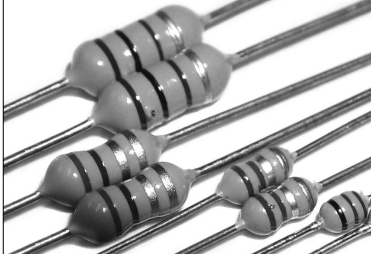


LEADED INDUCTORS

■ OPERATING TEMP

-25 ~ +85°C (Including self-generated heat)

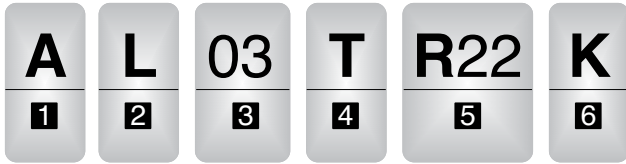


■ FEATURES

- ABCO Axial inductor is wire wound on the ferrite core.
- Extremely reliable inductors that are ideal for signal and power line applications
- Highly efficient automated production processes can provide high quality inductors in large volumes.

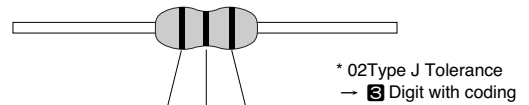
■ APPLICATION

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

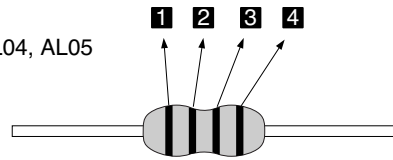


■ MARKING

- AL02, ALN02, ALC02



- AL03, AL04, AL05



■ ORDERING CODE

1 Part name	
A	Axial Inductor

2 Characteristics	
L	Standard Type
N, C	High Current Type

3 Body Size (D×L)[mm]	
02	2.5×3.4(AL, ALC)
	2.5×3.7(ALN)
03	3.0×7.0
04	4.2×9.8
05	4.5×14.0

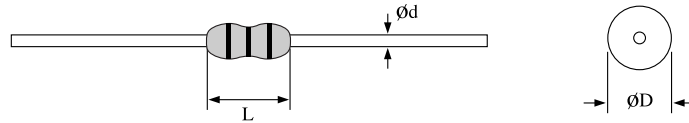
4 Taping Configurations	
TA	Axial lead(26mm lead space) /ammo pack(02/03type)
TB	Axial lead(52mm lead space) /ammo pack(all type)
TR	Axial lead Reel pack (all type)

5 Nominal Inductance[μH]	
R22	0.22
1R5	1.5
120	12

6 Inductance Tolerance[%]	
J	± 5
K	± 10
M	± 20

Color	Inductance[μH]			
	1st Digit	2nd Digit	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%

■ APPERANCE DIMENSIONS



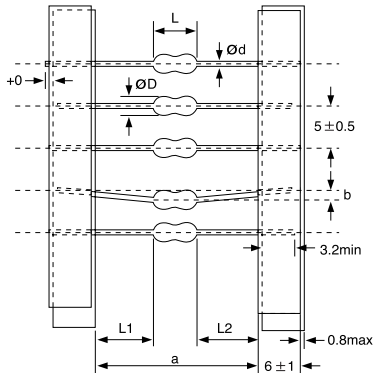
Unit: mm

Type	Dimensions			Taped	
	L	ØD	Ød	Straight	
AL02, ALC02	3.4max.	2.5max.	0.5 ± 0.05	TB	
ALN02	3.7max.	2.5max.			
AL02, ALC02	3.4max.	2.5max.	0.45 ± 0.05	TA	
ALN02	3.7max.	2.5max.			
AL03	7.0max.	3.0max.	0.5 ± 0.05	TA	
				TB	
AL04	9.8max.	4.2max.	0.65 ± 0.05	TB	
AL05	14.0max.	4.5max.	0.65 ± 0.05	TB	

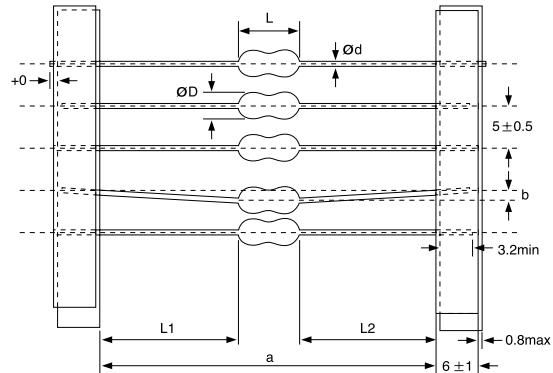
LEADED INDUCTORS

■ SHAPE DIMENSIONS

● TA(26mm)



