LMax SMD Power Inductor

LMMN Series – Miniature Style M

FEATURES

- The miniature chip inductors is wound on a special ferrite core.
- 0302/ 03A2/ 0403 are high Q value at high frequency and low DC resistance.
- 03A2/ 0403/ 0605 are low DC resistance, high current capacity, and high impedance characteristics. They are excellent for using as a choke coil in DC power supply circuits.

APPLICATIONS

- Pagers, Cordless Phone
- High Frequency Communication Products
- Personal Computers
- Disk Drives And Computer Peripherals
- DC Power Supply Circuits

CHARACTERISTICS

Except 0202/02A2/02B2/0302

- Rated DC Current: The current when the inductance becomes 10% lower than its initial value or the current when the temperature of coil increases A T20°C. The smaller one is defined as Rated DC Current. (Ta=25°C)
- Operating temperature range: -40 ~ 85°C

CHARACTERISTICS FOR LWI0I/LWI02/LWI03/LWI04

- Rated DC Current (Isat): The current when the inductance becomes 30% typical its initial value (Ta=25°C)
- TemperatureRise Current(I rms): The actual currentwhen the temperature of coil becomes A T=40°C (Ta=25°C)
- Operating temperature range: -40 ~ 105°C

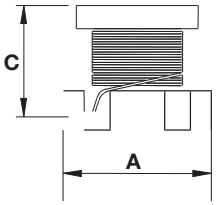
INDUCTANCE AND RATED CURRENT RANGES

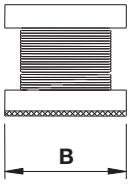
• 0202	0.47 ~ 10µH	2.80 ~ 0.65A
• 02A2	0.47 ~ 10µH	3.70 ~ 0.90A
• 02B2	1.00 ~ 22µH	2.30 ~ 0.51A
• 0302	1.00 ~ 100µH	1.00 ~ 0.1A
• 03A2	1.00 ~ 560µH	0.445 ~ 0.04A
• 0403	1.00 ~ 2200µH	0.50 ~ 0.03A
• 0302 (C)	0.47 ~ 120µH	3.40 ~ 0.17A
• 03A2 (C)	1.00 ~ 560µH	1.00 ~ 0.06A
• 0403 (C)	1.00 ~ 470µH	1.08 ~ 0.09A
• 0605 (C)	0.12 ~ 10000µH	6.00 ~ 0.05A

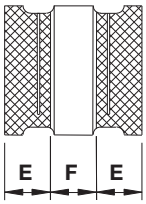
- Electrical specifications at 25°C

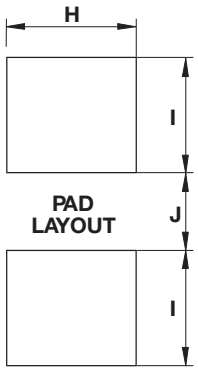
RoHS COMPLIANT

DIMENSIONS









mm (inches)

