

Catalogue For Metal Alloy Inductor



■ Features

- A coil embedded inductor with magnetic metal alloy powder. Shielded construction.
- Superior DC current characteristics, suitable for large current application.
- Low loss realized with low DC resistance.
- Ultra low buzz noise.
- Lead free and RoHS coHMPLiant.

■ Application

- Ideal for DC/DC converters in personal computer, notebook PC, VTR and Set top box etc..
- High current POL converters.
- DC/DC converters in other portable game devices, Communication equipment and Office automation electronic equipment.

■ Part Numbering

HMPL(F)
 1040 - R22
 M
 T

1 product Type code		Coil Code	
HMPL		A、B、F	
Power Inductor			
2 Product Dimensions (LxW) (mm)		Product height (H) (mm)	
12	12x12	40	4.0
10	10x10	30	3.0
06	6.7x6.7	20	2.0
05	5.0x5.0		
04	4.0x4.0		

3Nominal Inductance	
Example	Nominal Value
R10	0.1 μH
1R0	1.0 μH
100	10 μH
101	100 μH
102	1000μH (1mH)
103	10000μH(10 mH)

4 Inductance Tolerance	
J	±5%
K	±10%
L	±15%
M	±20%
N	±30%

5Package	
T	Tape & Reel



■ List of Metal Alloy Inductors

series	Dimension W x L x T (mm)	Inductance Range (μH)	DCR Range ($\text{m}\Omega$)	Saturation Current I_{sat} (A)	Heat Rating Current I_{rms} (A)
HMPLF0420	4.0x 4.3 x 2.0	0.47 ~4.7	14.0 ~105.0	2.4 ~9.0	2.0 ~7.0
HMPLF0520	5.0x 5.5 x 2.0	0.47 ~2.2	8.0 ~38.0	4.5 ~11.5	4.0 ~10.5
HMPLF0530	5.0x 5.5 x 3.0	1.0 ~4.7	10.0 ~55.0	3.5 ~7.5	3.2 ~7.2
HMPLF0540	5.0x 5.5 x 4.0	4.7 ~10.0	42.0 ~88.5	2.8 ~4.5	2.4 ~3.8
HMPLF0620	6.7x 7.3 x 2.0	1.0 ~6.8	18.0 ~120.0	3.2 ~9.0	2.5~7.0
HMPLF0624	6.7x 7.3 x2.2	2.2 ~10.0	24.0~95.0	2.8 ~6.5	2.7 ~5.7
HMPLF0630	6.7x 7.3 x 3.0	0.2 ~22.0	1.9~180.0	2.5 ~24.0	2.3 ~20.0
HMPLF0640	6.7x 7.3 x 4.0	2.2 ~15.0	11.5 ~92.0	3.5 ~9.5	3.1 ~8.5
HMPLB1040	10.0x11.0 x 4.0	0.33~1.5	0.8 ~4.00	18.0 ~38.0	15.0 ~34.0
HMPLF1040	10.0x11.0 x 4.0	2.2 ~47.0	5.8 ~155.0	3.0 ~13.5	2.5 ~12.0
HMPLB/F1250	12.6x14.0 x 5.2	0.36 ~ 3.3	0.8 ~ 7.5	15.0 ~38.0	13.0 ~32.0
HMPLB/F1260	12.6x13.7 x 6.0	0.44 ~150.0	0.8 ~340.0	2.3 ~40.0	2.0 ~38.0

Notes

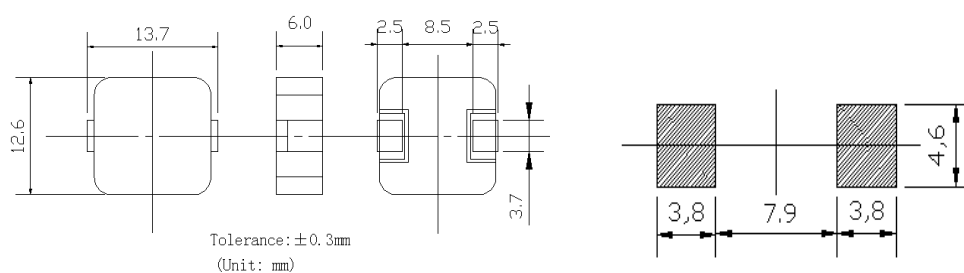
- Inductance is measured with a Q meter、LCR meter or an impedance analyzer. Test frequency:L:100KHz/1.0V;
- DC resistance is measured with a digital DCR analyzer;
- Saturation current (I_{sat}) that will cause L_0 to approximately drop 20%.
- Heat rating current (I_{rms}) that will cause a temperature rise ΔT of 40°C approximately.
- Withstand voltage: 30 V DC.
- Operating temperature range - 55 °C to + 125 °C.
- Please contact us before using our products for other conditions.

