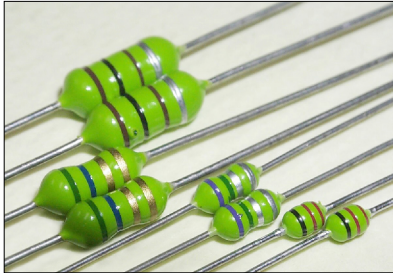


# AXIAL LEADED INDUCTORS

■ OPERATING TEMP

-25~+105°C (Including self-generated heat)



■ FEATURES

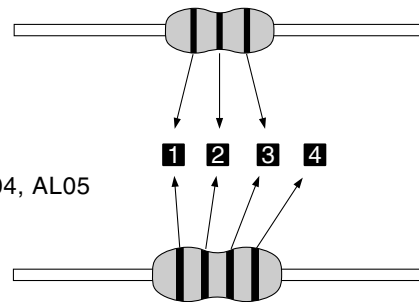
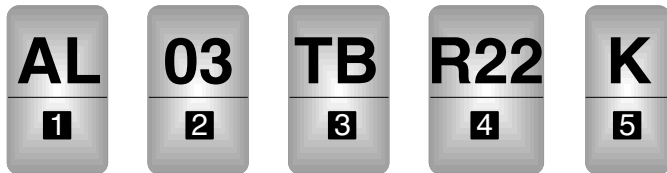
- Extremely reliable inductors that are ideal for automatic insertion
- Highly efficient automated production processes can provide high quality inductors in large volumes.

■ APPLICATIONS

- Consumer electronics such as VCRs, TVs, audio equipment and general electronic appliances.

■ MARKING

AL02



AL03, AL04, AL05

■ ORDERING CODE

1 TYPE	
AL	Axial Lead inductor

2 TYPE Dimension	
02	3.4 * 2.5
03	7.0 * 3.0
04	9.8 * 4.2
05	14.0 * 4.5

4 Marking Inductance[μH]	
R22	0.22
1R5	1.5
120	12

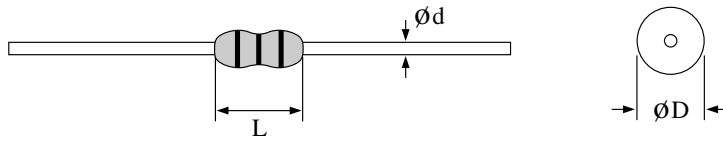
3 TAPING Dimension	
TA	Taping 26mm (02, 03 TYPE)
TB	Taping 52mm (TYPE)
TR	Taping Reel

5 Inductance[Tol. (%)]	
J	±5
K	±10
M	±20

Color	Inductance[μH]			
	1st figure	second figure	Multiplier	Tolerance
	1	2	3	4
Black	0		* 1	± 20%
Brown	1		* 10	-
Red	2		* 100	-
Orange	3		* 1000	-
Yellow	4		-	-
Green	5		-	-
Blue	6		-	-
Purple	7		-	-
Grey	8		-	-
White	9		-	-
Gold	-		* 0.1	± 5%
Silver	-		* 0.01	± 10%

■ EXTERNAL DIMENSIONS



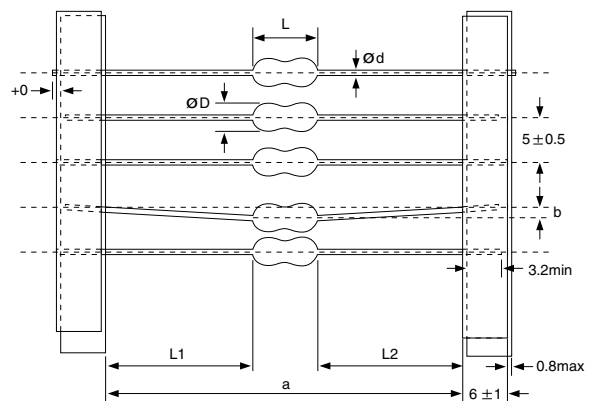
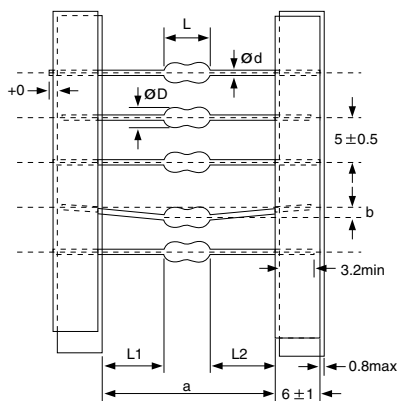
Unit : mm

