Ltd. 50 WATT OUTPUT TRANSFORMER

### PRIMARY INSULATION SYSTEM MATERIALS LIST

Conventions: Consecutive numerical designations refer to a specific material and location. An additional alphabetical designation refers to multiple uses of a material at a specific location. Only those materials designated serve a dielectric barrier function. Other materials, though similar in nature, serve a structural function.

1.) Bobbin is 30% glass filled Nylon 6/6, U.L. rated 94HB and manufactured by generic molders. Post molding slots, cut into flange wall for coil winding wire ingress and egress, begin 3mm (.119") minimum from core window edge and extend to flange outer edge.

2.) Primary winding: 1424 total turns center tapped. Segments A thru C, 356 turns # 27 AWG, Segment D, 356 turns # 26 AWG, single coat Polyurethane/Nylon insulation, U.L. listed 130deg C magnet wire. Manufacturer generic. (A, B, C, D)

3.) Primary coil wires: Exit through pre cut slots in bobbin wall. Physical separation from adjacent primary windings provided by 1 piece of, ".1/2" wide X 3/4" long, U.L. listed, polyester/terephthalate (Mylar) tape, 1.5mils thick with 1.5mils of adhesive. Manufactured by 3M corp. as #45 tape and Permacel corp. as #P-245 tape, slit to width tolerance + .050" -.010"

4.) Cap tape: 1" X 4" long, U.L. listed, polyester/terephthalate (Mylar) tape, 1.5mils thick with 1.5mils of adhesive. Manufactured by 3M corp. as #45 tape and Permacel corp. as #P-245 tape slit to width tolerance + .050 -.010".

5.) Primary leads: 18guage, 1/32 PVC coated lead wire, UL listed 1015, 105deg C. Manufacturer generic.

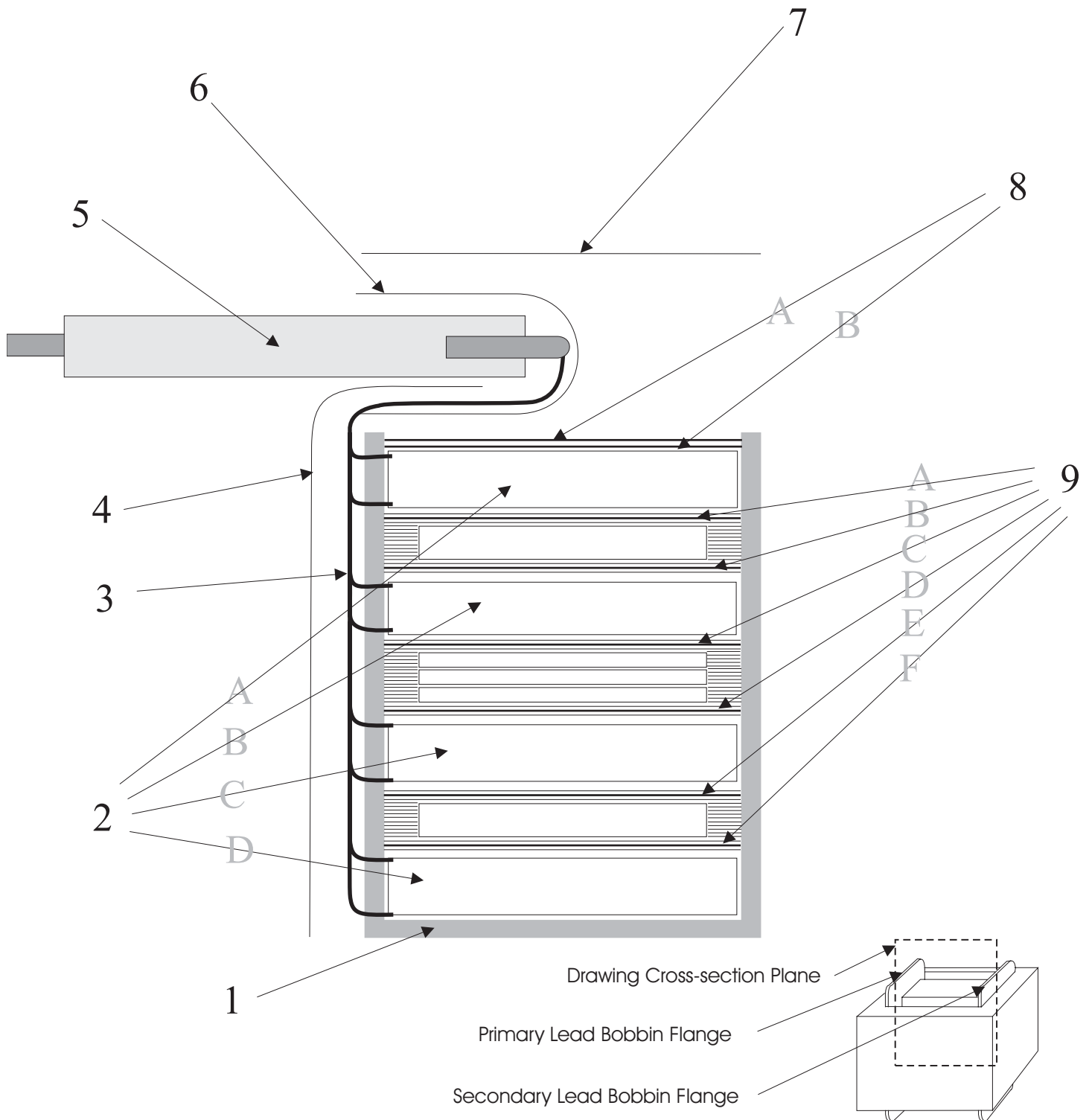
6.) Primary Lead Envelope: 1 piece of 1.9" X 2 1/2" long, U.L. listed polyester/terephthalate (Mylar) sheet, 5 mils thick. Manufacturer generic

