



# 5 mm Tunable Inductor - 164, 165 Series



- These tunables offer the compactness of a 5 mm coil and the low drift reliability of an insert molded coil.
- Inductance values from 9 to over 280 nH
- Optional plated brass cans provide integral shielding.
- Can be ordered without cores for use as fixed inductors.

**Designer's Kit M305** contains 2 each of all parts

**Core material** Aluminum, 0.187" (4.75 mm) long.

**Terminations** Leads: RoHS compliant tin-silver over copper. Other terminations available at additional cost. Shield can tabs: Tin-silver over nickel over brass

#### Weight

164 series unshielded: 0.16 – 0.31 g; with shield can: 0.45 – 0.60 g  
165 series unshielded: 0.15 – 0.25 g; with shield can: 0.43 – 0.54 g

**Ambient temperature** –40°C to +85°C

**Storage temperature** Component: –40°C to +85°C.

Packaging tubes: –40°C to +80°C

**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.

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

#### Failures in Time (FIT) / Mean Time Between Failures (MTBF)

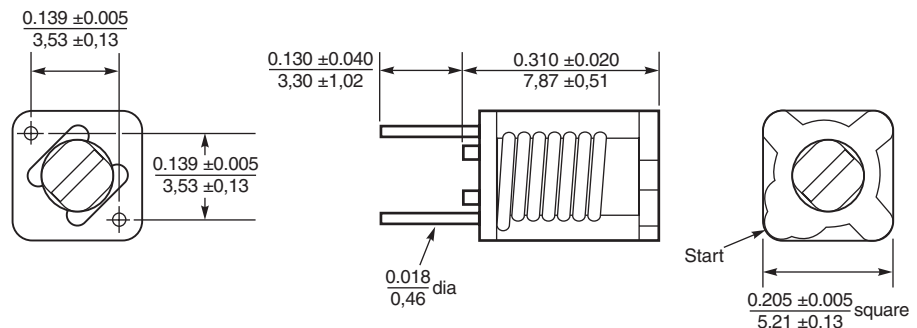
Two per billion hours / 1/2 billion hours, calculated per Telcordia SR-332

**Packaging** 50 parts per tube

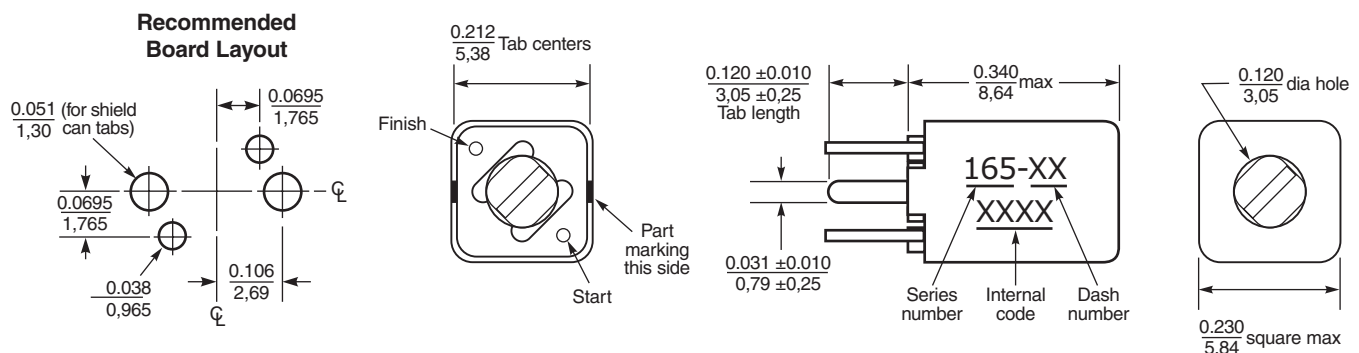
**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf.

