アキシャルリードインダクタ
AXIAL LEADED INDUCTORS



OPERATING TEMP	−25～+105℃（製品自己発熱を含む） (Including self-generated heat)

フロー／WAVE

特長　FEATURES

・自動挿入に対し極めて高い信頼性を有するインダクタ
・自動化高速ラインによる生産の為、量産性に優れかつ高品質
・アキシャルリードタイプの他、ラジアルテーピング、単品加工品があり
　バリエーションが豊富

・Extremely reliable inductors that are ideal for automatic insertion.
・Highly efficient automated production processes can provide high quality inductors in large volumes.
・Wide selection of configurations including axial leaded, formed radial leads and bulk products to meet most manufacturing needs.

用途　APPLICATIONS

・VTR、CTV、オーディオ、通信機、その他電子機器全般

Consumer electronics such as VTRs, TVs, audio equipment, mobile communications, and general electronic appliances.

形名表記法　ORDERING CODE

1 形式

LA	アキシャルインダクタ

2 製品区分

L△	一般
N△	高電流タイプ
P△	一般（リード線径0.45φmm）

△= スペース

3 形状寸法(L×D)〔mm以下〕

02	3.4×2.3　(LAL/LAP) 3.6×2.4　(LAN)
03	7.0×2.7
04	9.8×4.0
05	14.0×5.5

4 リード加工形状〔mm〕

KB	フォーミング単品(04タイプ)
KH	フォーミング単品(03タイプ)
KR	フォーミング単品(02タイプ)
NA	ストレート単品
SK	縦形フォーミング
TA	アキシャルつづらテーピング26.0幅
TB	アキシャルつづらテーピング52.0幅
VA	縦形ラジアルテーピングピッチ2.5
VB	縦形ラジアルテーピングピッチ5.0
VD	ラジアルテーピング

5 公称インダクタンス〔μH〕

例	※R=小数点
1R5	1.5
120	12

6 インダクタンス許容差〔%〕

J	±5
K	±10
M	±20

7 当社管理記号

△△△△△	標準品

△= スペース

L A L △ 0 3 T A R 2 2 M ○ ○ ○ ○ ○
1 2 3 4 5 6 7

1 Type

LA	Axial inductor

2 Product Specification

L△	Standard type
N△	High current type
P△	Standard type (lead diameter:0.45mm)

△=Blank space

3 Body size(L×D)〔mm〕

02	3.4×2.3　(LAL/LAP) 3.6×2.4　(LAN)
03	7.0×2.7
04	9.8×4.0
05	14.0×5.5

4 Lead configurations〔mm〕

KB	Formed lead/bulk(04 type)
KH	Formed lead/bulk(03 type)
KR	Formed lead/bulk(02 type)
NA	Axial lead/bulk
SK	Formed lead(hair pin)/bulk(04 type)
TA	Axial lead(26mm lead space) /ammo pack(02/03 type)
TB	Axial lead(52mm lead space) /ammo pack(all types)
VA	Formed lead(hair pin) /ammo pack(02 type)
VB	Formed lead(hair pin) /ammo pack(03 type)
VD	Formed lead/ammo pack(02 type)