Type	Dimensions[mm]			Taped	
	L	ØD	Ød	Straight	
AL02	3.4max	2.5max	0.5 ± 0.05	TB	
AL02	3.4max	2.5max	0.45 ± 0.05	TA	
AL03	7.0max	3.0max	0.5 ± 0.05	TA	
AL03	7.0max	3.0max	0.5 ± 0.05	TB	
AL04	9.8max	4.2max	0.65 ± 0.05	TB	
AL05	14.0max	4.5max	0.65 ± 0.05	TB	

■ TAPING DIMENSIONS

• TA(26mm)

• TB(52mm)



Type	Dimensions						Pitch Minimum insertion pitch
	ØD	L	a	b	L1-L2	Ød	
AL02	2.5max	3.4max	26 <sup>+0.5</sup> <sub>-0</sub>	0.8max	0.5max	0.45 ± 0.05	0.5
AL03	3.0max	7.0max	26 <sup>+1</sup> <sub>-0.5</sub>	0.8max	1.0max	0.50 ± 0.05	10.0

Type	Dimensions						Pitch Minimum insertion pitch
	ØD	L	a	b	L1-L2	Ød	
AL02	2.5max	3.4max	52 <sup>+2</sup> <sub>-1</sub>	1.2max	1.0max	0.50 ± 0.05	5.0
AL03	3.0max	7.0max	52 <sup>+2</sup> <sub>-1</sub>	1.2max	1.0max	0.50 ± 0.05	10.0
AL04	4.2max	9.8max	52 <sup>+2</sup> <sub>-1</sub>	1.2max	1.0max	0.65 ± 0.05	15.0
AL05	4.2max	14.0max	52 <sup>+2</sup> <sub>-1</sub>	1.2max	1.0max	0.50 ± 0.05	17.5

# AXIAL LEADED INDUCTORS

Type		AL02		AL03		AL04		AL05	
Range		I max[mA]	Rdc max[ ]	I max[mA]	Rdc max[ ]	I max[mA]	Rdc max[ ]	I max[mA]	Rdc max[ ]
0									
1		270	0.8	270	0.8	920	0.19	5600	0.022
10		160	2.5	160	2.5	500	0.58	2100	0.062
100		44	12	90	7.0	275	1.8	700	0.48
1000				40	33	100	14	240	5.8
2200									

• Examples

Inductance	I max [mA]	Rdc max [ ]	I max [mA]	Rdc max [ ]	I max [mA]	Rdc max [ ]	I max [mA]	Rdc max [ ]
1 H	270	0.8	270	0.8	920	0.19	5600	0.022
10 H	160	2.5	160	2.5	500	0.58	2100	0.062
100 H	44	12	90	7.0	275	1.8	700	0.480
1000 H			40	33.0	100	14.0	240	5.800

