



RM Cores

Section 8

RM CORES

RM Cores are square-designed cores that offer all the magnetic and mechanical advantages of pot cores, plus the added feature of maximizing magnetic performance while minimizing PC board space.

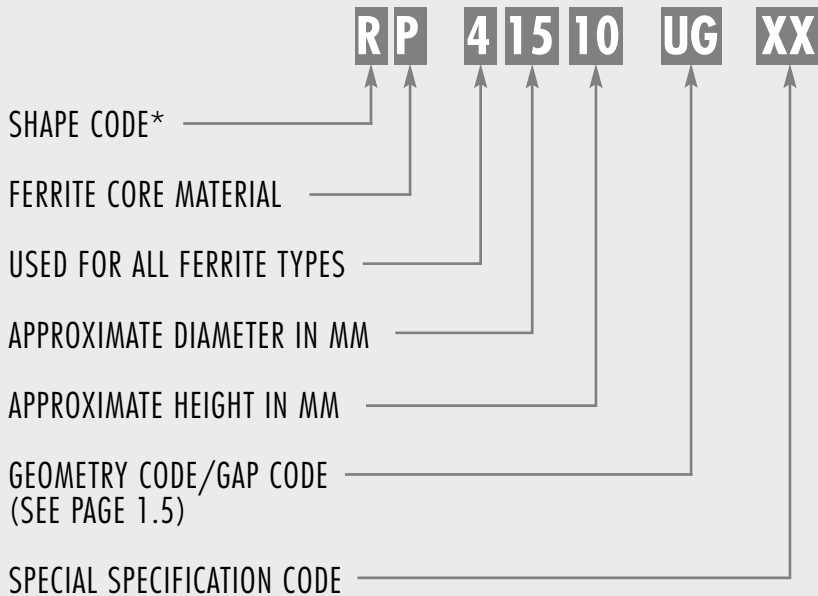
Easy to assemble and adaptable to automation, completed units provide at least 40% savings in mounting area compared to a similar size pot core assembly.

RM cores are available in seven standard sizes.

Printed circuit bobbins or plain bobbins are available.

Typical applications include differential inductors, power inductors, filter inductors, telecom inductors and broadband transformers.

HOW TO ORDER



*SHAPE CODES

N – RM Core with solid centerpost

R – RM Core with center hole

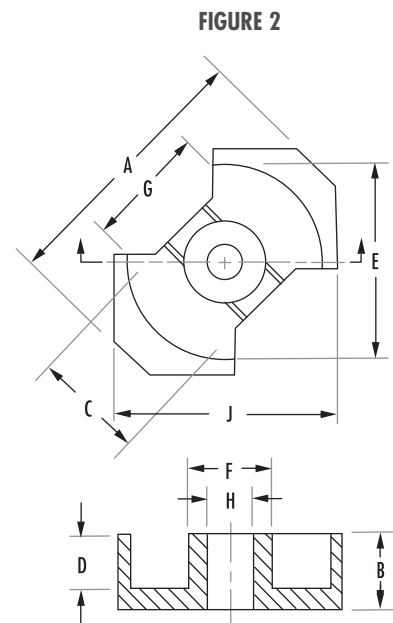
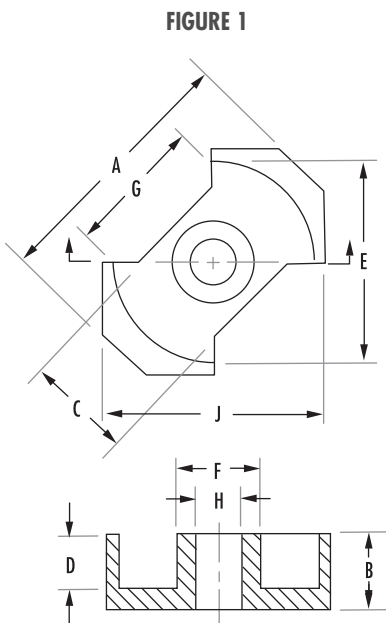


RM Core Data (ungapped)