5 Nominal inductance〔μH〕

example	※R=decimal point
1R5	1.5
120	12

6 Inductance tolerance〔%〕

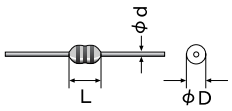
J	±5
K	±10
M	±20

7 Internal code

△△△△△	Standard product

△=Blank space

外形寸法　EXTERNAL DIMENSIONS

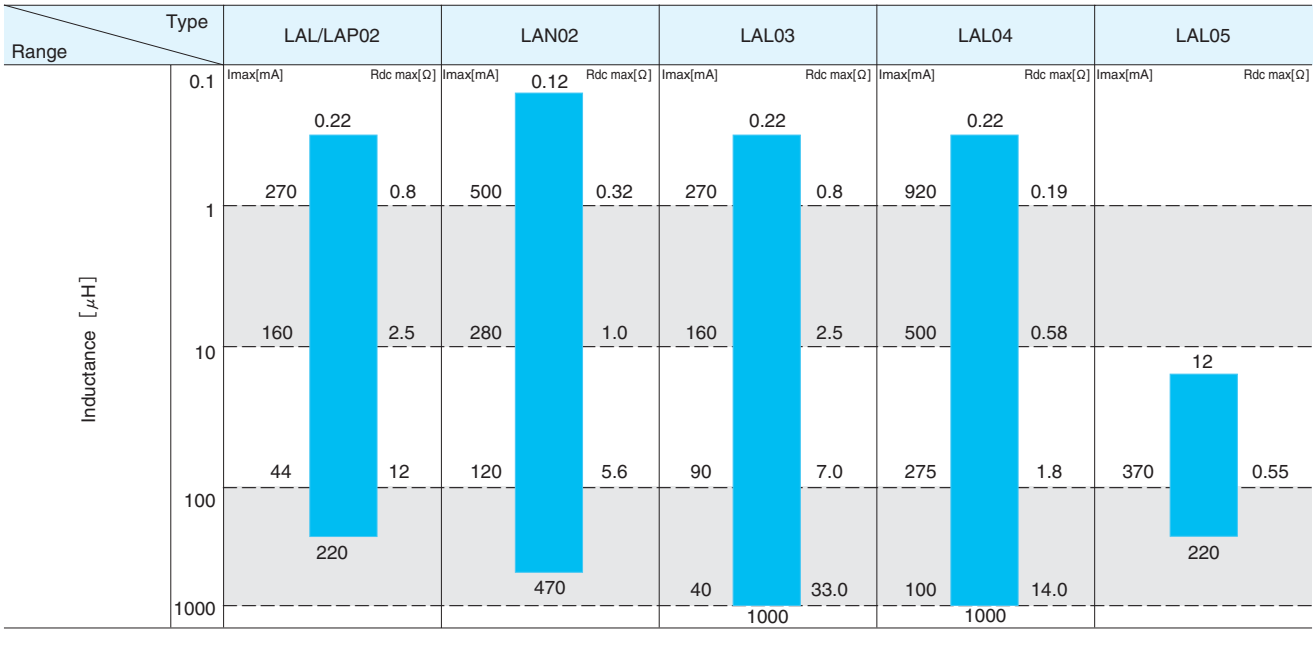


Type	Dimensions[mm](inch)			テーピング Taped		単品Bulk	
	L	ϕD	ϕd	ストレートStraight	フォーミングFormed	ストレートStraight	フォーミングFormed
LAL02	3.4max (0.134max)	2.3max (0.091max)	0.5±0.05 (0.020±0.002)	TB 52 (2.05)	VD Pitch：5mm(0.197) VA 2.5mm(0.098)	NA	—
LAP02	3.4max (0.134max)	2.3max (0.091max)	0.45±0.05 (0.018±0.002)	TA 26 (1.02)	—	—	KR Pitch：5mm (0.197)
LAN02	3.6max (0.142max)	2.4max (0.094max)					
LAL03	7.0max (0.276max)	2.6 +0.1 −0.2 (0.102 +0.004 −0.008)	※0.5±0.05 (0.020±0.002)	TA 26 (1.02) TB 52 (2.05)	VB Pitch：5mm (0.197)	NA	KH Pitch：10mm (0.394)
LAL04	9.8max (0.386max)	4.0max (0.157max)	0.65±0.05 (0.026±0.002)	TB 52 (2.05)	—	NA	SK Pitch：5mm(0.197) KB 12.5mm(0.492)
LAL05	14.0max (0.551max)	5.5max (0.217max)	0.65±0.05 (0.026±0.002)	TB 52 (2.05)	—	—	—

※VB：0.6±0.05 (0.024±0.002)

Unit：mm(inch)

概略バリエーション　AVAILABLE INDUCTANCE RANGE



代表値 Examples	Inductance	Imax [mA]	Rdcmax [Ω]	Imax [mA]	Rdcmax [Ω]	Imax [mA]	Rdcmax [Ω]	Imax [mA]	Rdcmax [Ω]	Imax [mA]	Rdcmax [Ω]
	1μH	270	0.8	500	0.32	270	0.8	920	0.19	—	
	10μH	160	2.5	280	1.0	160	2.5	500	0.58	—	
	100μH	44	12	120	5.6	90	7.0	275	1.8	370	0.55
	1000μH	—		—		40	33.0	100	14.0	—	

セレクションガイド Selection Guide ◀ P.10
アイテム一覧 Part Numbers P.296 ▶
特性図 Electrical Characteristics P.301 ▶
梱包 Packaging P.303 ▶
信頼性 Reliability Data P.336 ▶
使用上の注意 Precautions P.354 ▶
etc

