

Test Procedure for inductance and Q

The procedure for measuring of inductance and Q as outlined in MIL-C-15305 and reproduced hereon is recommended for all devices. Use of this procedure will eliminate many of the variables leading to correlation discrepancies between Ohmite Manufacturing and the user; and will yield consistent and reproducible measurements.

The following equipment is required:

- Hewlett Packard (Boonton) 260A Q Meter or equivalent.
- Test fixture (A or B) per sketch.
- Shorting bar per sketch
- Frequency counter capable of monitoring Q meter frequency to at least $\pm 0.1\%$ accuracy.

1.0 Measurement of inductors up to 10 microhenries.

1.1 Insert appropriate test fixture in Q meter coil terminals with test fixture label facing cap terminals.

1.2 Insert appropriate shorting bar in fixture resting against stops and centered.

1.3 Set Q meter at 400pf (Vernier @ zero).

1.4 Adjust frequency dial for resonance (approximately 30.5MHz).

1.5 Record frequency (at least 0.1% accuracy).

1.6 Calculate test fixture inductance and Q meter residual inductance using the following formula.

$$L = \frac{1}{4\pi^2 f^2 C} - \text{inductance of shorting bar.}$$

(shorting bar for TFA is .008 μ H)

L = approximately .06 μ H for TFA.

1.7 Remove shorting bar and adjust frequency dial to 'test' frequency.

1.8 Position coil under test against stops and resonate in accordance with Q meter manual.

1.9 Subtract test fixture and residual inductance from measured reading.

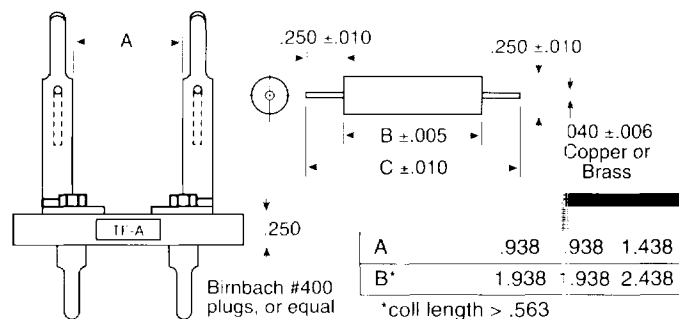
2.0 Q should be measured using procedure in Q meter manual except positioned in test fixture per 1.8 above.

2.1 Measurement of inductors above 10.0 μ H.

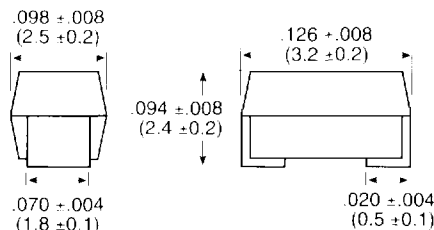
2.2 Equipment same as above

2.3 Measure inductance as above but do not subtract test fixture and residual inductance.

2.4 Q is measured per 2.0 above.



Surface mount inductors



PSM3-010K	10nH	10.0	10	10.0	20	40.0	50	50*	0.04	>800	1050
PSM3-012K	12nH	10.0	10	10.0	20	40.0	50	50*	0.04	>800	1050
PSM3-015K	15nH	10.0	10	10.0	20	40.0	50	50*	0.05	>800	950
PSM3-018K	18nH	10.0	10	10.0	20	40.0	50	50*	0.05	>800	950
PSM3-022K	22nH	10.0	10	10.0	20	40.0	50	50*	0.06	>800	870
PSM3-027K	27nH	10.0	10	10.0	25	40.0	50	50*	0.07	>800	800
PSM3-033K	33nH	10.0	10	10.0	25	40.0	50	50*	0.08	>800	750
PSM3-039K	39nH	10.0	10	10.0	30	40.0	50	50*	0.09	>800	750
PSM3-047K	47nH	10.0	15	10.0	30	40.0	50	50*	0.09	>800	710
PSM3-056K	56nH	10.0	15	10.0	30	40.0	50	50*	0.10	>800	670
PSM3-068K	68nH	10.0	15	10.0	30	40.0	45	50*	0.10	>800	670
PSM3-082K	82nH	10.0	15	10.0	30	40.0	40	50*	0.12	>800	610
PSM3-100K	100nH	10.0	35	10.0	50	25.0	55	50*	0.07	800	800
PSM3-120K	120nH	10.0	35	10.0	50	25.0	55	50*	0.08	800	750
PSM3-150K	150nH	10.0	35	10.0	50	25.0	50	50*	0.08	750	750
PSM3-180K	180nH	10.0	35	10.0	50	25.0	50	50*	0.09	650	710
PSM3-200K	200nH	10.0	35	10.0	50	25.0	45	50*	0.10	550	670
PSM3-270K	270nH	10.0	35	10.0	50	25.0	40	50*	0.12	400	610
PSM3-330K	330nH	10.0	35	10.0	45	25.0	45	50*	0.14	400	570
PSM3-390K	390nH	10.0	35	10.0	45	25.0	45	40*	0.17	320	510
PSM3-470K	470nH	10.0	35	10.0	45	25.0	40	40*	0.20	250	470
PSM3-560K	560nH	10.0	30	10.0	45	25.0	40	35*	0.27	170	410
PSM3-680K	680nH	10.0	30	10.0	45	25.0	40	35*	0.30	150	390
PSM3-820K	820nH	10.0	30	10.0	45	25.0	35	35	0.33	120	370
PSM3-101K	1.000nH	10.0	30	10.0	45	25.0	50	35	0.35	100	360
PSM3-121K	1.200nH	4.0	30	4.0	30	7.9	40	25	0.40	90	330
PSM3-151K	1.500nH	4.0	30	4.0	35	7.9	40	25	0.45	80	310
PSM3-181K	1.800nH	4.0	30	4.0	35	7.9	35	25	0.70	70	250
PSM3-221K	2.200nH	4.0	30	4.0	35	7.9	33	25	0.80	60	240
PSM3-271K	2.700nH	4.0	30	4.0	35	7.9	30	25	0.95	55	220
PSM3-331K	3.300nH	4.0	35	4.0	35	7.9	30	25	1.00	50	210
PSM3-391K	3.900nH	4.0	35	4.0	35	7.9	35	25	1.50	47	175
PSM3-471K	4.700nH	4.0	35	4.0	35	7.9	25	25	1.90	45	150
PSM3-561K	5.600nH	4.0	35	4.0	35	7.9	25	25	2.10	40	145
PSM3-681K	6.800nH	4.0	40	4.0	35	7.9	19	25	2.20	35	140
PSM3-821K	8.200nH	4.0	40	4.0	35	7.9	15	25	2.60	25	130
PSM3-102K	10.000nH	4.0	40	4.0	35	7.9			2.80	25	120