● TB(52mm)



Unit: mm

Type	Dimensions						Pitch Minimum insertion pitch
	ØD	L	a	b	L1-L2	Ød	
AL02 ALC02	2.5max.	3.4max.	26 ^{+0.5} ₋₀	0.8max.	0.5max.	0.45 ± 0.05	5.0
ALN02	2.5max.	3.7max.	26 ^{+0.5} ₋₀	0.8max.	0.5max.	0.45 ± 0.05	5.0
AL03	3.0max.	7.0max.	26 ⁺¹ _{-0.5}	0.8max.	1.0max.	0.50 ± 0.05	10.0

Unit: mm

Type	Dimensions						Pitch Minimum insertion pitch
	ØD	L	a	b	L1-L2	Ød	
AL02 ALC02	2.5max.	3.4max.	52 ⁺² ₋₁	1.2max.	1.0max.	0.50 ± 0.05	5.0
ALN02	2.5max.	3.7max.	52 ⁺² ₋₁	1.2max.	1.0max.	0.50 ± 0.05	7.5
AL03	3.0max.	7.0max.	52 ⁺² ₋₁	1.2max.	1.0max.	0.50 ± 0.05	10.0
AL04	4.2max.	9.8max.	52 ⁺² ₋₁	1.2max.	1.0max.	0.65 ± 0.05	12.5
AL05	4.5max.	14.0max.	52 ⁺²	1.2max.	1.0max.	0.50 ± 0.05	20.0

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before your order and/or use.

AVAILABLE INDUCTANCE RANGE

Type Range	AL02	ALC02	ALN02	AL03	AL04	AL05
0	I max.[mA] Rdc max.[Ω]	I max.[mA] Rdc max.[Ω]	I max.[mA] Rdc max.[Ω]	I max.[mA] Rdc max.[Ω]	I max.[mA] Rdc max.[Ω]	I max.[mA] Rdc max.[Ω]
1	0.22	0.22	0.12	0.22	0.22	1.0
10						
100	470	100	470			
1000				1000		1500
2200						
8200						
10000					10000	

● Examples

Inductance	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]	I max. [mA]	Rdc max. [Ω]
1 μH	270	0.8	510	0.4	500	0.32	270	0.8	920	0.19	5600	0.022
10 μH	160	2.3	270	1.4	280	1.0	160	2.3	500	0.58	2100	0.062
100 μH	44	12	105	9.1	120	5.6	90	7.0	275	1.80	700	0.480
1000 μH	-	-	-	-	-	-	40	33.0	100	14.0	240	5.800
2200 μH	-	-	-	-	-	-	-	-	80	40.0	-	-
8200 μH	-	-	-	-	-	-	-	-	45	116.0	-	-
10000 μH	-	-	-	-	-	-	-	-	35	148.0	-	-

ITEM PART NUMBERS

●AL02

Ordering Code	Inductance [μH]	Inductance Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rate Current [mA] (max.)
AL02TO R22K	0.22	± 10% (± 5%)	35	25.2	410	0.40	400
AL02TO R27K	0.27				410	0.43	380
AL02TO R33K	0.33				360	0.48	370
AL02TO R39K	0.39				300	0.51	350
AL02TO R47K	0.47				230	0.56	330
AL02TO R56K	0.56				210	0.61	320
AL02TO R68K	0.68				190	0.67	310
AL02TO R82K	0.82				170	0.74	290
AL02TO 1R0K	1.0				150	0.80	270
AL02TO 1R2K	1.2				110	0.90	260
AL02TO 1R5K	1.5		80	1.0	250		
AL02TO 1R8K	1.8		60	1.1	240		
AL02TO 2R2K	2.2		45	1.2	230		
AL02TO 2R7K	2.7		40	1.3	220		
AL02TO 3R3K	3.3		38	1.4	210		
AL02TO 3R9K	3.9		35	1.6	200		
AL02TO 4R7K	4.7		32	1.7	190		
AL02TO 5R6K	5.6		30	1.9	180		
AL02TO 6R8K	6.8		28	2.0	175		
AL02TO 8R2K	8.2		26	2.2	165		
AL02TO 100K	10		24	2.3	160		
AL02TO 120K	12		22	2.5	150		
AL02TO 150K	15		20	2.8	145		
AL02TO 180K	18		18	3.1	140		
AL02TO 220K	22		17	3.4	130		
AL02TO 270K	27		16	4.3	80		
AL02TO 330K	33		14	4.7	76		
AL02TO 390K	39		13	5.2	74		
AL02TO 470K	47		12	5.8	70		
AL02TO 560K	56		11	6.4	68		
AL02TO 680K	68		10	7.2	64		
AL02TO 820K	82		9.5	11	46		
AL02TO 101K	100		9.0	12	44		
AL02TO 121K	120		8.0	13	42		
AL02TO 151K	150		6.0	16	39		
AL02TO 181K	180		5.5	18	37		
AL02TO 221K	220		5.0	20	35		
AL02TO 271K	270		4.6	26	28		
AL02TO 331K	330		4.4	27	26		
AL02TO 391K	390		4.1	28	25		
AL02TO 471K	470	3.7	30	24			