Type	A	B	C	E	F	H	I	J
0202	2.50 ± 0.20 (0.098 ± 0.008)	2.00 ± 0.20 (0.079 ± 0.008)	1.00 max. (0.039)	0.40 ± 0.20 (0.016 ± 0.008)	1.00 min. (0.039)	2.10 (0.083)	0.90 (0.035)	0.80 (0.031)
02A2	2.50 ± 0.20 (0.098 ± 0.008)	2.00 ± 0.20 (0.079 ± 0.008)	1.25 max. (0.049)	0.40 ± 0.20 (0.016 ± 0.008)	1.00 min. (0.039)	2.10 (0.083)	0.90 (0.035)	0.80 (0.031)
02B2	2.50 ± 0.20 (0.098 ± 0.008)	2.50 ± 0.20 (0.098 ± 0.008)	1.05 max. (0.041)	0.85 ref (0.033)	0.85 ref (0.033)	2.50 (0.098)	1.20 (0.047)	0.80 (0.031)
0302 / 0302 (C)	3.20 ± 0.30 (0.126 ± 0.012)	2.50 ± 0.20 (0.098 ± 0.008)	1.55 ± 0.30 (0.061 ± 0.012)	1.05 ± 0.30 (0.041 ± 0.012)	1.05 ± 0.30 (0.041 ± 0.012)	2.00 (0.079)	1.50 (0.059)	1.00 (0.039)
03A2 / 03A2 (C)	3.20 ± 0.30 (0.126 ± 0.012)	2.50 ± 0.20 (0.098 ± 0.008)	2.00 ± 0.30 (0.079 ± 0.012)	1.05 ± 0.30 (0.041 ± 0.012)	1.05 ± 0.30 (0.041 ± 0.012)	2.00 (0.079)	1.50 (0.059)	1.00 (0.039)
0403 / 0403 (C)	4.50 ± 0.30 (0.177 ± 0.012)	3.20 ± 0.20 (0.126 ± 0.008)	2.60 ± 0.30 (0.102 ± 0.012)	1.00 min. (0.039)	1.00 min. (0.039)	3.00 (0.118)	2.00 (0.079)	1.20 (0.047)
0605 (C)	5.70 ± 0.30 (0.224 ± 0.012)	5.00 ± 0.30 (0.197 ± 0.012)	4.70 ± 0.50 (0.185 ± 0.020)	1.30 min. (0.051)	1.70 min. (0.067)	5.00 (0.197)	2.00 (0.079)	2.00 (0.079)

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HOW TO ORDER

LM	MN	0202	N	R04	M	T	A	R
Family	**Series**	**Size**	**Tolerance**	**Inductance**	**Style**	**Termination**	**Special**	**Packaging**
LM = Power Inductor	XN = Non-shielded	0202 = 2x2xh (h = see catalog)	J = ±5% K = ±10% M = ±20% N = ±30%	R04 = 0.039µH R39 = 0.390µH 3R9 = 3.900µH 390 = 39.00µH 391 = 390.0µH 392 = 3900µH		T = Sn Plate	A = Standard C = Choke	R = 7" Reel

ELECTRICAL CHARACTERISTICS

0202

Codes	L (µH)	Tolerance	Test Condition	DCR (Ω) max.	I rms (A) Typical	I sat (A) Typical
R47	0.47	M	1MHz, 0.1V	0.048	2.30	2.80
1R0	1.00	M	1MHz, 0.1V	0.085	1.70	2.00
1R5	1.50	M	1MHz, 0.1V	0.128	1.40	1.70
2R2	2.20	M	1MHz, 0.1V	0.19	1.10	1.40
3R3	3.30	M	1MHz, 0.1V	0.304	0.94	1.20
4R7	4.70	M	1MHz, 0.1V	0.44	0.78	0.98
6R8	6.80	M	1MHz, 0.1V	0.541	0.70	0.82
100	10.0	M	1MHz, 0.1V	0.854	0.52	0.65

02A2

Codes	L (µH)	Tolerance	Test Condition	DCR (Ω) max.	I rms (A) Typical	I sat (A) Typical
R47	0.47	M	1MHz, 0.1V	0.056	2.20	3.70
1R0	1.00	M	1MHz, 0.1V	0.088	1.80	2.70
1R5	1.50	M	1MHz, 0.1V	0.126	1.50	2.20
2R2	2.20	M	1MHz, 0.1V	0.155	1.30	2.00
3R3	3.30	M	1MHz, 0.1V	0.272	1.00	1.60
4R7	4.70	M	1MHz, 0.1V	0.45	0.81	1.20
5R6	5.60	M	1MHz, 0.1V	0.45	0.72	1.15
6R8	6.80	M	1MHz, 0.1V	0.612	0.66	1.10
100	10.0	M	1MHz, 0.1V	0.756	0.59	0.90