**■ ITEM - PART NUMBERS**

AL02

Ordering Code	Inductance [μH]	Inductance Tolerance	Q (min)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min)	DC Resistance [Ω] (max)	Rated Current [mA] (max)
AL02T○R22K	0.22	±10% (±5%)	35	25.2	410	0.40	400
AL02T○R27K	0.27				410	0.43	380
AL02T○R33K	0.33				360	0.48	370
AL02T○R39K	0.39				300	0.51	350
AL02T○R47K	0.47				230	0.56	330
AL02T○R56K	0.56				210	0.61	320
AL02T○R68K	0.68				190	0.67	310
AL02T○R82K	0.82				170	0.74	290
AL02T○1R0K	1.0				150	0.80	270
AL02T○1R2K	1.2				110	0.90	260
AL02T○1R5K	1.5		80	1.0	250		
AL02T○1R8K	1.8		60	1.1	240		
AL02T○2R2K	2.2		45	1.2	230		
AL02T○2R7K	2.7		40	1.3	220		
AL02T○3R3K	3.3		38	1.4	210		
AL02T○3R9K	3.9		35	1.6	200		
AL02T○4R7K	4.7		32	1.7	190		
AL02T○5R6K	5.6		30	1.9	180		
AL02T○6R8K	6.8		28	2.0	175		
AL02T○8R2K	8.2		26	2.2	165		
AL02T○100K	10		24	2.3	160		
AL02T○120K	12		22	2.5	150		
AL02T○150K	15		20	2.8	145		
AL02T○180K	18		18	3.1	140		
AL02T○220K	22		17	3.4	130		
AL02T○270K	27		16	4.3	80		
AL02T○330K	33		14	4.7	76		
AL02T○390K	39		13	5.2	74		
AL02T○470K	47		12	5.8	70		
AL02T○560K	56		11	6.4	68		
AL02T○680K	68		10	7.2	64		
AL02T○820K	82		9.5	11	46		
AL02T○101K	100		9.0	12	44		
AL02T○121K	120		8.0	13	42		
AL02T○151K	150		6.0	16	39		
AL02T○181K	180	5.5	18	37			
AL02T○221K	220	5.0	20	35			
AL02T○271K	270	4.6	26	28			

\*please specify the taping configuration code.

\*○ : TA, TB

**■ ITEM - PART NUMBERS**

AL03

Ordering Code	Inductance [μH]	Inductance Tolerance	Q (min)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min)	DC Resistance [Ω] (max)	Rated Current [mA] (max)	
AL03T○R22K	0.22	±10% (±5%)	35	25.2	450	0.40	400	
AL03T○R27K	0.27				410	0.43	380	
AL03T○R33K	0.33				360	0.48	370	
AL03T○R39K	0.39				300	0.51	350	
AL03T○R47K	0.47				230	0.56	330	
AL03T○R56K	0.56				210	0.61	320	
AL03T○R68K	0.68		40		2.52	190	0.67	310
AL03T○R82K	0.82					170	0.74	290
AL03T○1R0K	1.0					150	0.80	270
AL03T○1R2K	1.2					144	0.90	260
AL03T○1R5K	1.5					131	1.0	250
AL03T○1R8K	1.8					121	1.1	240
AL03T○2R2K	2.2		50	2.52		110	1.2	230
AL03T○2R7K	2.7					100	1.3	220
AL03T○3R3K	3.3					94	1.4	210
AL03T○3R9K	3.9					65	1.6	200
AL03T○4R7K	4.7					56	1.7	190
AL03T○5R6K	5.6					48	1.9	180
AL03T○6R8K	6.8				37	2.0	175	
AL03T○8R2K	8.2				25	2.2	165	
AL03T○100K	10				21	2.3	160	
AL03T○120K	12				19	2.5	150	
AL03T○150K	15				17	2.8	145	
AL03T○180K	18				13	3.1	140	
AL03T○220K	22				9.6	3.4	130	
AL03T○270K	27				7.2	3.8	125	
AL03T○330K	33				6.3	4.1	120	
AL03T○390K	39				6.3	4.5	115	
AL03T○470K	47				6.3	4.9	110	
AL03T○560K	56				6.2	5.3	105	
AL03T○680K	68		5.7	5.8	100			
AL03T○820K	82		5.3	6.3	95			
AL03T○101K	100		4.8	7.0	90			
AL03T○121K	120		0.796	0.796	3.8	13	90	
AL03T○151K	150				3.5	15	85	
AL03T○181K	180				3.3	16	80	
AL03T○221K	220				3.0	17	75	
AL03T○271K	270				2.8	19	65	
AL03T○331K	330				2.6	20	60	
AL03T○391K	390				2.4	22	55	
AL03T○471K	470	2.25			24	55		
AL03T○561K	560	2.10			26	50		
AL03T○681K	680	1.95			28	45		
AL03T○821K	820	1.85			30	40		
AL03T○102K	1000	1.40			33	40		

\*please specify the taping configuration code.