7.) Cover Tape: 1 piece of 1" X 4 ½" long, U.L. listed, polyester/terephthalate (Mylar) tape, 1.5 mils thick with 1.5 mils of adhesive. Manufactured by 3M corp. as #45 tape and Permacel corp. as #P-245 tape slit to width tolerance + .050 -.010".

8.) Outer Coil Wrap: 1.9" wide X 18" long, Mylar sheet, in two turns, 3 mils thick. Manufacturer generic. (A, B)

9.) Primary to Secondary dielectric barrier: 1.9" X varied length, as needed, in two turns, 3 mils thick., Nomex 410. U.L. rated 155deg C. Manufactured by DuPont Chemical Corp. (A, B, C, D, E, F)

# O-Netics Ltd 50 WATT OUTPUT TRANSFORMER PRIMARY INSULATION SYSTEM DIAGRAM



## O-NETICS Ltd. 50 WATT OUTPUT TRANSFORMER

### SECONDARY INSULATION SYSTEM MATERIALS LIST

1). Bobbin is 30% glass filled Nylon 6/6, U.L. rated 94HB and manufactured by generic molders. Post molding slots, cut into flange wall for coil winding wire ingress and egress, begin 3mm (.119") minimum from core window edge and extend to flange outer edge.

2.) Secondary windings: Segment A; 43 total turns, Segment B; 18 total turns, Segment C; 18 total turns, Segment D; 25 total turns, Segment E; 43 total turns, # 21 AWG, wound bifilar, single coat Polyurethane/Nylon insulation, U.L. listed 130deg C magnet wire. Manufacturer generic.

(A, B, C, D, E)

3.) Secondary creepage offset: .125" X as needed, Creped paper tape, 7 mils thick, wound adjacent to both flange walls with tape build up equal to secondary winding segments in height. Manufactured by Permacel corp. as #P-277 tape slit to width tolerance +.010 -.005". (A, B, C)

4.) Outer Coil Wrap: 1.9" wide X 18" long, Mylar sheet in two turns, 3 mils thick. Manufacturer generic

(A, B)

5.) Cover Tape: 1 piece of 1" X 4 ½" long, U.L. listed, polyester/terephthalate (Mylar) tape, 1.5 mils thick with 1.5 mils of adhesive. Manufactured by 3M corp. as #45 tape and Permacel corp. as #P-245 tape slit to width tolerance + .050 -.010".