02B2

Codes	L (µH)	Tolerance	Test Condition	DCR (Ω) max.	I rms (A) Typical	I sat (A) Typical
1R0	1.00	M	1MHz, 0.1V	0.085	1.90	2.30
1R5	1.50	M	1MHz, 0.1V	0.115	1.50	1.90
2R2	2.20	M	1MHz, 0.1V	0.168	1.20	1.50
3R3	3.30	M	1MHz, 0.1V	0.239	1.10	1.30
4R7	4.70	M	1MHz, 0.1V	0.316	0.90	1.10
5R6	5.60	M	1MHz, 0.1V	0.42	0.83	0.98
6R8	6.80	M	1MHz, 0.1V	0.487	0.80	0.90
8R2	8.20	M	1MHz, 0.1V	0.548	0.71	0.84
100	10.0	M	1MHz, 0.1V	0.61	0.68	0.79
220	22.0	M	1MHz, 0.1V	1.552	0.40	0.51

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LMMN Series – Miniature Style M

0302

Codes	L (µH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.	SRF (MHz) min.
1R0	1.00	N	1MHz, 0.1V	0.078	1.00	100
1R5	1.50	N	1MHz, 0.1V	0.068	1.20	100
2R2	2.20	M	1MHz, 0.1V	0.126	0.79	64.0
3R3	3.30	M	1MHz, 0.1V	0.18	0.70	50.0
4R7	4.70	M	1MHz, 0.1V	0.195	0.65	43.0
100	10.0	K	1MHz, 0.1V	0.42	0.45	26.0
150	15.0	K	1MHz, 0.1V	0.75	0.30	22.0
220	22.0	K	1MHz, 0.1V	1.00	0.25	19.0
330	33.0	K	1MHz, 0.1V	1.40	0.20	17.0
470	47.0	K	1MHz, 0.1V	2.20	0.17	13.0
680	68.0	K	1MHz, 0.1V	3.20	0.13	9.00
101	100	K	1MHz, 0.1V	4.50	0.10	8.00

03A2

Codes	L (µH)	Tolerance	Test Condition	Quality Factor		DCR (Ω) max.	IDC (A) max.	SRF (MHz) min.
				Spec. min.	Test Condition			
1R0	1.00	M	1MHz, 0.1V	20	1MHz, 0.1V	0.50	0.445	100
1R2	1.20	M	1MHz, 0.1V	20	1MHz, 0.1V	0.60	0.425	100
1R5	1.50	K, M	1MHz, 0.1V	20	1MHz, 0.1V	0.60	0.40	75.0
1R8	1.80	K, M	1MHz, 0.1V	20	1MHz, 0.1V	0.70	0.39	60.0
2R2	2.20	K, M	1MHz, 0.1V	20	1MHz, 0.1V	0.80	0.37	50.0
2R7	2.70	K, M	1MHz, 0.1V	20	1MHz, 0.1V	0.90	0.32	43.0
3R3	3.30	K, M	1MHz, 0.1V	20	1MHz, 0.1V	1.00	0.30	38.0
3R9	3.90	K, M	1MHz, 0.1V	20	1MHz, 0.1V	1.10	0.29	35.0
4R7	4.70	K, M	1MHz, 0.1V	20	1MHz, 0.1V	1.20	0.27	31.0
5R6	5.60	K, M	1MHz, 0.1V	20	1MHz, 0.1V	1.30	0.25	28.0
6R8	6.80	K, M	1MHz, 0.1V	20	1MHz, 0.1V	1.50	0.24	25.0
8R2	8.20	K, M	1MHz, 0.1V	20	1MHz, 0.1V	1.60	0.225	23.0
100	10.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	1.80	0.19	20.0
120	12.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	2.00	0.18	18.0
150	15.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	2.20	0.17	16.0
180	18.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	2.50	0.165	15.0
220	22.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	2.80	0.15	14.0
270	27.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	3.10	0.125	13.0
330	33.0	J, K	1MHz, 0.1V	40	1MHz, 0.1V	3.50	0.115	12.0
390	39.0	J, K	1MHz, 0.1V	40	1MHz, 0.1V	3.90	0.11	11.0
470	47.0	J, K	1MHz, 0.1V	40	1MHz, 0.1V	4.30	0.10	11.0
560	56.0	J, K	1MHz, 0.1V	40	1MHz, 0.1V	4.90	0.085	10.0
680	68.0	J, K	1MHz, 0.1V	40	1MHz, 0.1V	5.50	0.08	9.00
820	82.0	J, K	1MHz, 0.1V	40	1MHz, 0.1V	6.20	0.07	8.50
101	100	J, K	1MHz, 0.1V	40	796KHz, 0.1V	7.00	0.08	8.00
121	120	J, K	1MHz, 0.1V	40	796KHz, 0.1V	8.00	0.075	7.50
151	150	J, K	1MHz, 0.1V	40	796KHz, 0.1V	9.30	0.07	7.00
181	180	J, K	1MHz, 0.1V	40	796KHz, 0.1V	10.20	0.065	6.00
221	220	J, K	1MHz, 0.1V	40	796KHz, 0.1V	11.80	0.065	5.50
271	270	J, K	1MHz, 0.1V	40	796KHz, 0.1V	12.50	0.065	5.00
331	330	J, K	1MHz, 0.1V	40	796KHz, 0.1V	15.00	0.065	5.00
391	390	J, K	1MHz, 0.1V	50	796KHz, 0.1V	22.00	0.05	5.00
471	470	J, K	1KHz, 0.1V	50	796KHz, 0.1V	25.00	0.045	5.00
561	560	J, K	1KHz, 0.1V	50	796KHz, 0.1V	28.00	0.04	5.00 ref