■ Electrical Characteristics

HMPLB/F 1260 Series

Figure and Dimensions

Recommended Land Pattern

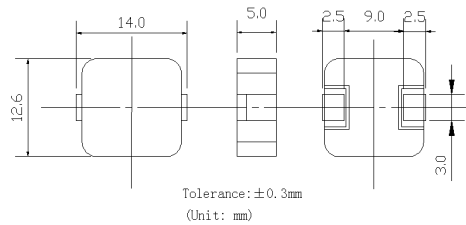


Electrical Characteristics

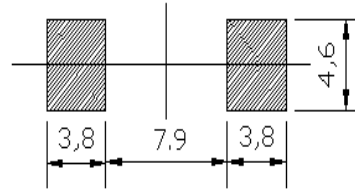
Part number	Inductance (μH) @0A	Tolerance	resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLB1260-R44	0.47	$\pm 20\%$	0.8	40.0	38.0
HMPLB1260-1R0	1.00	$\pm 20\%$	1.9	25.0	24.0
HMPLB1260-1R5	1.50	$\pm 20\%$	2.5	21.0	18.0
HMPLB1260-2R2	2.20	$\pm 20\%$	4.2	18.0	15.0
HMPLF1260-3R3	3.30	$\pm 20\%$	7.0	15.0	13.5
HMPLF1260-4R7	4.70	$\pm 20\%$	8.8	14.0	12.0
HMPLF1260-5R6	5.60	$\pm 20\%$	10.0	12.0	10.0
HMPLF1260-6R8	6.80	$\pm 20\%$	12.0	11.0	9.0
HMPLF1260-8R0	8.00	$\pm 20\%$	14.0	9.5	8.0
HMPLF1260-100	10.0	$\pm 20\%$	17.5	8.0	7.5
HMPLF1260-120	12.0	$\pm 20\%$	23.0	8.0	6.0
HMPLF1260-150	15.0	$\pm 20\%$	30.0	7.5	6.0
HMPLF1260-220	18.0	$\pm 20\%$	38.0	6.0	5.0
HMPLF1260-330	33.0	$\pm 20\%$	53.0	5.0	4.0
HMPLF1260-470	47.0	$\pm 20\%$	82.0	4.3	3.5
HMPLF1260-680	68.0	$\pm 20\%$	120.0	3.5	3.0
HMPLF1260-101	100.0	$\pm 20\%$	185.0	3.0	2.5
HMPLF1260-121	120.0	$\pm 20\%$	220.0	2.5	2.0
HMPLF1260-151	150.0	$\pm 20\%$	340.0	2.3	2.0

HMPLB/F 1250 Series

Figure and Dimensions



Recommended Land Pattern

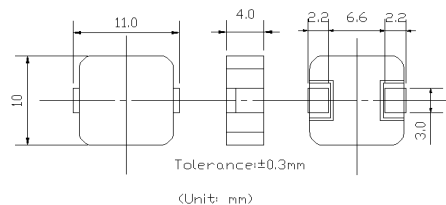


Electrical Characteristics

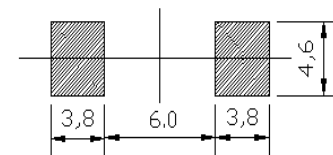
Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLB1250-R36	0.36	$\pm 20\%$	0.80	38.0	32.0
HMPLB1250-R47	0.47	$\pm 20\%$	1.10	35.0	27.0
HMPLB1250-R68	0.68	$\pm 20\%$	1.55	30.0	25.0
HMPLB1250-R82	0.82	$\pm 20\%$	1.80	29.0	23.5
HMPLF1250-3R3	3.30	$\pm 20\%$	7.50	15.0	13.0