\*○ : TA, TB

**■ ITEM - PART NUMBERS**

AL04

Ordering Code	Inductance [ $\mu$ H]	Inductance Tolerance	Q (min)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min)	DC Resistance [ $\Omega$ ] (max)	Rated Current [mA] (max)		
AL04T○R22K	0.22	±10% (±5%)	45	25.2	300	0.10	1400		
AL04T○R27K	0.27				270	0.11	1320		
AL04T○R33K	0.33				250	0.12	1280		
AL04T○R39K	0.39				230	0.13	1200		
AL04T○R47K	0.47				220	0.14	1150		
AL04T○R56K	0.56				200	0.15	1100		
AL04T○R68K	0.68				190	0.16	1030		
AL04T○R82K	0.82				172	0.17	980		
AL04T○1R0K	1.0				157	0.19	920		
AL04T○1R2K	1.2				50	7.96	144	0.21	880
AL04T○1R5K	1.5		131	0.23			830		
AL04T○1R8K	1.8		121	0.25			790		
AL04T○2R2K	2.2		110	0.28			750		
AL04T○2R7K	2.7		100	0.30			720		
AL04T○3R3K	3.3		65	94			94	0.34	670
AL04T○3R9K	3.9						65	0.37	640
AL04T○4R7K	4.7		70	56			56	0.39	620
AL04T○5R6K	5.6						48	0.43	590
AL04T○6R8K	6.8		75	37			0.48	550	
AL04T○8R2K	8.2		80	25	0.52	530			
AL04T○100K	10		65	21	0.58	500			
AL04T○120K	12		50	2.52	19	0.63	480		
AL04T○150K	15				17	0.72	460		
AL04T○180K	18				13	0.77	430		
AL04T○220K	22				9.6	0.84	410		
AL04T○270K	27				55	7.2	7.2	0.94	390
AL04T○330K	33						6.3	1.03	370
AL04T○390K	39				50	6.3	1.12	350	
AL04T○470K	47				45	6.3	1.22	340	
AL04T○560K	56				40	6.2	6.2	1.34	320
AL04T○680K	68						5.7	1.47	305
AL04T○820K	82		35	5.3	1.62	290			
AL04T○101K	100		30	4.8	1.80	275			
AL04T○121K	120		55	0.796	3.8	3.70	185		
AL04T○151K	150		45		3.5	4.20	175		
AL04T○181K	180		50		3.3	4.60	165		
AL04T○221K	220		55		3.0	5.10	155		
AL04T○271K	270		65		2.8	2.8	5.80	145	
AL04T○331K	330					2.6	6.40	137	
AL04T○391K	390		60		2.4	2.4	7.00	133	
AL04T○471K	470	2.3				7.70	126		
AL04T○561K	560	55	2.1		2.1	8.50	120		
AL04T○681K	680				2.0	9.40	113		
AL04T○821K	820			1.9	10.5	105			
AL04T○102K	1000	50	1.4	14.0	100				

\*please specify the taping configuration code.