LMax SMD Power Inductor

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0403

Codes	L (µH)	Tolerance	Test Condition	Quality Factor		DCR (Ω) max.	IDC (A) max.	SRF (MHz) min.
				Spec. min.	Test Condition			
1R0	1.00	M	1MHz, 0.1V	20	1MHz, 0.1V	0.20	0.50	120
1R2	1.20	M	1MHz, 0.1V	20	1MHz, 0.1V	0.20	0.50	100
1R5	1.50	M	1MHz, 0.1V	20	1MHz, 0.1V	0.30	0.50	85.0
1R8	1.80	M	1MHz, 0.1V	20	1MHz, 0.1V	0.30	0.50	75.0
2R2	2.20	M	1MHz, 0.1V	20	1MHz, 0.1V	0.30	0.50	62.0
2R7	2.70	M	1MHz, 0.1V	20	1MHz, 0.1V	0.32	0.50	53.0
3R3	3.30	M	1MHz, 0.1V	20	1MHz, 0.1V	0.35	0.50	47.0
3R9	3.90	M	1MHz, 0.1V	20	1MHz, 0.1V	0.38	0.50	41.0
4R7	4.70	K, M	1MHz, 0.1V	30	1MHz, 0.1V	0.40	0.50	38.0
5R6	5.60	K, M	1MHz, 0.1V	30	1MHz, 0.1V	0.47	0.50	33.0
6R8	6.80	K, M	1MHz, 0.1V	30	1MHz, 0.1V	0.50	0.45	31.0
8R2	8.20	K, M	1MHz, 0.1V	30	1MHz, 0.1V	0.56	0.45	27.0
100	10.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	0.56	0.40	23.0
120	12.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	0.62	0.38	21.0
150	15.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	0.73	0.36	19.0
180	18.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	0.82	0.34	17.0
220	22.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	0.94	0.32	15.0
270	27.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	1.10	0.30	14.0
330	33.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	1.20	0.27	12.0
390	39.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	1.40	0.24	11.0
470	47.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	1.50	0.22	10.0
560	56.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	1.70	0.20	9.30
680	68.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	1.90	0.18	8.40
820	82.0	J, K	1MHz, 0.1V	35	1MHz, 0.1V	2.20	0.17	7.50
101	100	J, K	1MHz, 0.1V	40	796KHz, 0.1V	2.50	0.16	6.80
121	120	J, K	1MHz, 0.1V	40	796KHz, 0.1V	3.00	0.15	6.20
151	150	J, K	1MHz, 0.1V	40	796KHz, 0.1V	3.70	0.13	5.50
181	180	J, K	1MHz, 0.1V	40	796KHz, 0.1V	4.50	0.12	5.00
221	220	J, K	1MHz, 0.1V	40	796KHz, 0.1V	5.40	0.11	4.50
271	270	J, K	1MHz, 0.1V	40	796KHz, 0.1V	6.80	0.10	4.00
331	330	J, K	1MHz, 0.1V	40	796KHz, 0.1V	8.20	0.095	3.60
391	390	J, K	1MHz, 0.1V	40	796KHz, 0.1V	9.70	0.09	3.30
471	470	J, K	1KHz, 0.1V	40	796KHz, 0.1V	11.80	0.08	3.00
561	560	J, K	1KHz, 0.1V	40	796KHz, 0.1V	14.50	0.07	2.70
681	680	J, K	1KHz, 0.1V	40	796KHz, 0.1V	17.00	0.065	2.50
821	820	J, K	1KHz, 0.1V	40	796KHz, 0.1V	20.50	0.06	2.20
102	1000	J, K	1KHz, 0.1V	40	252KHz, 0.1V	25.00	0.05	2.00
122	1200	J, K	1KHz, 0.1V	40	252KHz, 0.1V	30.00	0.045	1.80
152	1500	J, K	1KHz, 0.1V	40	252KHz, 0.1V	37.00	0.04	1.60
182	1800	J, K	1KHz, 0.1V	40	252KHz, 0.1V	45.00	0.035	1.50
222	2200	J, K	1KHz, 0.1V	40	252KHz, 0.1V	50.00	0.03	1.30

