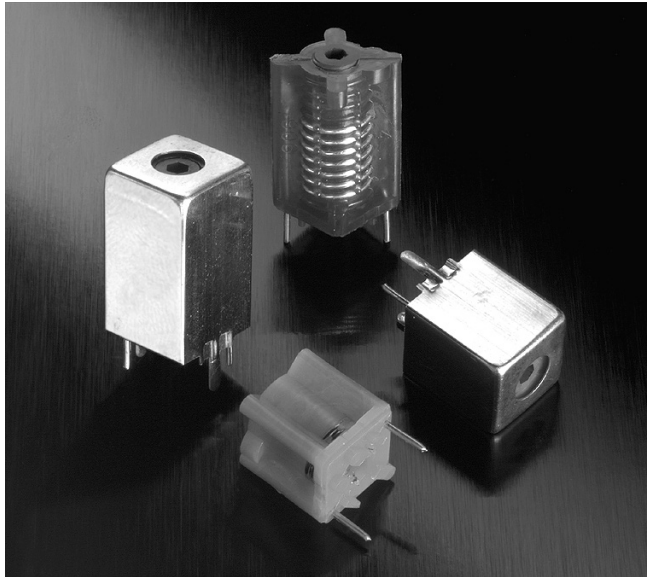


10 mm Tunable Coils - 142, 143, 144



These Coilcraft variable inductors are precision molded in plastic to ensure constant winding pitch and a consistent relationship to the printed circuit board.

Extremely economical, even in small quantities, the coils come in standard inductance values from 0.05 μ H to 1.5 μ H. 144 Series parts are also available with a tap to meet specific requirements.

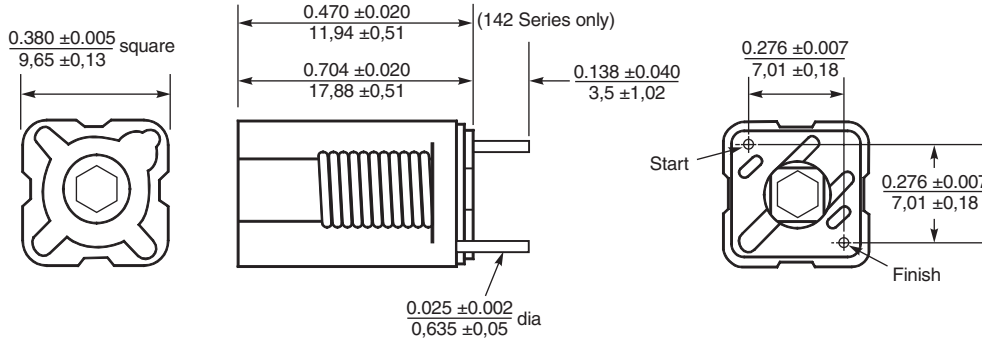
Tuning is done by means of a threaded powdered iron core with a hex socket for easy, positive adjustment. Plated brass shield cans with solderable tabs are optional.

These parts can be ordered without cores for use as fixed inductors.

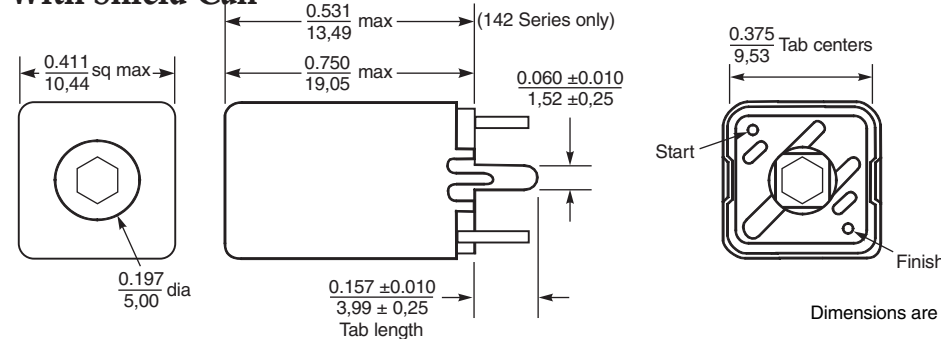
Coilcraft **Designer's Kit M302** contains samples of all standard 10 mm and 7 mm tunable inductors. To order, contact Coilcraft or visit <http://order.coilcraft.com> to purchase on-line.



