



# 7 mm Tunable RF Coils – 146, 150 Series



Coilcraft tunable coils provide the compactness of a 7 mm coil and the low drift reliability of an insert molded coil.

Standard inductance values range from less than 0.05  $\mu\text{H}$  to over 0.5  $\mu\text{H}$ . 150 Series coils with a tap are also available to meet specific requirements.

The windings of these economical coils are precision molded into a single piece of polypropylene for mechanical and electrical stability. Optional plated brass shield cans with solderable tabs provide integral shielding and additional mounting stability.

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

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

## Unshielded Styles

$0.268 \pm 0.005$  square  
 $6.81 \text{ mm} \pm 0.13$



$0.450 \pm 0.020$   
 $11.43 \pm 0.51$



$0.138 \pm 0.040$   
 $3.5 \pm 1.02$

$0.020 \pm 0.002$  dia  
 $0.51 \pm 0.05$



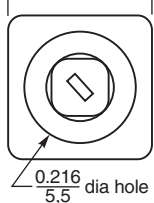
**Weight:** 146 series Unshielded 0.44 – 0.70 g With shield can 0.91 – 1.12 g  
150 series 0.45 – 0.61 g 0.88 – 1.08 g

$0.177 \pm 0.005$   
 $4.5 \pm 0.13$

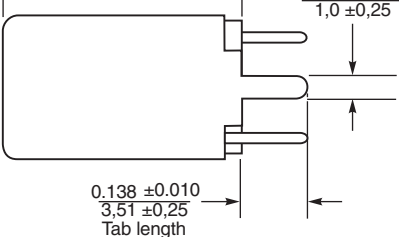
$0.177 \pm 0.005$   
 $4.5 \pm 0.13$

## With Shield Can

$0.300$  max  
 $7.6$

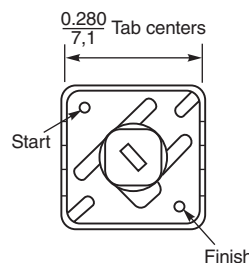


$0.475$  max  
 $12.1$



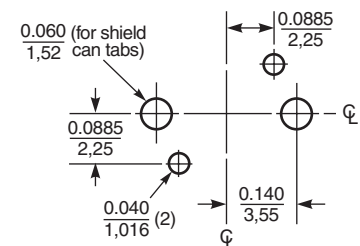
$0.039 \pm 0.010$   
 $1.0 \pm 0.25$

$0.138 \pm 0.010$   
 $3.51 \pm 0.25$   
Tab length



$0.280$   
 $7.1$  Tab centers

## Recommended Board Layout



**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 146 leads: Tin-silver over copper  
Series 150 leads: Matte tin over copper  
Shield can tabs: Tin-silver over nickel over brass

**Coilcraft**<sup>®</sup>

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

Document 109-1 Revised 9/30/08

1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>



# 7 mm Tunable RF Coils – 146, 150 Series

## Unshielded

**TRITUNER** 3 TOOLS IN 1  
SEE INDEX  
**TUNING WRENCH**

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 @ L nom	No core SRF min (MHz)	DCR max (mOhm)	I <sub>rms</sub> <sup>4</sup>
150-01J08L	Brown	1½	44.5	46.0	49.0	52.0	88 @ 50 MHz	2000	8.0	11.0
150-02J08L	Red	2½	58.5	62.0	70.0	78.0	100 @ 50 MHz	1300	9.0	10.5
150-03J08L	Orange	3½	77.5	82.0	98.0	114	108 @ 50 MHz	1000	10.5	9.8
150-04J08L	Yellow	4½	94.5	108	130	154	114 @ 50 MHz	780	11.6	9.3
150-05J08L	Green	5½	116	137	165	193	114 @ 50 MHz	650	13.2	8.7
150-06J08L	Blue	6½	138	176	205	234	112 @ 50 MHz	550	14.7	8.2
150-07J08L	Violet	7½	156	222	245	268	108 @ 50 MHz	510	16.0	7.9
146-01J08L	Brown	1½	45.0	47.0	50.0	53.0	90 @ 50 MHz	1300	8.0	11.0
146-02J08L	Red	2½	65.0	68.0	78.0	88.0	100 @ 50 MHz	780	9.0	10.5
146-03J08L	Orange	3½	86.0	90.0	108	126	100 @ 50 MHz	560	10.5	9.8
146-04J08L	Yellow	4½	111	117	146	175	94 @ 50 MHz	475	11.6	9.3
146-05J08L	Green	5½	140	148	190	232	88 @ 50 MHz	430	13.0	8.8
146-06J08L	Blue	6½	167	188	240	292	78 @ 50 MHz	390	14.5	8.3
146-07J08L	Violet	7½	198	231	292	350	72 @ 50 MHz	350	15.6	8.0
146-08J08L	Gray	8½	228	272	342	412	68 @ 50 MHz	330	18.0	7.5
146-09J08L	White	9½	264	330	405	480	66 @ 40 MHz	320	19.4	7.2
146-10J08L	Black	10½	292	390	465	540	60 @ 40 MHz	290	21.0	6.8