Any practical gap available. See page 1.8 - 1.11

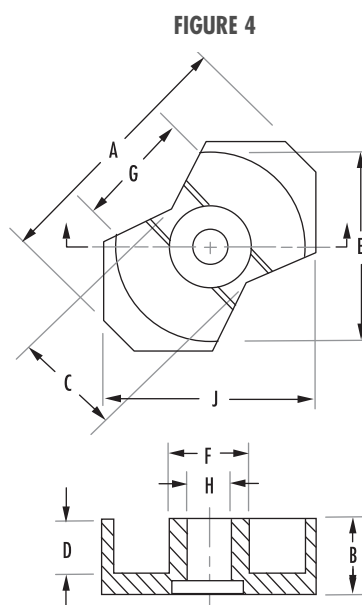
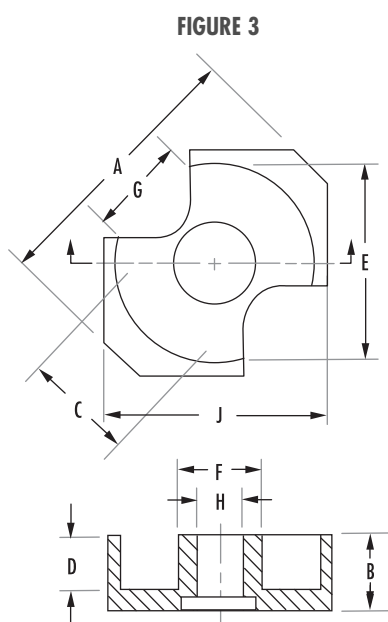
| MECHANICAL DIMENSIONS (mm) | | | | | | | |
|----------------------------|-------------------------|----------|----------------|-----------|-----------|---------------|---------------|
| PART | CORE TYPE | FIG. | A | B | 2B | C | D |
| N_41110UG | RM4 no center hole | 1 | 11 + 0, - .5 | 5.2 ± .05 | 10.4 ± .1 | 4.6 + 0, - .2 | 3.5 + .2, - 0 |
| R_41110UG | RM4 | 1 | 11.8 | 5.2 ± .05 | 10.4 ± .1 | 4.45 nom | 3.61 ± .1 |
| R_41510UG | RM5 | 2 | 14.9 max | 5.2 ± .05 | 10.4 ± .1 | 6.6 nom | 3.25 ± .1 |
| N_41510UG | RM5 no center hole | 2 | 14.6 + 0, - .6 | 5.2 ± .05 | 10.4 ± .1 | 6.8 + 0, - .4 | 3.25 ± .1 |
| R_41812UG | RM6-R | 3 | 18.3 max | 6.2 ± .05 | 12.4 ± .1 | 7.4 nom | 4.1 ± .1 |
| N_41812UG | RM6-R no center hole | 3 | 17.9 + 0, - .7 | 6.2 ± .05 | 12.4 ± .1 | 7. + 0, - .4 | 4 + .2, - 0 |
| R_41912UG | RM6-S | 4 | 18.3 max | 6.2 ± .05 | 12.4 ± .1 | 8.2 nom | 4.1 ± .10 |

To order, add material code to part number.



RM Core Data (ungapped)

| MECHANICAL DIMENSIONS (mm) | | | | | | | |
|----------------------------|------|---------------|------------------|-----------------|----------|----------------|------------------|
| PART | FIG. | 2D | E | F | G | H | J |
| N_41110UG | 1 | $7 + .4, - 0$ | $7.95 + .4, - 0$ | $3.9 + 0, - .2$ | 5.8 min | | $9.8 + 0, - .4$ |
| R_41110UG | 1 | $7.21 \pm .2$ | $8.15 \pm .2$ | $3.8 \pm .10$ | 5.79 ref | $2.05 \pm .05$ | $9.6 \pm .2$ |
| R_41510UG | 2 | $6.5 \pm .2$ | $10.4 \pm .2$ | $4.8 \pm .1$ | 6.71 nom | $2.05 \pm .05$ | $12.05 \pm .25$ |
| N_41510UG | 2 | $6.5 \pm .2$ | $10.2 + .4, - 0$ | $4.9 + 0, - .2$ | 6 min | - | $12.3 + 0, - .5$ |
| R_41812UG | 3 | $8.2 \pm .2$ | $12.65 \pm .25$ | $6.25 \pm .15$ | 5.85 nom | $3.05 \pm .05$ | $14.4 \pm .3$ |
| N_41812UG | 3 | $8 + .4, - 0$ | $12.4 + .5, - 0$ | $6.4 + 0, - .2$ | 5.85 nom | - | $14.7 + 0, - .6$ |
| R_41912UG | 4 | $8.2 \pm .2$ | $12.65 \pm .25$ | $6.25 \pm .15$ | 9 nom | $3.05 \pm .05$ | $14.4 \pm .3$ |



RM Core Data (ungapped)