\*○ : TA, TB

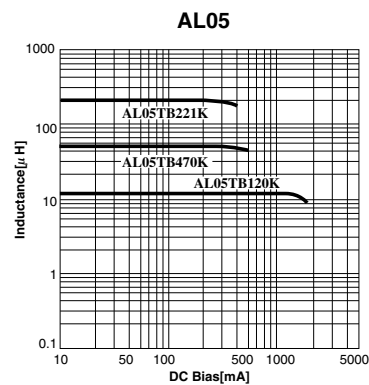
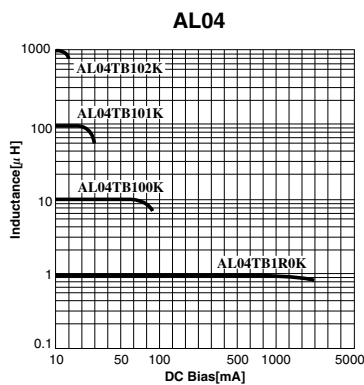
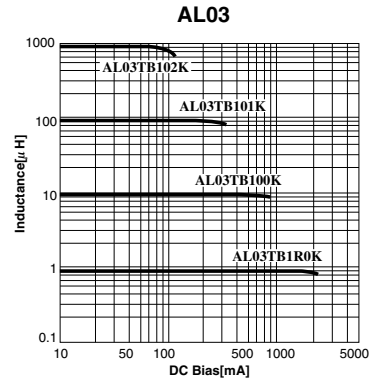
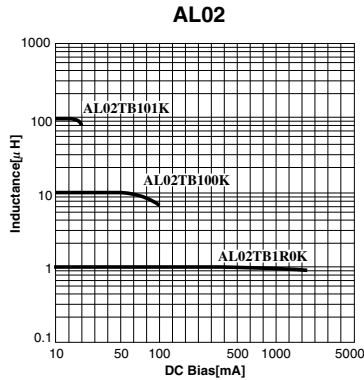
**■ ITEM - PART NUMBERS**

AL05

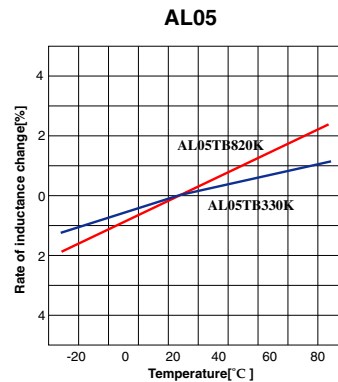
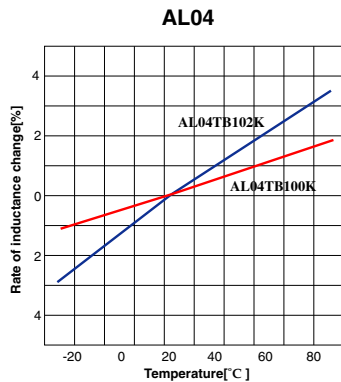
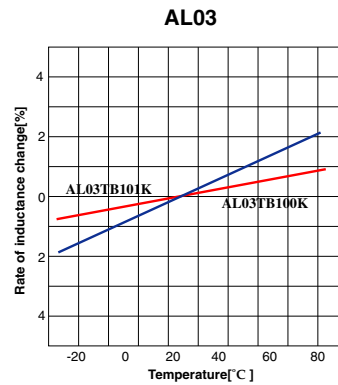
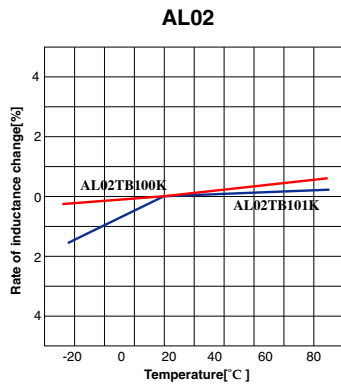
Ordering Code	Inductance [ H ]	Inductance Tolerance	Q (min)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min)	DC Resistance [ $\Omega$ ] (max)	Rated Current [mA] (max)		
AL05T○1R0K	1.0	±10%	10	7.96	300	0.022	5600		
AL05T○1R2K	1.2				260	0.024	5500		
AL05T○1R5K	1.5				250	0.026	5000		
AL05T○1R8K	1.8				240	0.029	4700		
AL05T○2R2K	2.2				220	0.031	4500		
AL05T○2R7K	2.7				195	0.034	4000		
AL05T○3R3K	3.3				155	0.038	3400		
AL05T○3R9K	3.9				115	0.040	3100		
AL05T○4R7K	4.7				85	0.044	2800		
AL05T○5R6K	5.6				55	0.048	2600		
AL05T○6R8K	6.8				50	0.051	2400		
AL05T○8R2K	8.2				38	0.056	2200		
AL05T○100K	10				24	0.062	2100		
AL05T○120K	12				2.52	15	18	0.076	1800
AL05T○150K	15						16	0.088	1700
AL05T○180K	18						15	0.110	1600
AL05T○220K	22						14	0.130	1400
AL05T○270K	27						13	0.140	1300
AL05T○330K	33						11	0.200	1200
AL05T○390K	39						10	0.220	1100
AL05T○430K	43						9.5	0.280	1000
AL05T○470K	47		9.5	0.280			1000		
AL05T○560K	56		8.0	0.300			900		
AL05T○680K	68		7.5	0.340			800		
AL05T○820K	82		7.0	0.385			700		
AL05T○101K	100		6.5	0.480	700				
AL05T○121K	120		0.796	15	5.0	0.595	600		
AL05T○151K	150				4.5	0.900	550		
AL05T○181K	180				4.0	1.10	500		
AL05T○221K	220				3.8	1.25	440		
AL05T○271K	270				3.5	1.85	420		
AL05T○331K	330				3.0	2.10	380		
AL05T○391K	390				2.8	2.28	340		
AL05T○471K	470	2.5			3.22	320			
AL05T○561K	560	2.2			3.85	290			
AL05T○681K	680	2.1			4.00	260			
AL05T○821K	820	2.0	5.00	250					
AL05T○102K	1000	1.8	5.80	240					
AL05T○122K	1200	1.6	7.10	200					
AL05T○152K	1500	0.252	1.5	7.80	190				