## 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 @ L nom	No core SRF min (MHz)	DCR max (mOhm)	I <sub>rms</sub> <sup>4</sup>
150-01J08SL	Brown	1½	42.5	43.5	44.5	44.5	72 @ 50 MHz	1900	8.0	11.0
150-02J08SL	Red	2½	54.0	56.0	60.0	64.0	80 @ 50 MHz	1450	9.0	10.5
150-03J08SL	Orange	3½	68.0	71.0	76.0	81.0	84 @ 50 MHz	1100	10.5	9.8
150-04J08SL	Yellow	4½	82.5	86.0	95.0	104	85 @ 50 MHz	900	11.6	9.3
150-05J08SL	Green	5½	95.5	107	115	123	84 @ 50 MHz	750	13.2	8.7
150-06J08SL	Blue	6½	109	125	134	143	82 @ 50 MHz	620	14.7	8.2
150-07J08SL	Violet	7½	123	150	156	162	80 @ 50 MHz	560	16.0	7.9
146-01J08SL	Brown	1½	44.0	45.0	46.0	47.0	76 @ 50 MHz	1550	8.0	11.0
146-02J08SL	Red	2½	59.0	62.0	65.0	68.0	78 @ 50 MHz	850	9.0	10.5
146-03J08SL	Orange	3½	75.0	80.0	85.0	90.0	78 @ 50 MHz	660	10.5	9.8
146-04J08SL	Yellow	4½	95.0	100	110	120	78 @ 50 MHz	570	11.6	9.3
146-05J08SL	Green	5½	115	120	135	150	76 @ 50 MHz	510	13.0	8.8
146-06J08SL	Blue	6½	136	142	163	184	72 @ 50 MHz	470	14.5	8.3
146-07J08SL	Violet	7½	155	172	194	216	68 @ 50 MHz	430	15.6	8.0
146-08J08SL	Gray	8½	176	200	224	248	66 @ 50 MHz	400	18.0	7.5
146-09J08SL	White	9½	202	234	260	284	60 @ 50 MHz	360	19.4	7.2
146-10J08SL	Black	10½	224	260	288	315	56 @ 50 MHz	330	21.0	6.8

- To order fixed inductance parts without cores, eliminate the "J08", e.g. 150-01L or 150-01SL
- 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.  
All inductance values below 0.1 µH calculated from readings taken at 50 MHz.

- L min measured with core halfway out top of form.
- Average current for a 40°C rise above 25°C ambient.
- Core material: Carbonyl J; Core length: 1/4"
- Taps available in 150 series parts at 1/8, 3/8, 5/8 and 7/8 turns.
- Operating temperature range -40°C to +85°C.
- Electrical specifications at 25°C.

**COILCRAFT** ACCURATE  
**PRECISION** REPEATABLE  
MEASUREMENTS  
SEE INDEX **TEST FIXTURES**

**Coilcraft**<sup>®</sup>

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

Document 109-2 Revised 09/30/08

1102 Silver Lake Road Cary, Illinois 60013 Phone 847/639-6400 Fax 847/639-1469

E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>