HMPLB 1040 Series

Figure and Dimensions



Recommended Land Pattern

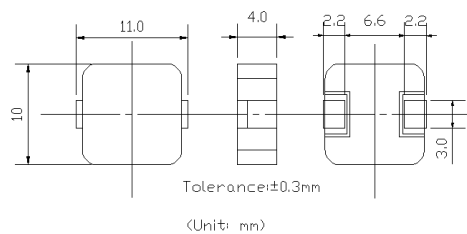


Electrical Characteristics

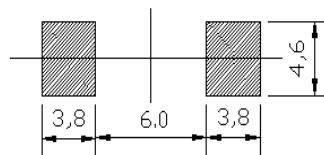
Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLB1040-R22	0.22	$\pm 20\%$	0.90	45	35
HMPLB1040-R33	0.33	$\pm 20\%$	1.0	38	30
HMPLB1040-R36	0.36	$\pm 20\%$	1.10	35	28
HMPLB1040-R47	0.47	$\pm 20\%$	1.20	28	24
HMPLB1040-R56	0.56	$\pm 20\%$	1.70	27	23
HMPLB1040-R68	0.68	$\pm 20\%$	1.80	25	22
HMPLB1040-1R0	1.00	$\pm 20\%$	3.00	23	20
HMPLB1040-1R5	1.50	$\pm 20\%$	4.00	18	15

HMPLF 1040 Series

Figure and Dimensions



Recommended Land Pattern

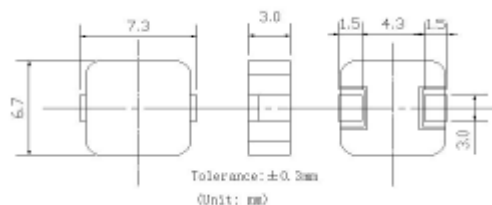


Electrical Characteristics

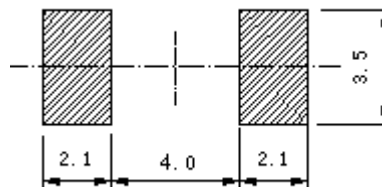
Part number	Inductance (μ H) @0A	Tolerance	Resistance (m Ω) \pm 7%	Saturation current (A)	Heat rating current (A)
HMPLF1040-2R2	2.20	\pm 20%	5.8	13.5	12.0
HMPLF1040-3R3	3.30	\pm 20%	11.0	12.0	10.0
HMPLF1040-4R7	4.70	\pm 20%	14.0	10.5	9.0
HMPLF1040-6R8	6.80	\pm 20%	20.7	8.5	7.2
HMPLF1040-8R2	8.20	\pm 20%	25.0	6.5	6.0
HMPLF1040-100	10.0	\pm 20%	30.0	6.0	5.3
HMPLF1040-150	15.0	\pm 20%	45.0	5.4	4.5
HMPLF1040-220	22.0	\pm 20%	60.0	4.5	4.0
HMPLF1040-330	33.0	\pm 20%	95.0	4.0	3.5
HMPLF1040-470	47.0	\pm 20%	155.0	3.0	2.5