# ELECTRICAL CHARACTERISTICS

## ■ DC Bias Characteristics(Measured by HP 4284A)

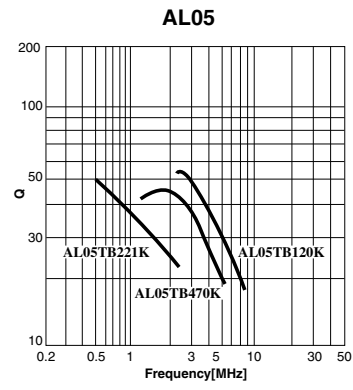
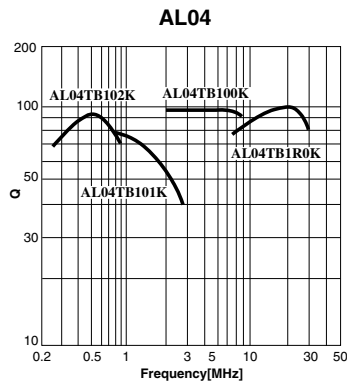
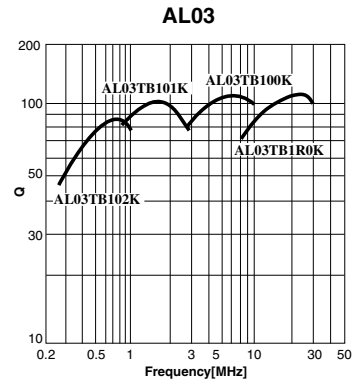
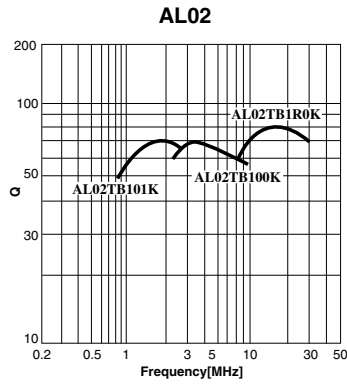


## ■ Temperature Characteristics(Measured by HP 4194A)





■ Q-Characteristics(Measured by HP 4285A + HP 42851A)