LEADED INDUCTORS

*please specify the taping configuration code.

*O: A, B, R

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before your order and/or use.

ITEM PART NUMBERS

●ALC02

Ordering Code	Inductance [μ H]	Inductance Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rate Current [mA] (max.)	
ALC02TOR22K	0.22	10%	50	25.2	450	0.2	730	
ALC02TOR27K	0.27				400	0.21	700	
ALC02TOR33K	0.33				350	0.23	670	
ALC02TOR39K	0.39				320	0.25	640	
ALC02TOR47K	0.47				300	0.27	620	
ALC02TOR56K	0.56				280	0.3	590	
ALC02TOR68K	0.68				240	0.33	570	
ALC02TOR82K	0.82				210	0.35	540	
ALC02TO1R0K	1				190	0.4	510	
ALC02TO1R2J	1.2	5%	40	7.96	110	0.43	490	
ALC02TO1R5J	1.5				80	0.48	460	
ALC02TO1R8J	1.8				70	0.53	440	
ALC02TO2R2J	2.2				60	0.6	420	
ALC02TO2R7J	2.7				55	0.68	390	
ALC02TO3R3J	3.3				50	0.75	370	
ALC02TO3R9J	3.9				45	0.83	350	
ALC02TO4R7J	4.7				40	0.91	340	
ALC02TO5R6J	5.6				35	1	320	
ALC02TO6R8J	6.8			30	1.1	300		
ALC02TO8R2J	8.2			26	1.3	290		
ALC02TO100J	10			24	1.4	270		
ALC02TO120J	12			40	2.52	22	1.4	270
ALC02TO150J	15					20	1.6	260
ALC02TO180J	18					18	1.7	250
ALC02TO220J	22					17	1.9	230
ALC02TO270J	27					16	2.5	200
ALC02TO330J	33					14	3.4	180
ALC02TO390J	39			40	2.52	13	3.6	170
ALC02TO470J	47	12	4.6			150		
ALC02TO560J	56	11	5.1			140		
ALC02TO680J	68	10	5.6			130		
ALC02TO820J	82	9.5	7.9			115		
ALC02TO101J	100	9	9.1			105		

*please specify the taping configuration code.

*O: A, B, R

● ALN02

Ordering Code	Inductance [μH]	Inductance Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rate Current [mA] (max.)		
ALN02TO R12K	0.12	± 10% (± 5%)	50	25.2	500	0.12	850		
ALN02TO R15K	0.15				500	0.14	800		
ALN02TO R18K	0.18				500	0.15	760		
ALN02TO R22K	0.22				500	0.16	730		
ALN02TO R27K	0.27				500	0.18	690		
ALN02TO R33K	0.33				480	0.19	660		
ALN02TO R39K	0.39				430	0.21	640		
ALN02TO R47K	0.47				380	0.23	610		
ALN02TO R56K	0.56				350	0.25	580		
ALN02TO R68K	0.68				310	0.27	550		
ALN02TO R82K	0.82				270	0.29	520		
ALN02TO 1R0K	1.0				240	0.32	500		
ALN02TO 1R2K	1.2				7.96	40	210	0.35	480
ALN02TO 1R5K	1.5						190	0.38	450
ALN02TO 1R8K	1.8						140	0.42	430
ALN02TO 2R2K	2.2						90	0.47	410
ALN02TO 2R7K	2.7						70	0.52	390
ALN02TO 3R3K	3.3		50	0.57			370		
ALN02TO 3R9K	3.9		35	0.63			360		
ALN02TO 4R7K	4.7		32	0.69			340		
ALN02TO 5R6K	5.6		30	0.75			320		
ALN02TO 6R8K	6.8		28	0.84			310		
ALN02TO 8R2K	8.2		26	0.92			290		
ALN02TO 100K	10		24	1.0			280		
ALN02TO 120K	12		2.52	50			22	1.0	280
ALN02TO 150K	15						20	1.2	265
ALN02TO 180K	18						18	1.3	250
ALN02TO 220K	22						17	1.5	235
ALN02TO 270K	27						15	1.7	220
ALN02TO 330K	33				14	2.2	180		
ALN02TO 390K	39				13	2.4	170		
ALN02TO 470K	47				12	2.8	160		
ALN02TO 560K	56				10	4.1	140		
ALN02TO 680K	68				9.2	4.5	130		
ALN02TO 820K	82				8.8	5.0	125		
ALN02TO 101K	100				8.0	5.6	120		
ALN02TO 121K	120				0.796	50	6.6	9.2	90
ALN02TO 151K	150						5.8	10.5	85
ALN02TO 181K	180						5.4	11.5	80
ALN02TO 221K	220						4.8	13.0	75
ALN02TO 271K	270						3.6	16.0	70
ALN02TO 331K	330		3.4	18.0			66		
ALN02TO 391K	390		3.2	20.0			63		
ALN02TO 471K	470		3.0	22.0	60				