HMPLF 0630 Series

Figure and Dimensions



Recommended Land Pattern

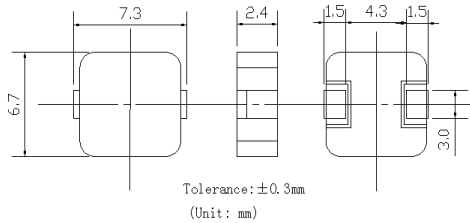


Electrical Characteristics

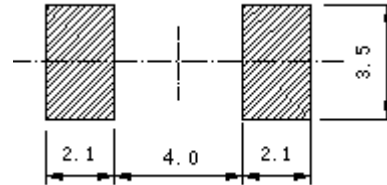
Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLF0630-R20	0.20	$\pm 20\%$	1.9	24.0	20.0
HMPLF0630-R33	0.33	$\pm 20\%$	3.0	20.0	18.0
HMPLF0630-R47	0.47	$\pm 20\%$	4.0	18.0	16.0
HMPLF0630-R56	0.56	$\pm 20\%$	4.1	16.5	15.5
HMPLF0630-R68	0.68	$\pm 20\%$	5.0	15.5	12.0
HMPLF0630-1R0	1.00	$\pm 20\%$	7.0	12.5	11.5
HMPLF0630-1R5	1.50	$\pm 20\%$	11.5	10.9	9.2
HMPLF0630-2R2	2.20	$\pm 20\%$	15.0	8.2	8.0
HMPLF0630-3R3	3.30	$\pm 20\%$	25.5	7.6	6.1
HMPLF0630-4R7	4.70	$\pm 20\%$	36.0	6.3	5.0
HMPLF0630-6R8	6.80	$\pm 20\%$	53.0	4.9	4.3
HMPLF0630-8R2	8.20	$\pm 20\%$	59.5	3.8	3.6
HMPLF0630-100	10.0	$\pm 20\%$	69.5	3.6	3.6
HMPLF0630-150	15.0	$\pm 20\%$	115.0	2.9	2.7
HMPLF0630-220	22.0	$\pm 20\%$	175.0	2.5	2.3

HMPLF 0624 Series

Figure and Dimensions



Recommended Land Pattern

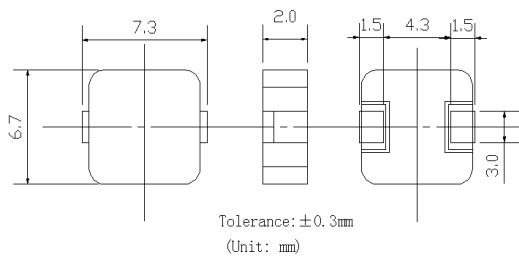


Electrical Characteristic

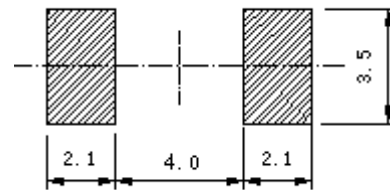
Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLF0624-2R2	2.20	$\pm 20\%$	24	6.5	5.7
HMPLF0624-3R3	3.30	$\pm 20\%$	36	5.0	4.3
HMPLF0624-4R7	4.70	$\pm 20\%$	60	4.3	3.5
HMPLF0624-6R8	6.80	$\pm 20\%$	79	3.5	3.1
HMPLF0624-100	10.0	$\pm 20\%$	95	2.8	2.7

HMPLF 0620 Series

Figure and Dimensions



Recommended Land Pattern

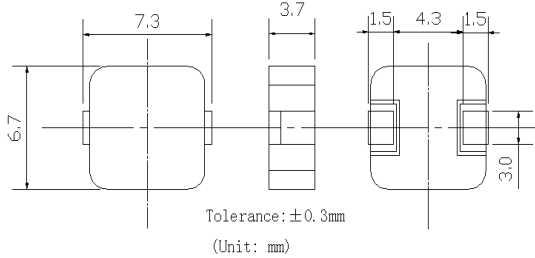


Electrical Characteristics

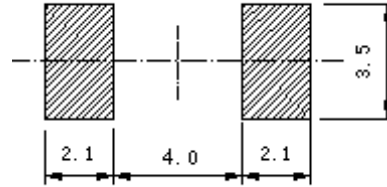
Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLF0620-1R0	1.00	$\pm 20\%$	18	9.0	7.0
HMPLF0620-1R5	1.50	$\pm 20\%$	26	6.5	5.5
HMPLF0620-2R2	2.20	$\pm 20\%$	37	5.5	4.5
HMPLF0620-3R3	3.30	$\pm 20\%$	50	4.3	3.5
HMPLF0620-4R7	4.70	$\pm 20\%$	70	4.0	3.0
HMPLF0620-6R8	6.80	$\pm 20\%$	115	2.8	2.3