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0302 (C)

Codes	L (µH)	Tolerance	Test Condition	DCR (Ω) ±20%	I sat (A) max.	I rms (A) max.	SRF (MHz) min.
R47	0.47	N	1MHz, 0.1V	0.03	3.40	2.55	100
1R0	1.00	N	1MHz, 0.1V	0.045	2.30	2.05	100
1R5	1.50	N	1MHz, 0.1V	0.057	1.75	1.75	70.0
2R2	2.20	N	1MHz, 0.1V	0.076	1.55	1.60	70.0
3R3	3.30	N	1MHz, 0.1V	0.12	1.25	1.20	50.0
4R7	4.70	N	1MHz, 0.1V	0.18	1.00	1.00	40.0
6R8	6.80	N	1MHz, 0.1V	0.24	0.85	0.85	40.0
100	10.0	M	1MHz, 0.1V	0.38	0.75	0.70	30.0
150	15.0	M	1MHz, 0.1V	0.57	0.60	0.52	20.0
220	22.0	M	1MHz, 0.1V	0.81	0.50	0.45	20.0
330	33.0	M	1MHz, 0.1V	1.15	0.38	0.39	13.0
470	47.0	M	1MHz, 0.1V	1.78	0.33	0.31	11.0
680	68.0	M	1MHz, 0.1V	2.28	0.28	0.275	11.0
101	100	M	1MHz, 0.1V	2.70	0.18	0.25	8.00
121	120	M	1MHz, 0.1V	4.38	0.17	0.20	8.00

03A2 (C)

Codes	L (µH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.	SRF (MHz) min.
1R0	1.00	M	1MHz, 0.1V	0.078	1.00	100
2R2	2.20	M	1MHz, 0.1V	0.126	0.79	64.0
3R3	3.30	M	1MHz, 0.1V	0.165	0.50	50.0
4R7	4.70	M	1MHz, 0.1V	0.195	0.45	43.0
6R8	6.80	M	1MHz, 0.1V	0.33	0.45	38.0
100	10.0	M	1MHz, 0.1V	0.572	0.30	26.0
220	22.0	K, M	1MHz, 0.1V	0.923	0.25	19.0
470	47.0	K, M	1MHz, 0.1V	1.69	0.17	12.0
101	100	J, K	1MHz, 0.1V	4.55	0.10	8.00
151	150	J, K	1MHz, 0.1V	9.10	0.08	7.00
221	220	J, K	1MHz, 0.1V	10.92	0.07	5.50
331	330	J, K	1MHz, 0.1V	13.0	0.06	4.50
391	390	J, K	1MHz, 0.1V	22.1	0.06	4.00
471	470	J, K	1MHz, 0.1V	24.7	0.06	3.70
561	560	J, K	1MHz, 0.1V	28.6	0.06	3.40