Any practical gap available. See page 1.8 - 1.11

| MECHANICAL DIMENSIONS (mm) | | | | | | | |
|----------------------------|-------------------------|----------|-------------------|-----------------|---------------|------------------|------------------|
| PART | CORE TYPE | FIG. | A | B | 2B | C | D |
| N_41912UG | RM6-S no center hole | 4 | 18.3 max | $6.2 \pm .05$ | $12.4 \pm .1$ | 8.2 nom | $4.1 \pm .1$ |
| N_42013UG | RM7 no center hole | 5 | $20.3 + 0. - .8$ | $6.7 \pm .05$ | $13.4 \pm .1$ | - | $4.2 + .25 - 0$ |
| R_42316UG | RM8 | 2 | 23.2 max | $8.2 \pm .05$ | $16.4 \pm .1$ | 10.8 nom | $5.53 \pm .13$ |
| N_42316UG | RM8 no center hole | 2 | $23.2 + 0, - .9$ | $8.2 \pm .05$ | $16.4 \pm .1$ | $11.0 + 0, - .5$ | $5.5 \pm .1$ |
| N_42819UG | RM10 no center hole | 2 | $28.5 + 0, - 1.3$ | $9.3 \pm .05$ | $18.6 \pm .1$ | $13.5 + 0, - .5$ | $6.2 + .3, - 0$ |
| N_43723UG | RM12 | 4 | $37.4 + 0, - 1.3$ | $12.25 \pm .05$ | $24.5 \pm .1$ | $16.1 + 0, - .5$ | $8.4 + .3, - 0$ |
| N_44230UG | RM14 no center hole | 2 | $42.2 + 0, - 1.4$ | $15.05 \pm .05$ | $30.1 \pm .1$ | $19 + 0, - .6$ | $10.4 + .3, - 0$ |

To order, add material code to part number.

FIGURE 2

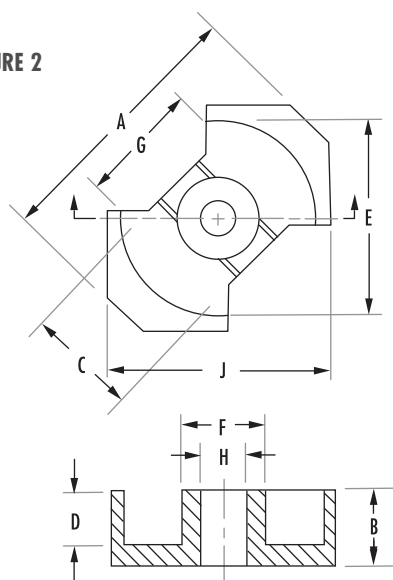
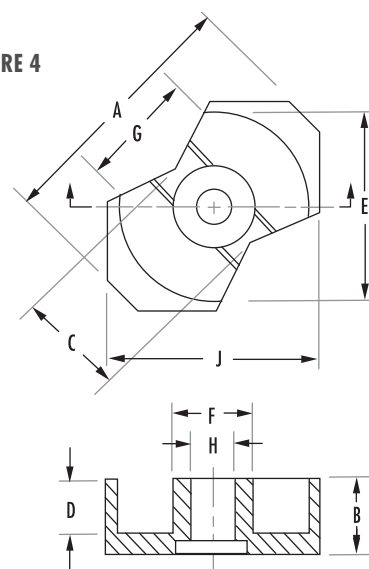


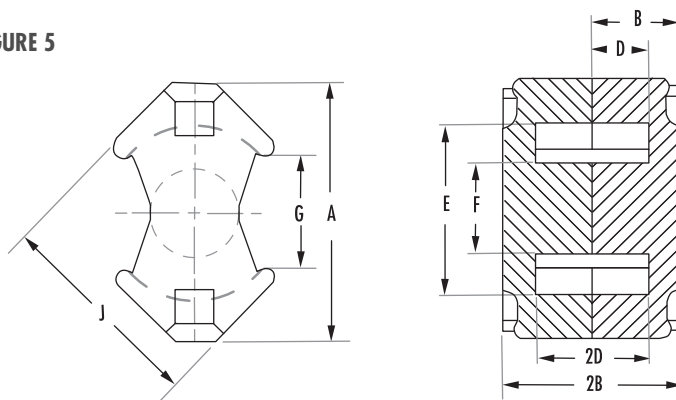
FIGURE 4



RM Core Data (ungapped)