HMPLF 0640 Series

Figure and Dimensions



Recommended Land Pattern

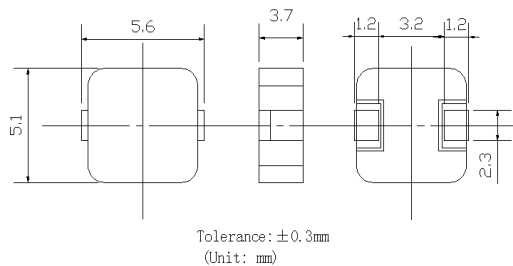


Electrical Characteristics

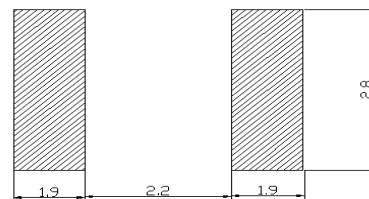
Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLF0640-1R5	1.50	$\pm 20\%$	7.7	11.0	10.0
HMPLF0640-2R2	2.20	$\pm 20\%$	11.5	9.5	8.5
HMPLF0640-3R3	3.30	$\pm 20\%$	19.0	9.0	8.0
HMPLF0640-4R7	4.70	$\pm 20\%$	32.0	7.0	6.0
HMPLF0640-100	10.0	$\pm 20\%$	62.0	4.0	4.0
HMPLF0640-150	15.0	$\pm 20\%$	92.0	3.5	3.1

HMPLF 0540 Series

Figure and Dimensions



Recommended Land Pattern

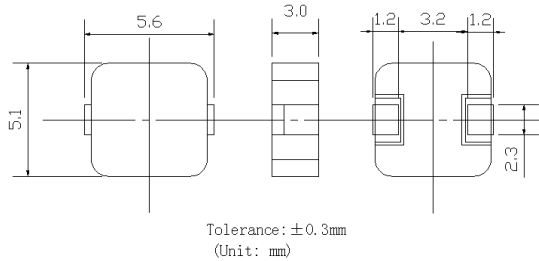


Electrical Characteristics

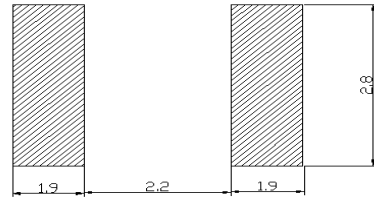
Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLF0540-4R7	4.70	$\pm 20\%$	42.0	4.5	3.8
HMPLF0540-6R8	6.80	$\pm 20\%$	62.0	3.6	3.3
HMPLF0540-100	10.0	$\pm 20\%$	88.5	2.8	2.4

HMPLF 0530 Series

Figure and Dimensions



Recommended Land Pattern

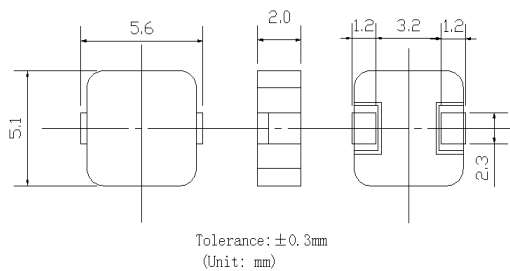


Electrical Characteristics

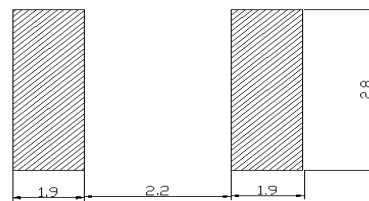
Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLF0530-1R0	1.00	$\pm 20\%$	10.0	7.5	7.0
HMPLF0530-1R5	1.50	$\pm 20\%$	16.5	6.5	6.0
HMPLF0530-2R2	2.20	$\pm 20\%$	24.0	6.0	5.5
HMPLF0530-3R3	3.30	$\pm 20\%$	34.0	4.8	4.5
HMPLF0530-4R7	4.70	$\pm 20\%$	55.0	3.5	3.2

HMPLF 0520 Series

Figure and Dimensions



Recommended Land Pattern

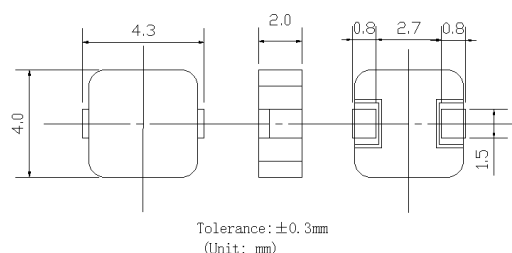


Electrical Characteristics

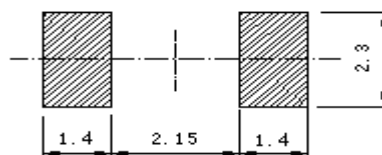
Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLF0520-R47	0.47	$\pm 20\%$	8.0	11.5	10.5
HMPLF0520-R56	0.56	$\pm 20\%$	12.5	9.5	8.0
HMPLF0520-R68	0.68	$\pm 20\%$	13.5	9.0	7.0
HMPLF0520-1R0	1.00	$\pm 20\%$	15.0	7.0	6.0
HMPLF0520-1R5	1.50	$\pm 20\%$	22.0	6.0	5.0
HMPLF0520-2R2	2.20	$\pm 20\%$	38.0	4.5	4.0

