

# IRON POWDER TOROIDAL CORES (For Resonant Circuits)

| MATERIAL 12 |               | Permeability 4 | Freq. Range 50 MHz - 200 MHz |               |                         | Color - Green & White   |                                     |
|-------------|---------------|----------------|------------------------------|---------------|-------------------------|-------------------------|-------------------------------------|
| Core number | O.D. (inches) | I.D. (inches)  | Hgt. (inches)                | $\ell_e$ (cm) | $A_e$ (cm) <sup>2</sup> | $V_e$ (cm) <sup>3</sup> | $A_L$ Value $\mu\text{h}/100$ turns |
| T-12-12     | .125          | .062           | .050                         | .74           | .010                    | .007                    | 7.5                                 |
| T-16-12     | .160          | .078           | .060                         | .95           | .016                    | .015                    | 8.0                                 |
| T-20-12     | .200          | .088           | .070                         | 1.15          | .025                    | .029                    | 10.0                                |
| T-25-12     | .255          | .120           | .096                         | 1.50          | .042                    | .063                    | 12.0                                |
| T-30-12     | .307          | .151           | .128                         | 1.83          | .065                    | .119                    | 16.0                                |
| T-37-12     | .375          | .205           | .128                         | 2.32          | .070                    | .162                    | 15.0                                |
| T-44-12     | .440          | .229           | .159                         | 2.67          | .107                    | .286                    | 18.5                                |
| T-50-12     | .500          | .303           | .190                         | 3.03          | .121                    | .367                    | 18.0                                |
| T-68-12     | .690          | .370           | .190                         | 4.24          | .196                    | .831                    | 21.0                                |
| T-80-12     | .795          | .495           | .250                         | 5.15          | .242                    | 1.246                   | 22.0                                |
| T-94-12     | .942          | .560           | .312                         | 6.00          | .385                    | 2.310                   | 32.0                                |

Note: The #17 material offers greater temperature stability than #12 materials, but #12 material can provide higher 'Q'.

| MATERIAL 15 |               | Permeability 25 | Freq. Range 0.1 MHz - 2. MHz |               |                         | Color - Red & White     |                                     |
|-------------|---------------|-----------------|------------------------------|---------------|-------------------------|-------------------------|-------------------------------------|
| Core number | O.D. (inches) | I.D. (inches)   | Hgt. (inches)                | $\ell_e$ (cm) | $A_e$ (cm) <sup>2</sup> | $V_e$ (cm) <sup>3</sup> | $A_L$ Value $\mu\text{h}/100$ turns |
| T-12-15     | .125          | .062            | .050                         | .74           | .010                    | .007                    | 50                                  |
| T-16-15     | .160          | .078            | .060                         | .95           | .016                    | .015                    | 55                                  |
| T-20-15     | .200          | .088            | .070                         | 1.15          | .025                    | .029                    | 65                                  |
| T-25-15     | .255          | .120            | .096                         | 1.50          | .042                    | .063                    | 85                                  |
| T-30-15     | .307          | .151            | .128                         | 1.83          | .065                    | .119                    | 93                                  |
| T-37-15     | .375          | .205            | .128                         | 2.32          | .070                    | .162                    | 90                                  |
| T-44-15     | .440          | .229            | .159                         | 2.67          | .107                    | .286                    | 160                                 |
| T-50-15     | .500          | .303            | .190                         | 3.03          | .121                    | .367                    | 135                                 |
| T-68-15     | .690          | .370            | .190                         | 4.24          | .196                    | .831                    | 180                                 |
| T-80-15     | .795          | .495            | .250                         | 5.15          | .242                    | 1.246                   | 170                                 |
| T-94-15     | .942          | .560            | .312                         | 6.00          | .385                    | 2.310                   | 200                                 |
| T-106-15    | 1.060         | .570            | .437                         | 6.50          | .690                    | 4.485                   | 345                                 |
| T-130-15    | 1.300         | .780            | .437                         | 8.29          | .730                    | 6.052                   | 250                                 |
| T-157-15    | 1.570         | .950            | .570                         | 10.05         | 1.140                   | 11.457                  | 360                                 |

| MATERIAL 17 |               | Permeability 4 | Freq. Range 20 MHz - 200 MHz |               |                         | Color - Blue & Yellow   |                                     |
|-------------|---------------|----------------|------------------------------|---------------|-------------------------|-------------------------|-------------------------------------|
| Core number | O.D. (inches) | I.D. (inches)  | Hgt. (inches)                | $\ell_e$ (cm) | $A_e$ (cm) <sup>2</sup> | $V_e$ (cm) <sup>3</sup> | $A_L$ Value $\mu\text{h}/100$ turns |
| T-12-17     | .125          | .062           | .050                         | .75           | .010                    | .008                    | 7.5                                 |
| T-16-17     | .160          | .078           | .060                         | .93           | .015                    | .0141                   | 8.0                                 |
| T-20-17     | .200          | .088           | .070                         | 1.15          | .025                    | .026                    | 10.0                                |
| T-25-17     | .255          | .120           | .096                         | 1.50          | .042                    | .055                    | 12.0                                |
| T-30-17     | .307          | .151           | .128                         | 1.83          | .065                    | .110                    | 16.0                                |
| T-37-17     | .375          | .205           | .128                         | 2.30          | .070                    | .147                    | 15.0                                |
| T-44-17     | .440          | .229           | .159                         | 2.67          | .107                    | .266                    | 18.5                                |
| T-50-17     | .500          | .303           | .190                         | 3.03          | .121                    | .358                    | 18.0                                |
| T-68-17     | .690          | .370           | .190                         | 4.24          | .196                    | .759                    | 21.0                                |
| T-80-17     | .795          | .495           | .250                         | 5.14          | .231                    | 1.190                   | 22.0                                |
| T-90-17     | .942          | .560           | .312                         | 6.00          | .385                    | 2.310                   | 32.0                                |

**MATERIAL 26** See AC Line Filter and DC Choke section.