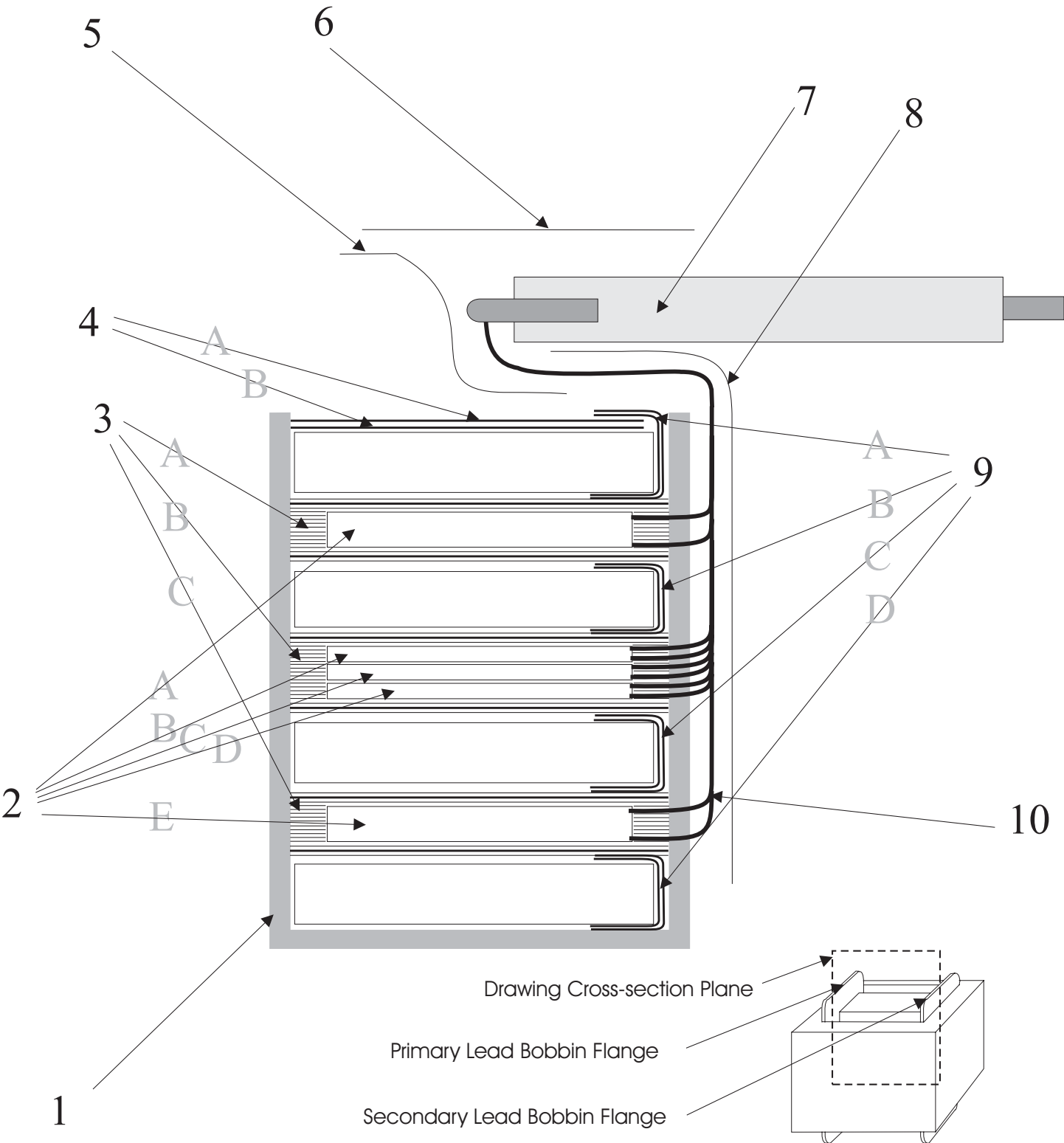
6.) Cover Tape: 1 piece of 1" X 5" long, U.L. listed, polyester/terephthalate (Mylar) tape, 1.5 mils thick with 1.5 mils of adhesive. Manufactured by 3M corp. as #45 tape and Permacel corp. as #P-245 tape slit to width tolerance + .050 -.010"

7.) Secondary leads: 18 gauge, 1/32 PVC coated lead wire, UL listed 1015, 105deg C.  
Manufacturer generic

8.) Cap tape: 1" X 4" long, U.L. listed, polyester/terephthalate (Mylar) tape, 1.5mils thick with 1.5mils of adhesive. Manufactured by 3M corp. as #45 tape and Permacel corp. as #P-245 tape slit to width tolerance + .050 -.010"

9.) Secondary coil winding wire crossover:: A; 2, stacked, pieces of 1/2" wide X 2 1/4" long, B thru D; 2, stacked, pieces of 1/2" wide X 3/4" long, U.L. listed, polyester/terephthalate (Mylar) tape, 1.5 mils thick with 1.5 mils of adhesive. Manufactured by 3M corp. as #45 tape and Permacel corp. as #P-245 tape slit to width tolerance + .050 -.010" (A, B, C, D)

O-NETICS Ltd 50 WATT OUTPUT TRANSFORMER  
SECONDARY INSULATION SYSTEM DIAGRAM



O-NETICS Ltd. 50 WATT OUTPUT TRANSFORMER PRIMARY AND SECONDARY TO  
CORE INSULATION SYSTEM MATERIALS LIST

1.) Outer Coil Wrap: 1.9" wide X 18" long, Mylar sheet in two turns, 3 mils thick. Manufacturer generic

(A, B)

2.) Core to Primary winding: 2, stacked, pieces of ½" wide X 2 ¼" long, U.L. listed, polyester/terephthalate (Mylar) tape, 1.5 mils thick with 1.5 mils of adhesive. Manufactured by 3M corp. as #45 tape and Permacel corp. as #P-245 tape slit to width tolerance + .050 -.010"

(A, B)

3.) Bobbin is 30% glass filled Nylon 6/6, U.L. rated 94HB and manufactured by generic molders. Post molding slots, cut into flange wall for coil winding wire ingress and egress, begin 3mm (.119") minimum from core window edge and extend to flange outer edge.

Laminations are 1 3/8" center leg x 13/8" min. stack with two full length keeper laminations . Material is 26 guage M50 grade non grain oriented electrical grade sheet steel laminations. Manufacturer generic.

Varnish: Dolph CC 1305 Solventless Polyester Resin or Ripley 468-2 Solventless Epoxy Based Electrically Insulating Resin

O\_NETICS Ltd 50 WATT OUTPUT TRANSFORMER  
WINDING TO CORE INSULATION SYSTEM DIAGRAM