HMPLF 0420 Series

Figure and Dimensions



Recommended Land Pattern

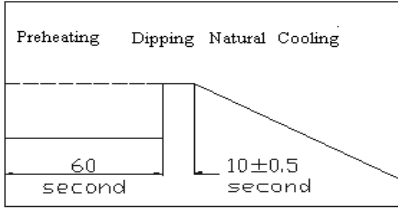


Electrical Characteristics

Part number	Inductance (μH) @0A	Tolerance	Resistance ($\text{m}\Omega$) $\pm 7\%$	Saturation current (A)	Heat rating current (A)
HMPLF0420-R47	0.47	$\pm 20\%$	14	9.0	7.0
HMPLF0420-1R0	1.00	$\pm 20\%$	24	5.5	4.5
HMPLF0420-1R5	1.50	$\pm 20\%$	45	4.5	3.7
HMPLF0420-2R2	2.20	$\pm 20\%$	60	3.5	3.0
HMPLF0420-3R3	3.30	$\pm 20\%$	75	2.6	2.5
HMPLF0420-4R7	4.70	$\pm 20\%$	105	2.4	2.0

■ Reliability and test condition

NO.	Item	Performance	Test condition
1	Humidity Resistance	Appearance: no damage Inductance: within $\pm 10\%$ of initial value	Humidity: 90-95%RH. Temperature: $40 \pm 5^\circ\text{C}$ Duration: $500 \pm 12\text{h}$. Measured at room temperature after placing for 2 to 3h.
2	Random Vibration Test	Appearance: cracking, shipping and any other defects harmful to the characteristics should not be allowed. Impedance: within $\pm 10\%$.	Frequency: 10-55Hz for 1 min AHMPLitude: 1.5mm. Directions and times: X,Y,Z directions for 2h. A period of 2h in each of 3 mutually perpendicular directions (Total 6h)
3	High Temperature Life Test	Appearance: no damage Inductance: within $\pm 10\%$ of initial value	Temperature: $+85^\circ\text{C} \pm 2^\circ\text{C}$ Duration: $500 \pm 12\text{h}$. Measured at room temperature after placing for 2 to 3h
	Low	Appearance: no damage	Temperature: $-40 \pm 2^\circ\text{C}$ Duration: $500 \pm 12\text{h}$.

4	Temperature Life Test	Inductance: within $\pm 10\%$ of initial value	Measured at room temperature after placing for 2 to 3h
5	Thermal Shock	Appearance: no damage Inductance: within $\pm 10\%$ of initial value	Condition for 1 cycle Step 1: $-40 \pm 3^\circ\text{C}$ $30 \pm 3\text{min}$. Step 2: Room temperature within 3min. Step 3: $+85 \pm 3^\circ\text{C}$ $30 \pm 3\text{min}$. Step 4: Room temperature within 3min. Number of cycles: 100 Measured at room temperature after placing for 2 to 3h
6	Solder Heat Resistance	Appearance: no significant abnormality. Inductance change: within $\pm 10\%$. 	Preheat: 150°C , 60sec. Solder: Sn-Cu0.5% Solder temperature: $260 \pm 5^\circ\text{C}$ Flux: resin Dip time: $10 \pm 0.5\text{sec}$.
7	Solderability Test	More than 95% of the terminal electrode Should be covered with solder.	Dip pads in flux then dip in solder pot at $(245 + 5)^\circ\text{C}$ for 5 sec. Flux: rosin flux
8	PCB Bend Strength	Appearance: no damage Inductance: within $\pm 10\%$ of initial value	PCB thickness: 1.6mm Bend: 2mm, 5sec.