| MECHANICAL DIMENSIONS (mm) | | | | | | | |
|----------------------------|----------|----------------|------------------|----------------|----------|----------|-----------------|
| PART | FIG. | 2D | E | F | G | H | J |
| N_41912UG | 4 | 8.2 ± .2 | 12.65 ± .25 | 6.25 ± .15 | 9 nom | - | 14.4 ± .3 |
| N_42013UG | 5 | 8.4 ± .5, - 0 | 20.3 ± .25, - .8 | 7.25 + 0, - .3 | 9.3 min | - | 17.2 + 0, - .7 |
| R_42316UG | 2 | 11.05 ± .25 | 17.35 ± .35 | 8.4 ± .15 | 11.7 nom | 4.5 ± .1 | 19.3 ± .4 |
| N_42316UG | 2 | 11 ± .2 | 17.0 + .6, - 0 | 8.55 + 0, - .3 | 9.5 min | - | 19.7 + 0, - .8 |
| N_42819UG | 2 | 12.4 + .6, - 0 | 21.2 + .9, - 0 | 10.9 + 0, - .4 | 10.9 min | - | 24.7 + 0, - 1.1 |
| N_43723UG | 4 | 16.8 + .6, - 0 | 24.9 + 1.1, - 0 | 12.8 + 0, - .4 | 12.9 min | - | 29.8 + 0, - 1.1 |
| N_44230UG | 2 | 20.8 + .6, - 0 | 29 + 1.2, - 0 | 15 + 0, - .6 | 17 nom | - | 34.8 + 0, - 1.3 |

FIGURE 5



RM Core Data (ungapped)

Any practical gap available. See page 1.8 - 1.11

A_L (mH/1000T) min

| PART | CORE TYPE | FIG. | POWER MATERIALS | | | HIGH PERMEABILITY MATERIALS | |
|------------------|-------------------------|----------|-----------------|-------|-------|-----------------------------|-------|
| | | | R | P | F* | J | W |
| N_41110UG | RM4 no center hole | 1 | 844 | 893 | 1589 | 1314 | 2463 |
| R_41110UG | RM4 | 1 | 690 | 750 | 1,200 | 1,480 | 2,100 |
| R_41510UG | RM5 | 2 | 1,290 | 1,400 | 2,100 | 3,100 | 4,200 |
| N_41510UG | RM5 no center hole | 2 | 1,290 | 1,400 | 2,100 | 3,100 | 4,200 |
| R_41812UG | RM6-R | 3 | 1,640 | 1,750 | 2,800 | 4,480 | 5,400 |
| N_41812UG | RM6-R no center hole | 3 | 1,790 | 1,950 | 3,080 | 5,030 | 6,020 |
| R_41912UG | RM6-S | 4 | 1,490 | 1,620 | 2,600 | 4,040 | 5,400 |

To order, add material code to part number.

* F material nominal $\pm 25\%$

FIGURE 1

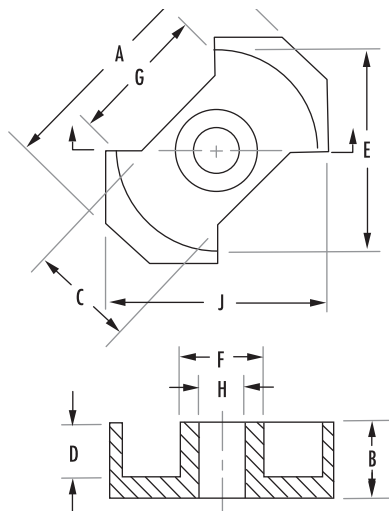
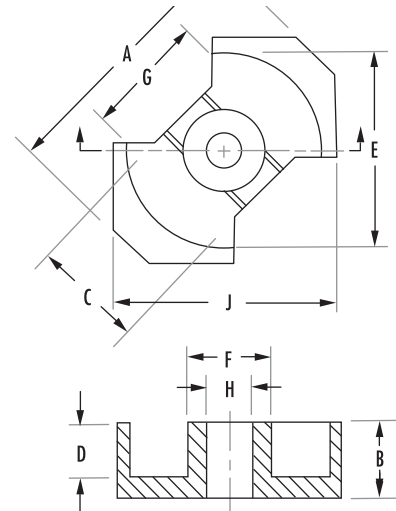


FIGURE 2



RM Core Data (ungapped)

PRINTED CIRCUIT BOBBIN
MOUNTING CLAMP

| MAGNETIC DATA | | | | | | | |
|------------------|------------|--------------------------|------------------------------|--------------------------|--------------------------------|-----------|--------------------|
| PART | l_e (mm) | A_e (mm ²) | A_{min} (mm ²) | V_e (mm ³) | CORE WEIGHT (grams per set) | W_{aAc} | AVAILABLE HARDWARE |
| N_41110UG | 23.3 | 13.8 | 23.3 | 322 | 1.5 | - | ✓ |
| R_41110UG | 20.6 | 10.8 | 7.9 | 222 | 1.6 | 0.008 | ✓ |
| R_41510UG | 21.4 | 21 | 13.9 | 449.0 | 3 | 0.02 | ✓ ✓ |
| N_41510UG | 23.2 | 24.8 | 18.1 | 574 | 3.3 | 0.02 | ✓ ✓ |
| R_41812UG | 25.6 | 32 | 22.6 | 819 | 5.1 | 0.05 | ✓ ✓ |
| N_41812UG | 27.5 | 38 | 31.2 | 1,040 | 5.400 | 0.05 | ✓ ✓ |
| R_41912UG | 27 | 31 | 22.6 | 837 | 4.8 | 0.05 | ✓ ✓ |