*please specify the taping configuration code.

*O : A, B, R

LEADED INDUCTORS

ITEM PART NUMBERS

●AL03

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

*please specify the taping configuration code.

*O: A, B, R

● AL04

Ordering Code	Inductance [μH]	Inductance Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rated Current [mA] (max.)			
AL04TOR22K	0.22	± 10% (± 5%)	45	25.2	300	0.10	1400			
AL04TOR27K	0.27				270	0.11	1320			
AL04TOR33K	0.33				250	0.12	1280			
AL04TOR39K	0.39				230	0.13	1200			
AL04TOR47K	0.47				220	0.14	1150			
AL04TOR56K	0.56				200	0.15	1100			
AL04TOR68K	0.68				190	0.16	1030			
AL04TOR82K	0.82				172	0.17	980			
AL04TOR1R0K	1.0				157	0.19	920			
AL04TOR1R2K	1.2				50	7.96	144	0.21	880	
AL04TOR1R5K	1.5		131	0.23			830			
AL04TOR1R8K	1.8		121	0.25			790			
AL04TOR2R2K	2.2		110	0.28			750			
AL04TOR2R7K	2.7		100	0.30			720			
AL04TOR3R3K	3.3		94	0.34			670			
AL04TOR3R9K	3.9		65	0.37			640			
AL04TOR4R7K	4.7		56	0.39			620			
AL04TOR5R6K	5.6		48	0.43			590			
AL04TOR6R8K	6.8		37	0.48			550			
AL04TOR8R2K	8.2		25	0.52	530					
AL04TOR100K	10		21	0.58	500					
AL04TOR120K	12		50	2.52	19	0.63	480			
AL04TOR150K	15				17	0.72	460			
AL04TOR180K	18				13	0.77	430			
AL04TOR220K	22				9.6	0.84	410			
AL04TOR270K	27				7.2	0.94	390			
AL04TOR330K	33				6.3	1.03	370			
AL04TOR390K	39				6.3	1.12	350			
AL04TOR470K	47				6.3	1.22	340			
AL04TOR560K	56				6.2	1.34	320			
AL04TOR680K	68				5.7	1.47	305			
AL04TOR820K	82		5.3	1.62	290					
AL04TOR101K	100		4.8	1.80	275					
AL04TOR121K	120		55	0.796	3.8	3.70	185			
AL04TOR151K	150				45	4.20	175			
AL04TOR181K	180				50	4.60	165			
AL04TOR221K	220				55	5.10	155			
AL04TOR271K	270				65	0.252	2.8	5.80	145	
AL04TOR331K	330						2.6	6.40	137	
AL04TOR391K	390						2.4	7.00	133	
AL04TOR471K	470	60					0.796	2.25	7.70	126
AL04TOR561K	560							2.10	8.50	120
AL04TOR681K	680							1.95	9.40	113
AL04TOR821K	820		1.85	10.5				105		
AL04TOR102K	1000		1.40	14.0				100		
AL04TOR122K	1200		50	0.252				1.20	22.0	110
AL04TOR152K	1500							1.10	25.0	100
AL04TOR182K	1800				0.98	28.0		90		
AL04TOR222K	2200				0.90	40.0		80		
AL04TOR272K	2700				0.85	44.0		70		
AL04TOR332K	3300	0.81			50.0	70				
AL04TOR392K	3900	40			0.252	0.72	63.0	60		
AL04TOR472K	4700					0.60	69.0	55		
AL04TOR562K	5600					0.55	77.0	50		
AL04TOR682K	6800					0.50	104.0	45		
AL04TOR822K	8200		0.48	116.0		45				
AL04TOR103K	10000		0.40	148.0		35				

*please specify the taping configuration code.