PSML32-010K	0.010 μ H	15	100	2500	0.13	450
PSML32-012K	0.012 μ H	17	100	2300	0.14	450
PSML32-015K	0.015 μ H	19	100	2100	0.16	450
PSML32-018K	0.018 μ H	21	100	1900	0.18	450
PSML32-022K	0.022 μ H	23	100	1700	0.20	450
PSML32-027K	0.027 μ H	23	100	1500	0.22	450
PSML32-033K	0.033 μ H	25	100	1400	0.24	450
PSML32-039K	0.039 μ H	25	100	1300	0.27	450
PSML32-047K	0.047 μ H	26	100	1200	0.30	450
PSML32-056K	0.056 μ H	26	100	1100	0.33	450
PSML32-068K	0.068 μ H	27	100	1000	0.36	450
PSML32-082K	0.082 μ H	27	100	900	0.40	450
PSML32-100K	0.100 μ H	28	100	700	0.44	450
PSML32-120K	0.120 μ H	30	25.2	500	0.22	450
PSML32-150K	0.150 μ H	30	25.2	450	0.25	450
PSML32-180K	0.180 μ H	30	25.2	400	0.28	450
PSML32-220K	0.220 μ H	30	25.2	350	0.32	450
PSML32-270K	0.270 μ H	30	25.2	320	0.36	450
PSML32-330K	0.330 μ H	30	25.2	300	0.40	450
PSML32-390K	0.390 μ H	30	25.2	250	0.45	450
PSML32-470K	0.470 μ H	30	25.2	220	0.50	450
PSML32-560K	0.560 μ H	30	25.2	180	0.55	450
PSML32-680K	0.680 μ H	30	25.2	160	0.60	450
PSML32-820K	0.820 μ H	30	25.2	140	0.67	450
PSML32-101K	1.000 μ H	30	7.96	120	0.70	400
PSML32-121K	1.200 μ H	30	7.96	100	0.75	390
PSML32-151K	1.500 μ H	30	7.96	85	0.85	370
PSML32-181K	1.800 μ H	30	7.96	80	0.90	350
PSML32-221K	2.200 μ H	30	7.96	75	1.00	320
PSML32-271K	2.700 μ H	30	7.96	70	1.10	290
PSML32-331K	3.300 μ H	30	7.96	60	1.20	260
PSML32-391K	3.900 μ H	30	7.96	55	1.30	250
PSML32-471K	4.700 μ H	30	7.96	50	1.50	220
PSML32-561K	5.600 μ H	30	7.96	47	1.60	200
PSML32-681K	6.800 μ H	30	7.96	43	1.80	180
PSML32-821K	8.200 μ H	30	7.96	40	2.00	170
PSML32-102K	10.000 μ H	30	2.52	36	2.10	150
PSML32-122K	12.000 μ H	30	2.52	33	2.50	140
PSML32-152K	15.000 μ H	30	2.52	30	2.80	130
PSML32-182K	18.000 μ H	30	2.52	27	3.30	120
PSML32-222K	22.000 μ H	30	2.52	25	3.70	110
PSML32-272K	27.000 μ H	30	2.52	20	5.00	80
PSML32-332K	33.000 μ H	30	2.52	17	6.00	70
PSML32-392K	39.000 μ H	30	2.52	16	6.40	65
PSML32-472K	47.000 μ H	30	2.52	15	7.00	60
PSML32-562K	56.000 μ H	30	2.52	13	8.00	55
PSML32-682K	68.000 μ H	30	2.52	12	9.00	50
PSML32-822K	82.000 μ H	30	2.52	11	10.00	45
PSML32-103K	100.000 μ H	20	0.796	10	10.00	40