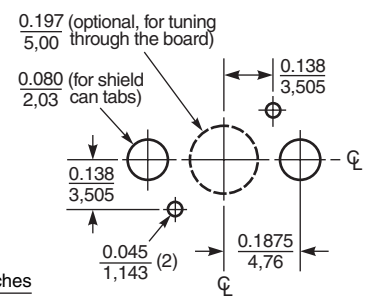
Unshielded Styles



With Shield Can



Recommended Board Layout



Terminations: Series 142 and 143 leads: Tin-silver over copper
Series 144 leads: Matte tin over copper
Shield can tabs: Tin-silver over nickel over brass

Resistance to soldering heat: Wave solder only. Recommended maximum board surface temperature of 168°C (334°F) for no more than three seconds. Pre-heating is recommended to minimize time over the solder nozzle.

| | Unshielded | With shield can |
|-------------------|---|---|
| Weight: | 142 series: 1.39 – 1.82 g 143 series: 1.75 – 2.40 g 144 series: 1.22 – 1.74 g | 1.64 – 2.16 g 2.85 – 3.54 g 2.35 – 2.91 g |
| Packaging: | 50 per tube | 50 per tube |



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Unshielded

| Part number ¹ | Color | Turns | No core L ² nom (nH) | L min ³ (nH) | L nom (nH) | L max (nH) | Q min ⁴ | No core SRF min (MHz) | DCR max (mOhm) | Irms ⁵ (A) |
|--------------------------|--------|-------|---------------------------------|-------------------------|------------|------------|--------------------|-----------------------|----------------|-----------------------|
| 144-01J12L | Brown | 1½ | 53 | 56 | 59 | 62 | 140 | 1800 | 7.4 | 11.0 |
| 144-02J12L | Red | 2½ | 75 | 79 | 88 | 98 | 145 | 1150 | 8.6 | 10.0 |
| 144-03J12L | Orange | 3½ | 99 | 104 | 123 | 142 | 147 | 900 | 9.7 | 9.6 |
| 144-04J12L | Yellow | 4½ | 126 | 132 | 164 | 195 | 150 | 765 | 10.9 | 9.0 |
| 144-05J12L | Green | 5½ | 154 | 162 | 207 | 252 | 154 | 670 | 12.1 | 8.6 |
| 144-06J12L | Blue | 6½ | 182 | 193 | 250 | 306 | 154 | 610 | 13.6 | 8.1 |
| 144-07J12L | Violet | 7½ | 214 | 240 | 298 | 356 | 158 | 525 | 14.7 | 7.8 |
| 144-08J12L | Gray | 8½ | 245 | 283 | 344 | 405 | 160 | 465 | 15.9 | 7.5 |
| 144-09J12L | White | 9½ | 274 | 328 | 387 | 446 | 162 | 420 | 17.1 | 7.2 |