*O: A, B, R

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before your order and/or use.

LEADED INDUCTORS

ITEM PART NUMBERS

●AL05

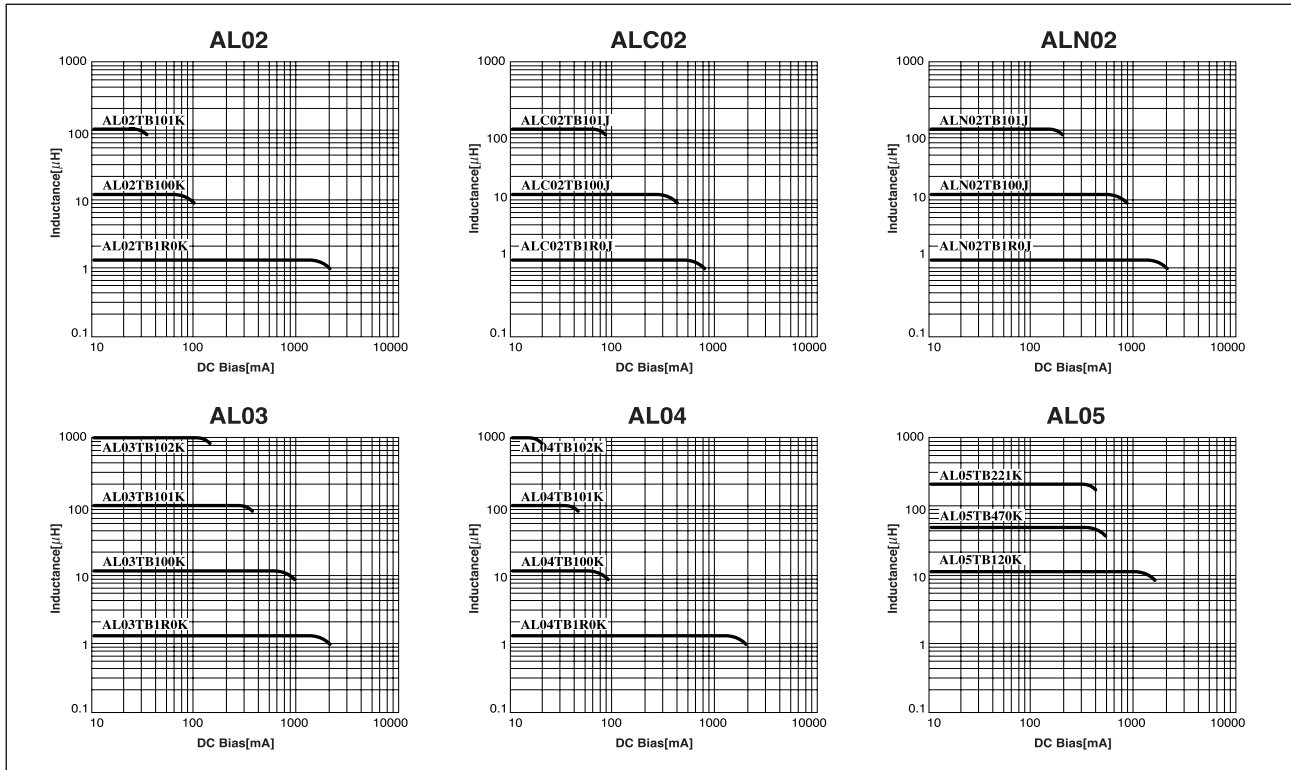
Ordering Code	Inductance [μ H]	Inductance Tolerance	Q (min.)	Measuring Frequency [MHz]	Self-Resonant Frequency [MHz] (min.)	DC Resistance [Ω] (max.)	Rate Current [mA] (max.)
AL05TO1R0K	1.0	± 10%	10	7.96	300	0.022	5600
AL05TO1R2K	1.2				260	0.024	5500
AL05TO1R5K	1.5				250	0.026	5000
AL05TO1R8K	1.8				240	0.029	4700
AL05TO2R2K	2.2				220	0.031	4500
AL05TO2R7K	2.7				195	0.034	4000
AL05TO3R3K	3.3				155	0.038	3400
AL05TO3R9K	3.9				115	0.040	3100
AL05TO4R7K	4.7				85	0.044	2800
AL05TO5R6K	5.6				55	0.048	2600
AL05TO6R8K	6.8				50	0.051	2400
AL05TO8R2K	8.2				38	0.056	2200
AL05TO100K	10				24	0.062	2100
AL05TO120K	12				18	0.076	1800
AL05TO150K	15				16	0.088	1700
AL05TO180K	18		15	0.110	1600		
AL05TO220K	22		14	0.130	1400		
AL05TO270K	27		13	0.140	1300		
AL05TO330K	33		11	0.200	1200		
AL05TO390K	39		10	0.220	1100		
AL05TO430K	43		9.5	0.280	1000		
AL05TO470K	47		9.5	0.280	1000		
AL05TO560K	56		8.0	0.300	900		
AL05TO680K	68		7.5	0.340	800		
AL05TO820K	82		7.0	0.385	700		
AL05TO101K	100		6.5	0.480	700		
AL05TO121K	120		5.0	0.595	600		
AL05TO151K	150		4.5	0.900	550		
AL05TO181K	180		4.0	1.10	500		
AL05TO221K	220		3.8	1.25	440		
AL05TO271K	270		3.5	1.85	420		
AL05TO331K	330		3.0	2.10	380		
AL05TO391K	390		2.8	2.28	340		
AL05TO471K	470		2.5	3.22	320		
AL05TO561K	560		2.2	3.85	290		
AL05TO681K	680	2.1	4.00	260			
AL05TO821K	820	2.0	5.00	250			
AL05TO102K	1000	1.8	5.80	240			
AL05TO122K	1200	1.6	7.10	200			
AL05TO152K	1500	1.5	7.80	190			
			15	0.796			
				0.252			