FIGURE 3

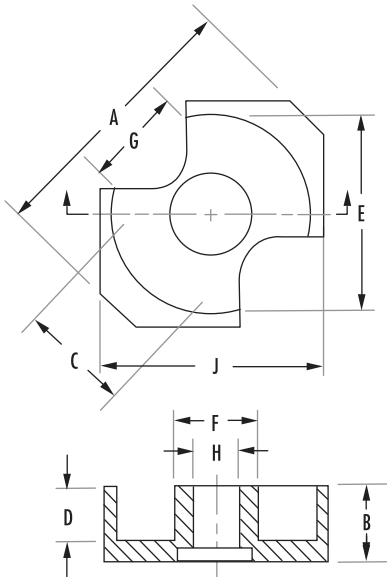
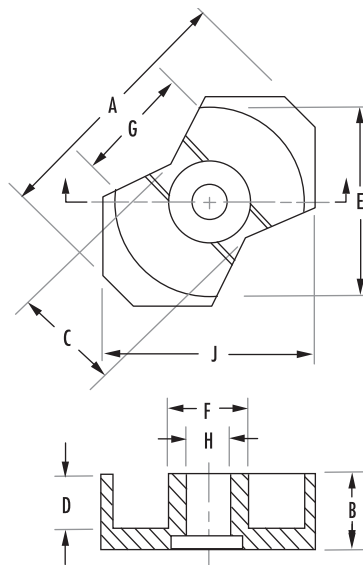


FIGURE 4



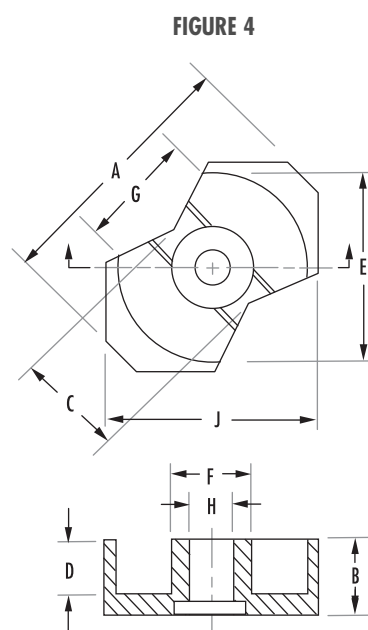
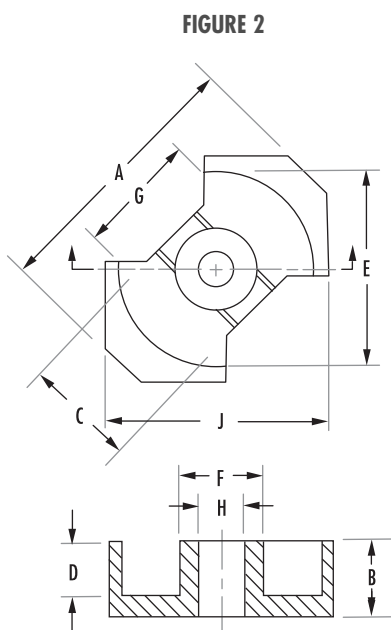
RM Core Data (ungapped)

Any practical gap available. See page 1.8 - 1.11

| PART | CORE TYPE | FIG. | A_L (mH/1000T) min | | | HIGH PERMEABILITY MATERIALS | |
|------------------|-------------------------|----------|----------------------|-------|-------|-----------------------------|--------|
| | | | R | P | F* | J | W |
| N_41912UG | RM6-S no center hole | 4 | 1,660 | 1,800 | 2,880 | 4,500 | 6,020 |
| N_42013UG | RM7 no center hole | 4 | 2,294 | 2,433 | 4,247 | 3,751 | 6,700 |
| R_42316UG | RM8 | 6 | 1,760 | 1,920 | 3,500 | 5,220 | 7,420 |
| N_42316UG | RM8 no center hole | 6 | 2,025 | 2,200 | 5,210 | 6,000 | 8,540 |
| N_42819UG | RM10 no center hole | 2 | 3,035 | 3,300 | 5,500 | 7,490 | 11,200 |
| N_43723UG | RM12 | 4 | 3,450 | 3,750 | 6,000 | 8,850 | 15,820 |
| N_44230UG | RM14 no center hole | 2 | 5,250 | 5,655 | 9,449 | 9,822 | 13,900 |

To order, add material code to part number.