| 144-10J12L | Black | 10½ | 307 | 391 | 442 | 493 | 162 | 390 | 18.5 | 7.0 |
| 142-01J08L | Brown | 1½ | 63 | 63 | 65 | 68 | 115 | 980 | 7.4 | 13.4 |
| 142-02J08L | Red | 2½ | 92 | 93 | 100 | 107 | 118 | 600 | 8.4 | 12.5 |
| 142-03J08L | Orange | 3½ | 127 | 133 | 145 | 157 | 120 | 470 | 9.6 | 11.8 |
| 142-04J08L | Yellow | 4½ | 166 | 174 | 196 | 218 | 125 | 420 | 10.8 | 11.1 |
| 142-05J08L | Green | 5½ | 212 | 226 | 256 | 287 | 122 | 370 | 11.9 | 10.5 |
| 142-06J08L | Blue | 6½ | 258 | 275 | 315 | 355 | 112 | 340 | 13.2 | 10.0 |
| 142-07J08L | Violet | 7½ | 307 | 330 | 378 | 427 | 112 | 310 | 14.5 | 9.6 |
| 142-08J08L | Gray | 8½ | 357 | 396 | 450 | 504 | 106 | 290 | 15.7 | 9.2 |
| 142-09J08L | White | 9½ | 412 | 473 | 520 | 567 | 110 | 270 | 16.9 | 8.9 |
| 142-10J08L | Black | 10½ | 464 | 550 | 592 | 635 | 104 | 260 | 18.0 | 8.6 |
| 143-09J12L | White | 9½ | 385 | 404 | 550 | 693 | 86 | 280 | 16.7 | 7.3 |
| 143-10J12L | Black | 10½ | 438 | 460 | 624 | 788 | 90 | 270 | 17.9 | 7.1 |
| 143-11J12L | Brown | 11½ | 490 | 515 | 708 | 900 | 78 | 260 | 19.2 | 6.8 |
| 143-12J12L | Red | 12½ | 545 | 578 | 764 | 950 | 84 | 250 | 20.5 | 6.6 |
| 143-13J12L | Orange | 13½ | 600 | 673 | 845 | 1020 | 84 | 245 | 21.7 | 6.4 |
| 143-14J12L | Yellow | 14½ | 645 | 726 | 908 | 1090 | 82 | 240 | 22.8 | 6.3 |
| 143-15J12L | Green | 15½ | 692 | 803 | 978 | 1150 | 90 | 230 | 23.9 | 6.1 |
| 143-16J12L | Blue | 16½ | 765 | 891 | 1080 | 1270 | 74 | 225 | 25.2 | 6.0 |
| 143-17J12L | Violet | 17½ | 830 | 1010 | 1180 | 1340 | 74 | 215 | 26.4 | 5.8 |
| 143-18J12L | Gray | 18½ | 895 | 1100 | 1250 | 1400 | 92 | 195 | 27.6 | 5.7 |
| 143-19J12L | White | 19½ | 910 | 1200 | 1320 | 1440 | 98 | 190 | 28.9 | 5.6 |
| 143-20J12L | Black | 20½ | 960 | 1300 | 1400 | 1500 | 92 | 185 | 30.0 | 5.5 |