*please specify the taping configuration code.

*O: A, B, R

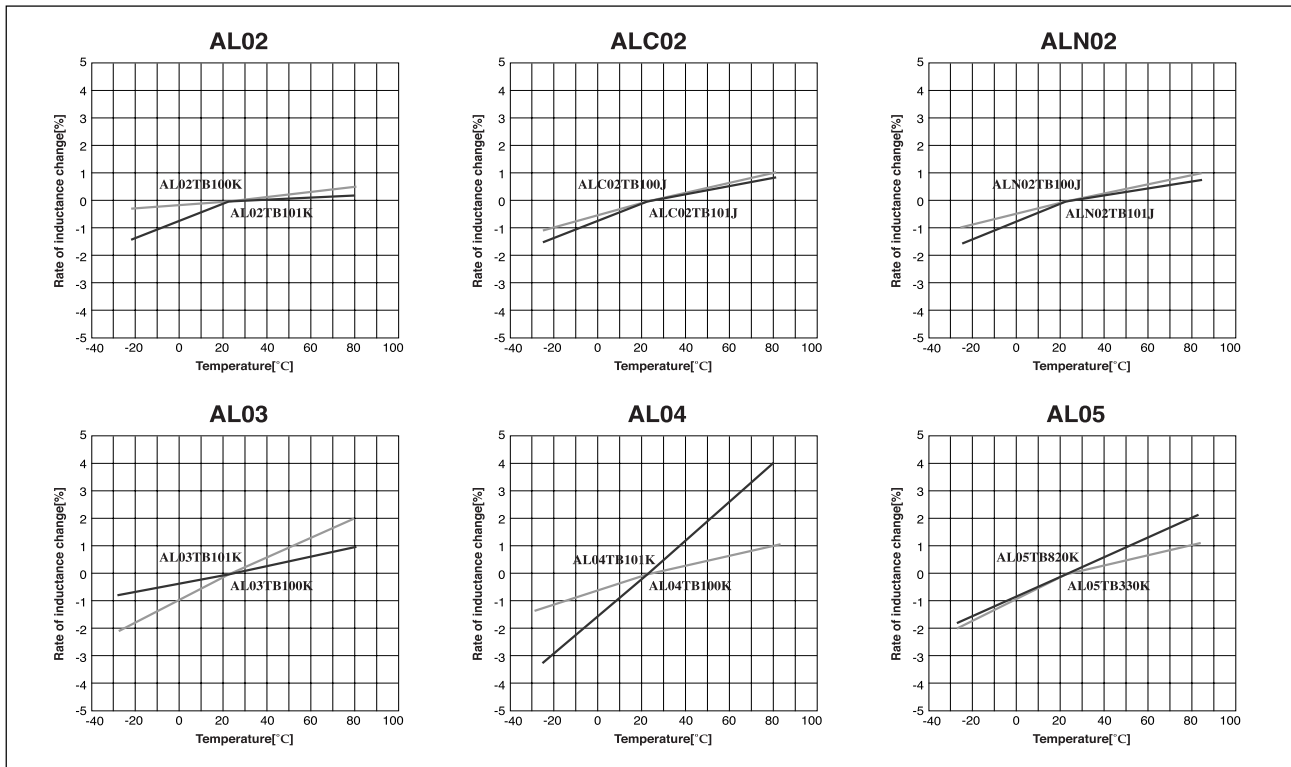
ELECTRICAL CHARACTERISTICS

● DC Bias Characteristics (Measured by HP4284A + HP42841A)