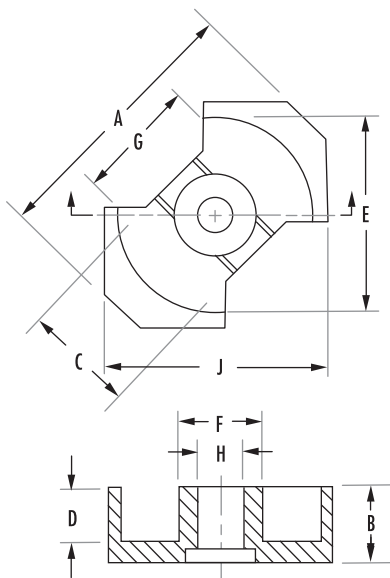
* F material nominal $\pm 25\%$



RM Core Data (ungapped)

| PART | MAGNETIC DATA | | | | | | PRINTED CIRCUIT BOBBIN | MOUNTING CLAMP |
|------------------|---------------|--------------------------|------------------------------|--------------------------|--------------------------------|-----------|------------------------|----------------|
| | l_e (mm) | A_e (mm ²) | A_{min} (mm ²) | V_e (mm ³) | CORE WEIGHT (grams per set) | W_{gAc} | AVAILABLE | HARDWARE |
| N_41912UG | 29.2 | 37 | 31.2 | 1,090 | 5.1 | 0.05 | ✓ | ✓ |
| N_42013UG | 30 | 44.1 | 39.6 | 1325 | 6 | - | | |
| R_42316UG | 35.5 | 52 | 36.9 | 1,850 | 10.4 | 0.15 | ✓ | ✓ |
| N_42316UG | 38.4 | 63 | 55.4 | 2,440 | 13 | 0.15 | ✓ | ✓ |
| N_42819UG | 44.6 | 96.6 | 89.1 | 4,310 | 23.0 | 0.44 | ✓ | ✓ |
| N_43723UG | 56.6 | 146 | 125 | 8,340 | 42 | 1.02 | ✓ | |
| N_44230UG | 70 | 198 | 168 | 13,900 | 34 | - | ✓ | |

FIGURE 6



Printed Circuit Bobbins

| MECHANICAL DIMENSIONS (mm) | | | | | | | | | |
|----------------------------|-------------|------|-------|-------|-------|-------|-------|-------|-------|
| PART | CORE SIZE | FIG. | A MAX | B MAX | C MIN | D NOM | E MAX | F NOM | G NOM |
| PCB15104A | 41510 | 1 | 10.10 | 5.94 | 4.97 | 5.08 | 6.09 | 5.0 | - |
| PCB15104B | 41510 | 1 | 10.1 | 5.94 | 4.97 | 5.08 | 6.09 | 5.0 | - |
| 2 section | | | | | | | | | |
| PCB151061 | 41510 | 2 | 10.1 | 6.04 | 4.97 | 4.92 | 6.14 | 4.57 | - |
| PCB151081 | 41510 | 3 | 10.1 | 6.04 | 4.97 | 4.92 | 6.14 | 4.57 | - |
| PCB181241 | 41812/41912 | 4 | 12.29 | 7.39 | 6.5 | 6.7 | 7.89 | 4.49 | 0.76 |

FIGURE 1

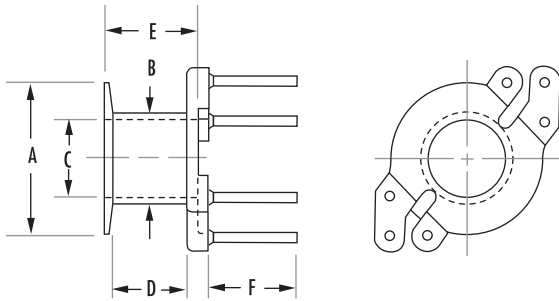
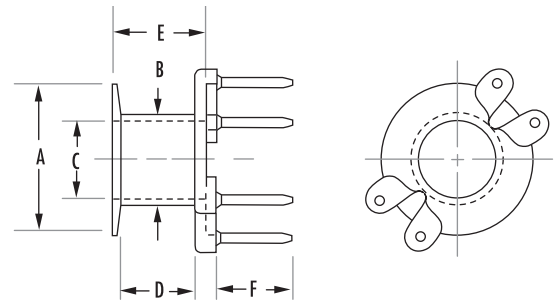


FIGURE 2



Printed Circuit Bobbins

| PART | NOMINAL WINDING AREA PER SECTION cm ² | AVERAGE LENGTH OF TURN MM | BOBBIN MATERIAL | PIN MATERIAL | PIN DIAMETER |
|-------------------------------|---|---------------------------|--------------------|----------------------------|----------------------|
| PCB15104A | 0.096 | 25 | Thermoset Phenolic | Tin coated Phosphor bronze | 0.56 |
| PCB15104B 2 section | 0.096 | 25 | Thermoset Phenolic | Tin coated Phosphor bronze | 0.56 |
| PCB151061 | 0.096 | 25 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.53 |
| PCB151081 | 0.096 | 25 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.48 |
| PCB181241 | 0.160 | 29.8 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.50 square/round |