Shielded

| Part number ¹ | Color | Turns | No core L ² nom (nH) | L min ³ (nH) | L nom (nH) | L max (nH) | Q min ⁴ | No core SRF min (MHz) | DCR max (mOhm) | Irms ⁵ (A) |
|--------------------------|--------|-------|---------------------------------|-------------------------|------------|------------|--------------------|-----------------------|----------------|-----------------------|
| 144-01J12SL | Brown | 1½ | 50 | 52 | 53 | 54 | 97 | 2200 | 7.4 | 11.0 |
| 144-02J12SL | Red | 2½ | 67 | 70 | 74 | 78 | 98 | 1200 | 8.6 | 10.0 |
| 144-03J12SL | Orange | 3½ | 88 | 92 | 99 | 106 | 98 | 920 | 9.7 | 9.6 |
| 144-04J12SL | Yellow | 4½ | 106 | 111 | 122 | 133 | 100 | 790 | 10.9 | 9.0 |
| 144-05J12SL | Green | 5½ | 126 | 132 | 149 | 165 | 101 | 685 | 12.1 | 8.6 |
| 144-06J12SL | Blue | 6½ | 147 | 154 | 175 | 196 | 106 | 625 | 13.6 | 8.1 |
| 144-07J12SL | Violet | 7½ | 168 | 176 | 200 | 223 | 104 | 530 | 14.7 | 7.8 |
| 144-08J12SL | Gray | 8½ | 190 | 202 | 226 | 250 | 108 | 480 | 15.9 | 7.5 |
| 144-09J12SL | White | 9½ | 210 | 239 | 256 | 274 | 108 | 435 | 17.1 | 7.2 |
| 144-10J12SL | Black | 10½ | 232 | 270 | 282 | 295 | 106 | 420 | 18.5 | 7.0 |
| 142-01J08SL | Brown | 1½ | 58 | 58 | 59.5 | 61 | 82 | 1230 | 7.4 | 13.4 |
| 142-02J08SL | Red | 2½ | 81 | 84 | 86 | 89 | 83 | 650 | 8.4 | 12.5 |
| 142-03J08SL | Orange | 3½ | 110 | 115 | 120 | 121 | 85 | 550 | 9.6 | 11.8 |
| 142-04J08SL | Yellow | 4½ | 140 | 147 | 156 | 160 | 88 | 460 | 10.8 | 11.1 |
| 142-05J08SL | Green | 5½ | 174 | 182 | 197 | 205 | 94 | 410 | 11.9 | 10.5 |
| 142-06J08SL | Blue | 6½ | 210 | 220 | 240 | 248 | 94 | 370 | 13.2 | 10.0 |
| 142-07J08SL | Violet | 7½ | 247 | 259 | 280 | 290 | 90 | 330 | 14.5 | 9.6 |
| 142-08J08SL | Gray | 8½ | 284 | 299 | 322 | 337 | 86 | 320 | 15.7 | 9.2 |
| 142-09J08SL | White | 9½ | 319 | 338 | 363 | 377 | 88 | 310 | 16.9 | 8.9 |
| 142-10J08SL | Black | 10½ | 357 | 382 | 410 | 422 | 82 | 290 | 18.0 | 8.6 |
| 143-09J12SL | White | 9½ | 300 | 315 | 369 | 423 | 80 | 303 | 16.7 | 7.3 |
| 143-10J12SL | Black | 10½ | 338 | 355 | 416 | 477 | 82 | 290 | 17.9 | 7.1 |
| 143-11J12SL | Brown | 11½ | 377 | 396 | 468 | 540 | 78 | 270 | 19.2 | 6.8 |
| 143-12J12SL | Red | 12½ | 412 | 433 | 509 | 585 | 80 | 265 | 20.5 | 6.6 |
| 143-13J12SL | Orange | 13½ | 452 | 475 | 556 | 637 | 80 | 265 | 21.7 | 6.4 |
| 143-14J12SL | Yellow | 14½ | 490 | 515 | 604 | 693 | 78 | 260 | 22.8 | 6.3 |
| 143-15J12SL | Green | 15½ | 522 | 583 | 660 | 738 | 80 | 250 | 23.9 | 6.1 |
| 143-16J12SL | Blue | 16½ | 575 | 638 | 720 | 801 | 76 | 245 | 25.2 | 6.0 |
| 143-17J12SL | Violet | 17½ | 612 | 693 | 770 | 846 | 76 | 240 | 26.4 | 5.8 |
| 143-18J12SL | Gray | 18½ | 650 | 754 | 814 | 874 | 82 | 215 | 27.6 | 5.7 |
| 143-19J12SL | White | 19½ | 675 | 792 | 846 | 900 | 80 | 210 | 28.9 | 5.6 |
| 143-20J12SL | Black | 20½ | 715 | 847 | 896 | 945 | 74 | 200 | 30.0 | 5.5 |

- To order fixed inductance parts without cores, eliminate the "J08" or "J12", e.g. 144-01L or 144-01SL.
- Inductance and Q readings taken on Boonton 260-A Q meter with 16 AWG tinned copper 1/2" long soldered along leads and bent at 90° 1/4" down from standoffs.
All inductance values greater than 0.1 µH read at recommended Q meter frequency; those below 0.1 µH calculated from readings taken at 50 MHz.
- L min measured with core halfway out top of form.
- Q min measured at L nom at 40 MHz.
- Average current for a 40°C rise above 25°C ambient.
- Core material: Carbonyl J
Core length: 142 Series - 1/4"
143, 144 Series - 3/8"
- Taps available on 144 series parts at 1/8, 3/8, 5/8 and 7/8 turn increments.
- Operating temperature range -40°C to +85°C.
- Electrical specifications at 25°C.



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