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

## Unshielded Styles



## Shielded Styles



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# 5 mm Tunable Inductor–Unshielded

Part number <sup>1</sup>	Color	Turns	No core		at L max <sup>3</sup>		at L min <sup>4</sup>		Freq (MHz)	No core SRF min (MHz)	Irms <sup>6</sup> (A)
			L (nH) <sup>2</sup>	Q min <sup>5</sup>	L (nH) <sup>2</sup>	Q min <sup>5</sup>	L (nH) <sup>2</sup>	Q min <sup>5</sup>			
164-01A06L	Brown	1 1/2	19	145	19	145	16	112	150	2000	7.2
164-02A06L	Red	2 1/2	34	138	34	138	26	96	150	1260	5.1
164-03A06L	Orange	3 1/2	55	130	55	130	38	79	150	960	4.4
164-04A06L	Yellow	4 1/2	77	119	77	119	52	72	150	850	3.7
164-05A06L	Green	5 1/2	101	108	99	86	65	64	150	770	3.6
164-06A06L	Blue	6 1/2	128	107	126	75	83	60	100	730	3.3
164-07A06L	Violet	7 1/2	156	106	150	68	97	57	100	640	3.1
164-08A06L	Gray	8 1/2	183	100	178	62	112	53	100	570	2.9
164-09A06L	White	9 1/2	216	100	190	62	131	53	100	540	2.7
164-10A06L	Black	10 1/2	248	92	223	55	148	51	100	490	2.5
164-11A06L	Brown	11 1/2	281	92	246	55	170	51	100	360	2.3
165-00A06L	Black	1/2	9	147	9	147	9	131	150	6000	8.1
165-01A06L	Brown	1 1/2	18	145	18	145	15	112	150	2850	6.5
165-02A06L	Red	2 1/2	32	143	32	143	25	92	150	1860	4.9
165-03A06L	Orange	3 1/2	48	138	45	135	33	84	150	1410	4.2
165-04A06L	Yellow	4 1/2	64	133	60	114	43	76	150	1130	3.8
165-05A06L	Green	5 1/2	83	125	78	110	54	73	150	820	3.6
165-06A06L	Blue	6 1/2	103	120	90	94	68	70	150	800	3.4
165-07A06L	Violet	7 1/2	122	115	105	92	79	69	150	770	3.1

## Notes:

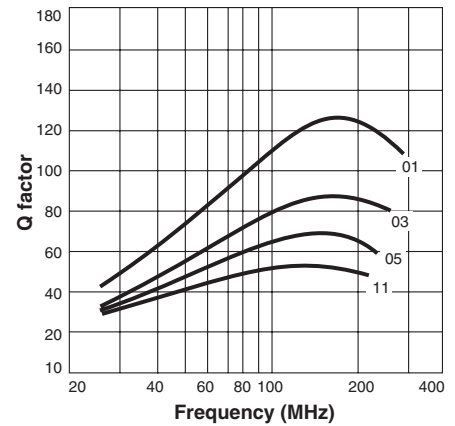
- To order fixed inductance parts without cores, eliminate the "A06", e.g. 164-01.
- Inductance measured on Agilent/HP 4286A Impedance Analyzer with 16092A Spring Clip Fixture.
- L max measured with core halfway out top of form.
- L min measured with core centered in winding.
- Q measured on Agilent/HP 4286A with 16092A fixture, direct connect to Agilent/HP 4342A Q-Meter and Meguro MQ-171 Q-Meter with 0.5" bus bars.
- Current that causes a 15°C rise above 25°C ambient.
- Electrical specifications 25°C.

## Typical Q vs Frequency

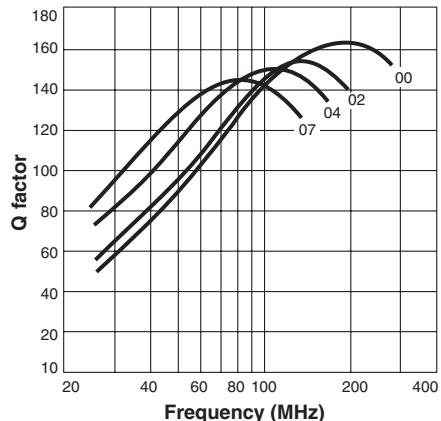
### 164 Series No Core



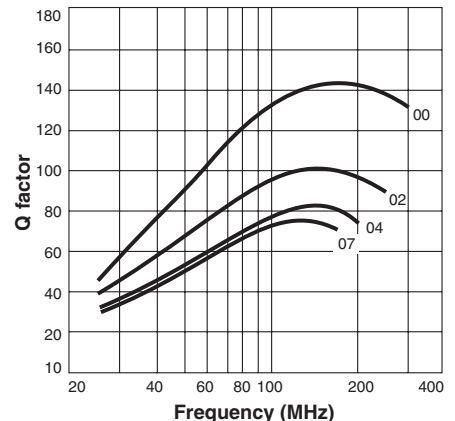
### 164 Series Al Core



### 165 Series No Core



### 165 Series Al Core



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# 5 mm Tunable Inductor–Shielded