# AXIAL LEAD INDUCTORS

Item	Specified Value			Test Methods and Remarks												
	AL02, AL03 Type	AL04 Type	AL05 Type													
1. Operating Temperature Range	-25~+105°C -40~+85°C			Including self-generated heat												
2. Storage Temperature Range																
3. Q	Within the specified tolerance			Measuring equipment: LCR meter(HP4285A+42851A or its equivalent) Measuring frequency: Specified frequency												
4. Self Resonant Frequency	Within the specified tolerance			Measuring equipment: (Dip meter or its equivalent)												
5. DC Resistance	Within the specified tolerance			Measuring equipment: m+J80Ω Hi Tester(3226 or its equivalent)												
6. DC Bias Characteristic	ΔL/L → Within -10%			Measure inductance with application of rated current using LCR meter to compare it with the initial value.												
7. Temperature Characteristics	ΔL/L → Within ± 5%			Change of maximum inductance deviation in step 1 to 5 <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature(°C)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-20</td> </tr> <tr> <td>2</td> <td>25 (Minimum operating temperature)</td> </tr> <tr> <td>3</td> <td>20 (Reference temperature)</td> </tr> <tr> <td>4</td> <td>+85 (Maximum operating temperature)</td> </tr> <tr> <td>5</td> <td>20</td> </tr> </tbody> </table>	Step	Temperature(°C)	1	-20	2	25 (Minimum operating temperature)	3	20 (Reference temperature)	4	+85 (Maximum operating temperature)	5	20
Step	Temperature(°C)															
1	-20															
2	25 (Minimum operating temperature)															
3	20 (Reference temperature)															
4	+85 (Maximum operating temperature)															
5	20															
8. Inductance	Within the Specified tolerance			Measuring equipment: LCR meter (HP4285A+42851A or its equivalent) Measuring frequency: Specified frequency												
9. Rated Current	Within the specified tolerance			The maximum DC value having inductance decrease within 10% and temperature increase within 20°C by the application of DC bias												
10. Terminal Strength	Tensile	No abnormality such as cutoff or looseness of lead		Apply the stated tensile force progressively in the direction to draw terminal <table border="1"> <thead> <tr> <th>Nominal wire diameter(mm)</th> <th>Tensile force(N)</th> <th>Duration(S)</th> </tr> </thead> <tbody> <tr> <td>0.43 &lt; Ød ≤ 0.65</td> <td>25</td> <td>5</td> </tr> </tbody> </table>	Nominal wire diameter(mm)	Tensile force(N)	Duration(S)	0.43 < Ød ≤ 0.65	25	5						
	Nominal wire diameter(mm)	Tensile force(N)	Duration(S)													
0.43 < Ød ≤ 0.65	25	5														
Bending	No abnormality such as cutoff or looseness of lead		Suspend a mass at the terminal, incline the body through angle of 90° and return it to initial position. This operation is done over a period of 2~3sec. Then a second bend in the opposite direction shall be made. Number of bends : Two times <table border="1"> <thead> <tr> <th>Nominal wire diameter(mm)</th> <th>Bending force(N)</th> <th>Mass weight(kg)</th> </tr> </thead> <tbody> <tr> <td>0.3 &lt; Ød ≤ 0.5</td> <td>2.5</td> <td>0.25</td> </tr> <tr> <td>0.5 &lt; Ød ≤ 0.8</td> <td>5</td> <td>0.5</td> </tr> </tbody> </table>	Nominal wire diameter(mm)	Bending force(N)	Mass weight(kg)	0.3 < Ød ≤ 0.5	2.5	0.25	0.5 < Ød ≤ 0.8	5	0.5				
Nominal wire diameter(mm)	Bending force(N)	Mass weight(kg)														
0.3 < Ød ≤ 0.5	2.5	0.25														
0.5 < Ød ≤ 0.8	5	0.5														
11. Body Strength	No abnormality such as damage			AL02 Applied force : 30N Duration : 10sec. Speed : Shall attain to specified force in sec. AL03, 04, 05 Applied force : 50N Duration : 10sec. Speed : Shall attain to specified force in 2 sec.												
12. Resistance to vibration	ΔL/L → Within ± 5% Q → 30min	ΔL/L → Within ± 5% Q/Q → Within ± 10%	ΔL/L → Within ± 10% Q → 15min	According to JIS C 5102 clause 8.2 Vibration type : A Duration : 2hrs each in X, Y and Z directions Total : 6 hrs Frequency range : 10 to 55 to 10 Hz(1min) Amplitude : 1.5mm Mounting method : Soldering onto printed board Recovery : At least 1 hr of recovery under the standard condition after the test, followed by the measurement within 2 hrs.												
13. Resistance to Shock	No significant abnormality in appearance	No significant abnormality in appearance	No significant abnormality in appearance	Drop test impact material : Concrete of vinyl tile Height : 1m Total number of drops : 10 times												
14. Solderability	At least 75% of terminal electrode is covered by new solder			Solder temperature : 230 ± 5°C Duration : 2 ± 0.5sec.												
15. Resistance to Soldering Heat	No significant abnormality in appearance	No significant abnormality in appearance	ΔL/L → Within ± 5% Q → 15min	Solder temperature : 260 ± 5°C(AL02), 270 ± 5°C(AL03, 04, 05) Duration : 2 ± 0.5sec. Duration : 2 ± 0.5sec. Immersed conditions : Inserter into substrate with t = 1.6mm Recovery : At least 1 hr of recovery under the standard condition after the test, followed by the measurement within 2 hrs												