FIGURE 3

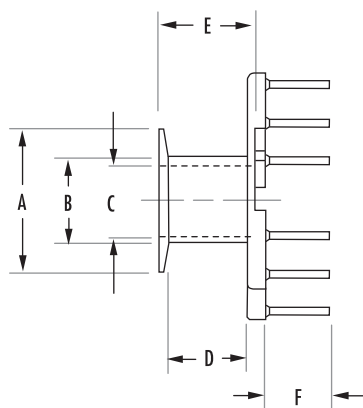
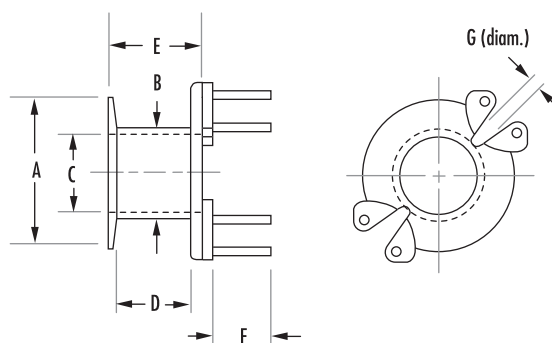
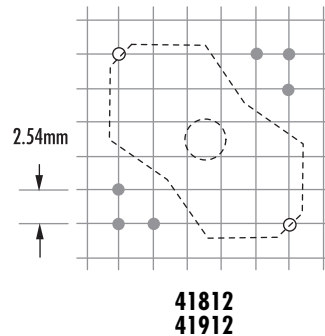
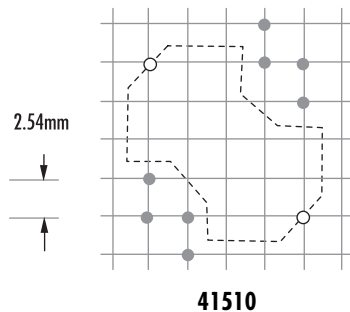


FIGURE 4



PIN LAYOUTS

- Holes for bobbin pins
- Holes for clip pins



Printed Circuit Bobbins

| MECHANICAL DIMENSIONS (mm) | | | | | | | | | |
|----------------------------|-------------|------|-------|-------|-------|-------|-------|-------|-------|
| PART | CORE SIZE | FIG. | A MAX | B MAX | C MIN | D NOM | E MAX | F NOM | G NOM |
| PCB181261 | 41812/41912 | 5 | 12.29 | 7.39 | 6.5 | 6.7 | 7.89 | 4.49 | 0.76 |
| PCB231651 | 42316 | 6 | 16.89 | 9.95 | 8.68 | 9.04 | 10.59 | 5.48 | - |
| PCB231652 | 42316 | 6 | 16.89 | 9.95 | 8.68 | 4.24 | 10.59 | 5.48 | - |
| 2 section | | | | | | | | | |
| PCB231681 | 42316 | 6 | 16.89 | 9.95 | 8.68 | 9.04 | 10.59 | 5.48 | - |
| PCB231682 | 42316 | 6 | 16.89 | 9.95 | 8.68 | 4.24 | 10.59 | 5.48 | - |
| 2 section | | | | | | | | | |
| PCB2819L1 | 42819 | 7 | 21.0 | 12.24 | 11.1 | 10.59 | 12.19 | 5.2 | 1.29 |
| PCB3723L1 | 43723 | 8 | 24.7 | 14. | 13.0 | 14.68 | 16.45 | 6.09 | 1.21 |