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

Part number <sup>1</sup>	Color	Turns	No core		at L max <sup>3</sup>		at L min <sup>4</sup>		Freq (MHz)	No core SRF min (MHz)	Irms <sup>6</sup> (A)
			L (nH) <sup>2</sup>	Q min <sup>5</sup>	L (nH) <sup>2</sup>	Q min <sup>5</sup>	L (nH) <sup>2</sup>	Q min <sup>5</sup>			
164-01A06SL	Brown	1 1/2	16	124	16	124	14	106	150	2100	7.2
164-02A06SL	Red	2 1/2	27	108	27	108	22	89	150	1300	5.1
164-03A06SL	Orange	3 1/2	41	92	41	92	32	72	150	1100	4.4
164-04A06SL	Yellow	4 1/2	56	86	56	84	43	66	150	940	3.7
164-05A06SL	Green	5 1/2	71	80	71	79	53	60	150	980	3.6
164-06A06SL	Blue	6 1/2	88	79	80	77	65	59	150	800	3.3
164-07A06SL	Violet	7 1/2	105	75	101	70	76	54	100	750	3.1
164-08A06SL	Gray	8 1/2	122	74	117	64	87	54	100	580	2.9
164-09A06SL	White	9 1/2	141	71	134	62	100	53	100	550	2.7
164-10A06SL	Black	10 1/2	160	69	150	60	113	51	100	490	2.5
164-11A06SL	Brown	11 1/2	179	69	164	60	127	51	100	400	2.3
165-00A06SL	Black	1/2	9	138	9	138	9	121	150	6000	8.1
165-01A06SL	Brown	1 1/2	16	124	16	124	14	104	150	2570	6.5
165-02A06SL	Red	2 1/2	25	110	25	110	21	87	150	1670	4.9
165-03A06SL	Orange	3 1/2	35	104	33	102	28	78	150	1230	4.2
165-04A06SL	Yellow	4 1/2	46	97	41	90	35	69	150	1150	3.8
165-05A06SL	Green	5 1/2	57	92	50	82	43	67	150	820	3.6
165-06A06SL	Blue	6 1/2	68	86	59	75	52	65	150	800	3.4
165-07A06SL	Violet	7 1/2	80	85	70	74	60	64	150	770	3.1

**Notes:**

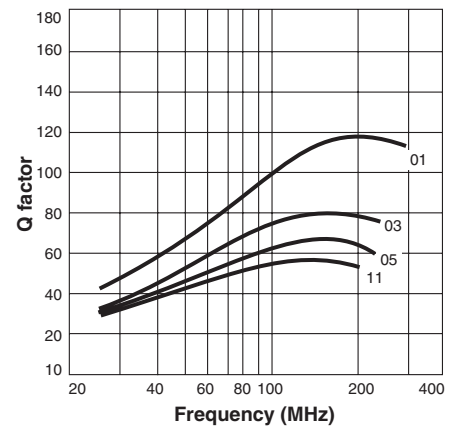
- To order fixed inductance parts without cores, eliminate the "A06", e.g. 164-01S.
- Inductance measured on Agilent/HP 4286A Impedance Analyzer with 16092A Spring Clip Fixture.
- L max measured with core halfway out top of form.
- L min measured with core centered in winding.
- Q measured on Agilent/HP 4286A with 16092A fixture, direct connect to Agilent/HP 4342A Q-Meter and Meguro MQ-171 Q-Meter with 0.5" bus bars.
- Current that causes a 15°C rise above 25°C ambient.
- Electrical specifications 25°C.

## Typical Q vs Frequency

164 Series No Core



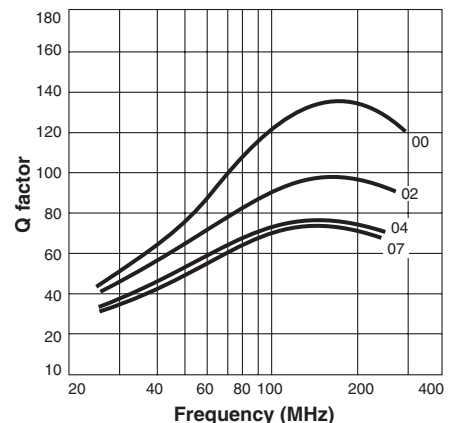
164 Series Al Core



165 Series No Core



165 Series Al Core



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