# AXIAL LEAD INDUCTORS

Item	Specified Value			Test Methods and Remarks												
	AL02, AL03 Type	AL04 Type	AL05 Type													
16. Resistance to Solvent	Please avoid the ultrasonic cleaning of this product.															
17. Thermal shock	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 30min         $\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 30min	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q/Q $\rightarrow$ Within $\pm 30\%$         $\Delta L/L \rightarrow$ Within $\pm 10\%$ Q/Q $\rightarrow$ Within $\pm 30\%$	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 15min         $\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 15min	Conditions for 1 cycle <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature(°C)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-20</td> </tr> <tr> <td>2</td> <td>25 (Minimum operating temperature)</td> </tr> <tr> <td>3</td> <td>20 (Reference temperature)</td> </tr> <tr> <td>4</td> <td>+85 (Maximum operating temperature)</td> </tr> <tr> <td>5</td> <td>20</td> </tr> </tbody> </table> Number of cycles : 5 Recovery : At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.	Step	Temperature(°C)	1	-20	2	25 (Minimum operating temperature)	3	20 (Reference temperature)	4	+85 (Maximum operating temperature)	5	20
Step	Temperature(°C)															
1	-20															
2	25 (Minimum operating temperature)															
3	20 (Reference temperature)															
4	+85 (Maximum operating temperature)															
5	20															
18. Damp Heat	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 30min	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q/Q $\rightarrow$ Within $\pm 30\%$	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 15min	Temperature : $40 \pm 2^\circ\text{C}$ Humidity : 90 to 95% RH Duration : 1000hrs Recovery : At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.												
19. Loading under Tensile Damp Heat	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 30min	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q/Q $\rightarrow$ Within $\pm 30\%$	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 15min	Temperature : $40 \pm 2^\circ\text{C}$ Humidity : 90 to 95% RH Duration : 1000hrs Applied current : Rated current Recovery : At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.												
20. Loading at High Temperature	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 30min	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q/Q $\rightarrow$ Within $\pm 30\%$	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 15min	Temperature : $85 \pm 2^\circ\text{C}$ Duration : 1000hrs Applied current : Rated current Recovery : At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.												
21. Low Temperature Life Test	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 30min	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q/Q $\rightarrow$ Within $\pm 30\%$	$\Delta L/L \rightarrow$ Within $\pm 10\%$ Q $\rightarrow$ 15min	Temperature : $-25 \pm 2^\circ\text{C}$ Duration : 1000hrs Applied current : Rated current Recovery : At least 1 hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2 hrs.												

Note on standard condition : "standard condition" referred to herein is defined as follows.  
 5 to 35°C of temperature, 45 to 85% relative humidity and 86 to 106kPa of air pressure.  
 When there are questions concerning measurement results : In order to provide correlation data, the test shall be conducted under condition of  $20 \pm 2^\circ\text{C}$  of temperature, 45 to 85% relative humidity and 86 to 106kPa of air pressure  
 Unless otherwise specified, all the tests are conducted under the "standard condition"