FIGURE 5

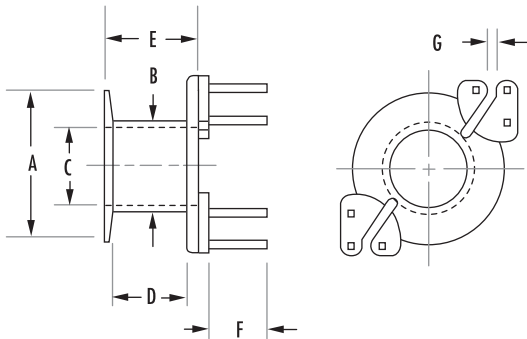


FIGURE 7

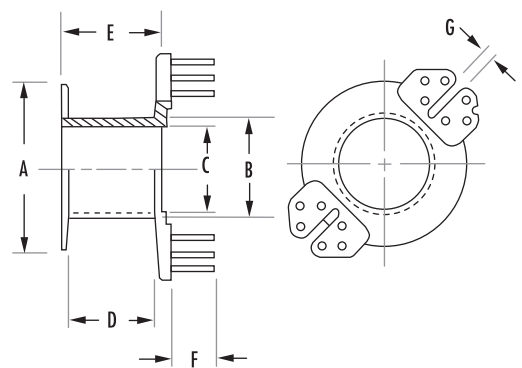
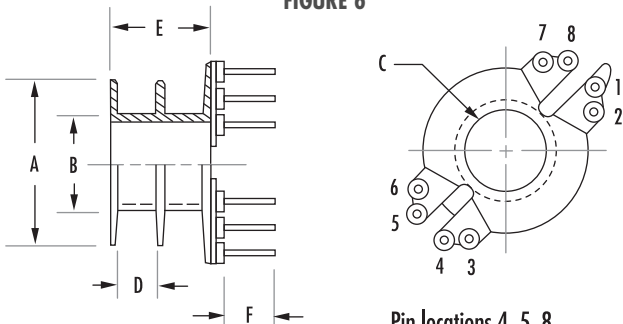


FIGURE 6

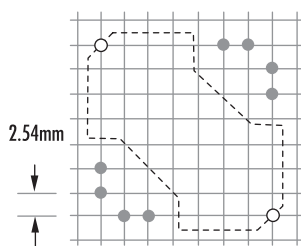
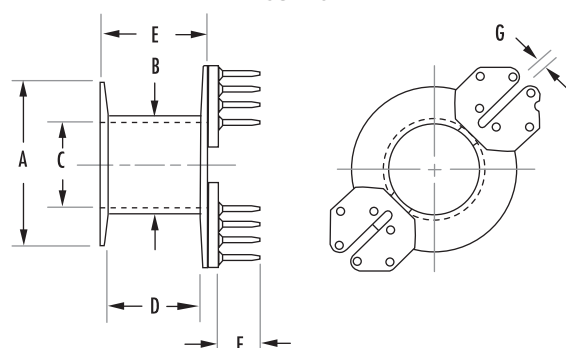


Pin locations 4, 5, 8
blank on 5 pin bobbin

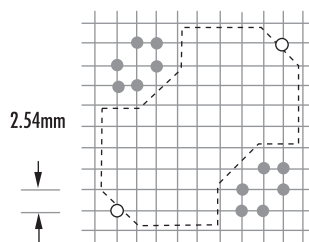
Printed Circuit Bobbins

| PART | NOMINAL WINDING AREA PER SECTION cm ² | AVERAGE LENGTH OF TURN MM | BOBBIN MATERIAL | PIN MATERIAL | PIN DIAMETER |
|-------------------------------|---|------------------------------|--------------------|----------------------------|----------------------|
| PCB181261 | 0.160 | 29.8 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.50 square/round |
| PCB231651 | 0.300 | 42 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.66 |
| PCB231652 2 section | 0.142 | 42 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.66 |
| PCB231681 | 0.300 | 42 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.66 |
| PCB231682 | 0.142 | 42 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.66 |
| PCB2819L1 | 0.452 | 52.4 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.61 |
| PCB3723L1 | 0.730 | 61 | Thermoset Phenolic | Tin coated Phosphor Bronze | 0.84 |

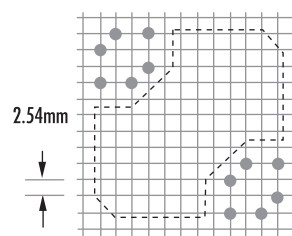
FIGURE 8



42316



42819



43723

- Holes for bobbin pins
- Holes for clip pins

RM Mounting Clamps

| PART | CORE SIZE | FIG. | MECHANICAL DIMENSIONS (mm) | | | | MATERIAL | MATERIAL THICKNESS |
|-----------|-------------|------|----------------------------|-----------|-------|------|--------------|--------------------|
| | | | A NOM | B NOM | | | | |
| 00C111012 | 41110/41510 | 1 | 2.08 | .68 x .30 | 8.38 | 4.34 | Spring Steel | 0.30 |
| 00C181211 | 41812/41912 | 1 | 2.59 | .71 x .38 | 9.85 | 4.34 | Spring Steel | 0.38 |
| 00C231615 | 42316 | 1 | 4.49 | .71 x .35 | 13.58 | 4.59 | Spring Steel | 0.36 |
| 00C281916 | 42819 | 1 | 4.49 | .71 x .4 | 15.54 | 5.05 | Spring Steel | 0.41 |

Two mounting clamps are required per core set.

FIGURE 1