LEADED INDUCTORS

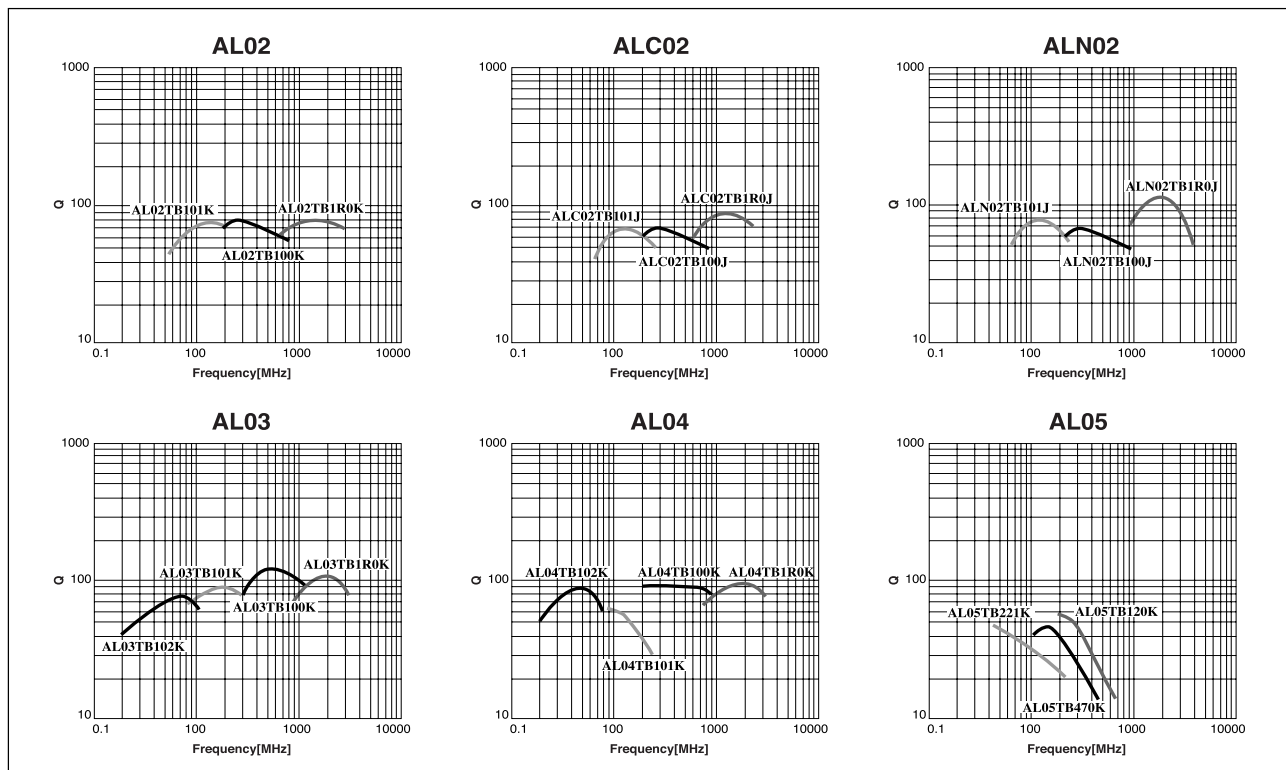
● Temperature Characteristics (Measured by HP4284A + HP42841A)



Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before your order and/or use.