0403 (C)

Codes	L (µH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.	SRF (MHz) min.
1R0	1.00	M	1MHz, 0.1V	0.08	1.08	100
1R5	1.50	M	1MHz, 0.1V	0.09	1.00	85.0
2R2	2.20	M	1MHz, 0.1V	0.11	0.90	60.0
3R3	3.30	M	1MHz, 0.1V	0.13	0.80	47.0
4R7	4.70	K, M	1MHz, 0.1V	0.15	0.75	35.0
6R8	6.80	K, M	1MHz, 0.1V	0.20	0.72	30.0
100	10.0	J, K	1MHz, 0.1V	0.24	0.65	23.0
150	15.0	J, K	1MHz, 0.1V	0.32	0.57	20.0
220	22.0	J, K	1MHz, 0.1V	0.60	0.42	15.0
330	33.0	J, K	1MHz, 0.1V	1.00	0.31	12.0
470	47.0	J, K	1MHz, 0.1V	1.10	0.28	10.0
680	68.0	J, K	1MHz, 0.1V	1.70	0.22	8.40
101	100	J, K	1MHz, 0.1V	2.20	0.19	6.80
151	150	J, K	1MHz, 0.1V	3.50	0.13	5.50
221	220	J, K	1MHz, 0.1V	4.00	0.11	4.50
331	330	J, K	1MHz, 0.1V	6.80	0.10	3.60
471	470	J, K	1KHz, 0.1V	8.50	0.09	3.00

LMax SMD Power Inductor

LMMN Series – Miniature Style M

0605 (C)

Codes	L (µH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.	SRF (MHz) min.
R12	0.12	M	1MHz, 0.1V	0.0098	6.00	450
R27	0.27	M	1MHz, 0.1V	0.014	5.30	300
R47	0.47	M	1MHz, 0.1V	0.0182	4.80	200
1R0	1.00	M	1MHz, 0.1V	0.027	4.00	150
1R5	1.50	M	1MHz, 0.1V	0.031	3.70	110
2R2	2.20	M	1MHz, 0.1V	0.041	3.20	80.0
3R3	3.30	M	1MHz, 0.1V	0.050	2.90	40.0
4R7	4.70	M	1MHz, 0.1V	0.0574	2.70	30.0
6R8	6.80	M	1MHz, 0.1V	0.104	2.00	25.0
100	10.0	K, M	1MHz, 0.1V	0.130	1.70	20.0
150	15.0	K, M	1MHz, 0.1V	0.21	1.40	17.0
220	22.0	K, M	1MHz, 0.1V	0.266	1.20	15.0
330	33.0	K, M	1MHz, 0.1V	0.448	0.90	12.0
470	47.0	K, M	1MHz, 0.1V	0.56	0.80	10.0 ref
680	68.0	K, M	1MHz, 0.1V	0.938	0.64	7.60
101	100	K, M	100KHz, 0.1V	1.204	0.56	6.50
151	150	K, M	100KHz, 0.1V	2.66	0.42	5.00
221	220	K, M	100KHz, 0.1V	3.36	0.32	4.00
331	330	K, M	100KHz, 0.1V	6.16	0.27	3.10
471	470	K, M	100KHz, 0.1V	7.56	0.24	2.40
681	680	K, M	100KHz, 0.1V	11.34	0.19	1.90
102	1000	K, M	10KHz, 0.1V	14.42	0.15	1.70
222	2200	K, M	10KHz, 0.1V	30.1	0.10	1.20
472	4700	K, M	10KHz, 0.1V	61.04	0.07	0.80
103	10000	K, M	10KHz, 0.1V	140.	0.05	0.50