



# 10 mm Tunable Coils-142, 143, 144 Series



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  $\mu$ H to 1.5  $\mu$ 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.

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**TUNING WRENCH**

## Unshielded Styles



## With Shield Can



**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.

**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



Specifications subject to change without notice.  
Please check our website for latest information.

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# Unshielded

| Part number <sup>1</sup> | Color  | Turns | No core L <sup>2</sup> nom (nH) | L min <sup>3</sup> (nH) | L nom (nH) | L max (nH) | Q min <sup>4</sup> | No core SRF min (MHz) | DCR max (mOhm) | Irms <sup>5</sup> (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 <sup>1</sup> | Color  | Turns | No core L <sup>2</sup> nom (nH) | L min <sup>3</sup> (nH) | L nom (nH) | L max (nH) | Q min <sup>4</sup> | No core SRF min (MHz) | DCR max (mOhm) | Irms <sup>5</sup> (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.

# Coilcraft®

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