ELECTRICAL CHARACTERISTICS

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



RELIABILITY

LEADED INDUCTORS

Item	Specified Value			Test Methods and Remarks												
	AL02, AL03 Type	AL04 Type	AL05 Type													
1. Operating Temperature Range	-25 ~ +85°C			Including self-generated heat.												
2. Storage Temperature Range	-40 ~ +85°C															
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 Characteristics	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" style="margin-left: auto; margin-right: auto;"> <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" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Nominal wire diameter(mm)</th> <th>Tensile force(N)</th> <th>Duration(S)</th> </tr> </thead> <tbody> <tr> <td>0.43 < 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 2~3 sec. Then a second bend in the opposite direction shall be made. Number of bends: Two times <table border="1" style="margin-left: auto; margin-right: auto;"> <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 < Ød ≤ 0.5</td> <td>2.5</td> <td>0.25</td> </tr> <tr> <td>0.5 < 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: 10 sec. Speed: Shall attain to specified force in 2 sec. AL03, 04, 05 Applied force: 50N Duration: 10 sec. Speed: Shall attain to specified force in 2 sec.												
12. Resistance to vibration	ΔL/L → Within ±5% Q → 30 min.	ΔL/L → Within ±5% Q/Q → Within ±10%	ΔL/L → Within ±5% Q → 15 min.	According to JIS C 5102 clause 8.2 Vibration type: A Duration: 2 hrs each in X, Y and Z directions Total: 6 hrs Frequency range: 10 to 55 to 10 Hz(1min.) Amplitude: 1.5 mm 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: 3 ± 0.5 sec.												
15. Resistance to Soldering Heat	No significant abnormality in appearance	No significant abnormality in appearance	ΔL/L → Within ±5% Q → 15 min.	Solder temperature: 270 ± 5°C Duration: 5 ± 0.5 sec. Immersed conditions: inserted into substrate with t = 1.6 mm Recovery: At least 1 hr of recovery under the standard condition after the test, followed by the measurement within 2 hrs.												

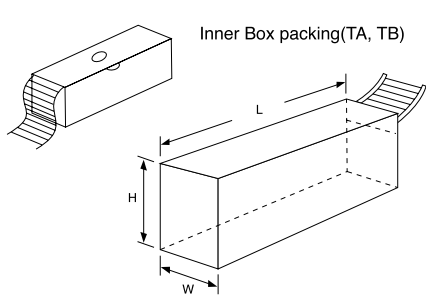
RELIABILITY

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/Q \rightarrow Within $\pm 30\%$	$\Delta L/L \rightarrow$ Within $\pm 5\%$ Q \rightarrow 15min.	Conditions for 1 cycle <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Step</th> <th>Temperature(°C)</th> <th>Duration(min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25⁺⁰₋₃</td> <td>30 \pm 3</td> </tr> <tr> <td>2</td> <td>Room temperature</td> <td>within 3</td> </tr> <tr> <td>3</td> <td>+85⁺²₋₀</td> <td>30 \pm 3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>within 3</td> </tr> </tbody> </table> Number of cycles: 5 cycles 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)	Duration(min)	1	-25 ⁺⁰ ₋₃	30 \pm 3	2	Room temperature	within 3	3	+85 ⁺² ₋₀	30 \pm 3	4	Room temperature	within 3
Step	Temperature(°C)	Duration(min)																	
1	-25 ⁺⁰ ₋₃	30 \pm 3																	
2	Room temperature	within 3																	
3	+85 ⁺² ₋₀	30 \pm 3																	
4	Room temperature	within 3																	
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 $\pm 5\%$ Q \rightarrow 15min.	- Temperature: 40 \pm 2°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 $\pm 5\%$ Q \rightarrow 15min.	- Temperature: 40 \pm 2°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 $\pm 5\%$ Q \rightarrow 15min.	- Temperature: 85 \pm 2°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 $\pm 5\%$ Q \rightarrow 15min.	- Temperature: -25 \pm 2°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°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"

PACKING

Type	Taping Lead Style	Inner Box		Out Box			Item
		Size(m/m) (W × H × L)	Quantity	Size(m/m) (W × H × L)	Quantity	Weight (100μH)	
 Inner Box packing(TA, TB)	TA	26m/m	50 × 65 × 252	2,000	285 × 260 × 455	54,000	AL02
							ALC02
							ALN02
							AL03
	TB	52m/m	70 × 65 × 265	2,500	285 × 250 × 455	45,000	AL02
							ALC02, ALN02
							AL03
							AL04
TR	52m/m	280 × 280 (A × A)	5,000	460 × 320 × 600	50,000	AL02	
						ALC02	
						AL03	
						AL04	