LAL/LAP02

形　名 Ordering code		公　称 インダクタンス Inductance [μH]	インダクタンス 許容差 Inductance Tolerance	Q (min.)	測　定 周波数 Measuring frequency 〔MHz〕	自己共振 周 波 数 Self−resonant frequency 〔MHz〕 (min.)	直流抵抗 DC Resistance 〔Ω〕 (max.)	定格電流 Rated current 〔mA〕 (max.)
LA□02○R22K		0.22	±10%	35.0	25.2	450.0	0.40	400.0
LA□02○R27K		0.27				410.0	0.43	380.0
LA□02○R33K		0.33				360.0	0.48	370.0
LA□02○R39K		0.39				300.0	0.51	350.0
LA□02○R47K		0.47				230.0	0.56	330.0
LA□02○R56K		0.56				210.0	0.61	320.0
LA□02○R68K		0.68				190.0	0.67	310.0
LA□02○R82K		0.82				170.0	0.74	290.0
LA□02○1R0K		1.0				150.0	0.80	270.0
LA□02○1R2K		1.2		40.0	7.96	110.0	0.9	260.0
LA□02○1R5K		1.5				80.0	1.0	250.0
LA□02○1R8K		1.8				60.0	1.1	240.0
LA□02○2R2K		2.2				45.0	1.2	230.0
LA□02○2R7K		2.7				40.0	1.3	220.0
LA□02○3R3K		3.3				38.0	1.4	210.0
LA□02○3R9K		3.9				35.0	1.6	200.0
LA□02○4R7K		4.7				32.0	1.7	190.0
LA□02○5R6K		5.6				30.0	1.9	180.0
LA□02○6R8K		6.8				28.0	2.0	175.0
LA□02○8R2K		8.2				26.0	2.2	165.0
LA□02○100K		10.0				24.0	2.5	160.0
LA□02○120K		12.0			2.52	22.0	2.5	150.0
LA□02○150K		15.0				20.0	2.8	145.0
LA□02○180K		18.0				18.0	3.1	140.0
LA□02○220K		22.0				17.0	3.4	130.0
LA□02○270K		27.0				16.0	4.3	80.0
LA□02○330K		33.0				14.0	4.7	76.0
LA□02○390K		39.0				13.0	5.2	74.0
LA□02○470K		47.0				12.0	5.8	70.0
LA□02○560K		56.0				11.0	6.4	68.0
LA□02○680K		68.0				10.0	7.2	64.0
LA□02○820K		82.0				9.5	11.0	46.0
LA□02○101K		100.0				9.0	12.0	44.0
LA□02○121K		120.0			0.796	8.0	13.0	42.0
LA□02○151K		150.0				6.0	16.0	39.0
LA□02○181K		180.0				5.5	18.0	37.0
LA□02○221K		220.0				5.0	20.0	35.0

形名の□には製品区分記号(リード線径)が入ります。(L:標準0.5mm,　P:0.45mm)
形名の○にはリード加工形状記号が入ります。
□ Please specify the Product Specification(lead diameter)code. (L:standard 0.5mm or P:0.45mm)
○ Please specify the Lead configuration code.

LAN02

形　名 Ordering code		公　称 インダクタンス Inductance [μH]	インダクタンス 許容差 Inductance Tolerance	Q (min.)	測　定 周波数 Measuring frequency [MHz]	自己共振 周　波　数 Self−resonant frequency [MHz] (min.)	直流抵抗 DC Resistance [Ω] (max.)	定格電流 Rated current [mA] (max.)
LAN02○R12K		0.12	±10%	50.0	25.2	500.0	0.12	850.0
LAN02○R15K		0.15				500.0	0.14	800.0
LAN02○R18K		0.18				500.0	0.15	760.0
LAN02○R22K		0.22				500.0	0.16	730.0
LAN02○R27K		0.27				500.0	0.18	690.0
LAN02○R33K		0.33				480.0	0.19	660.0
LAN02○R39K		0.39				430.0	0.21	640.0
LAN02○R47K		0.47				380.0	0.23	610.0
LAN02○R56K		0.56				350.0	0.25	580.0
LAN02○R68K		0.68				310.0	0.27	550.0
LAN02○R82K		0.82				270.0	0.29	520.0
LAN02○1R0J		1.0	±5 %			240.0	0.32	500.0
LAN02○1R2J		1.2			7.96	210.0	0.35	480.0
LAN02○1R5J		1.5				190.0	0.38	450.0
LAN02○1R8J		1.8				140.0	0.42	430.0
LAN02○2R2J		2.2				90.0	0.47	410.0
LAN02○2R7J		2.7				70.0	0.52	390.0
LAN02○3R3J		3.3				50.0	0.57	370.0
LAN02○3R9J		3.9		40.0		35.0	0.63	360.0
LAN02○4R7J		4.7				32.0	0.69	340.0
LAN02○5R6J		5.6				30.0	0.75	320.0
LAN02○6R8J		6.8				28.0	0.84	310.0
LAN02○8R2J		8.2				26.0	0.92	290.0
LAN02○100J		10.0				24.0	1.0	280.0
LAN02○120J		12.0			2.52	22.0	1.0	280.0
LAN02○150J		15.0				20.0	1.2	265.0
LAN02○180J		18.0				18.0	1.3	250.0
LAN02○220J		22.0				17.0	1.5	235.0
LAN02○270J		27.0				15.0	1.7	220.0
LAN02○330J		33.0		50.0		14.0	2.2	180.0
LAN02○390J		39.0				13.0	2.4	170.0
LAN02○470J		47.0				12.0	2.8	160.0
LAN02○560J		56.0				10.0	4.1	140.0
LAN02○680J		68.0				9.2	4.5	130.0
LAN02○820J		82.0				8.8	5.0	125.0
LAN02○101J		100.0				8.0	5.6	120.0
LAN02○121J		120.0			0.796	6.6	9.2	90.0
LAN02○151J		150.0				5.8	10.5	85.0
LAN02○181J		180.0				5.4	11.5	80.0
LAN02○221J		220.0				4.8	13.0	75.0
LAN02○271J		270.0				3.6	16.0	70.0
LAN02○331J		330.0				3.4	18.0	66.0
LAN02○391J		390.0				3.2	20.0	63.0
LAN02○471J		470.0				3.0	22.0	60.0

形名の○にはリード加工形状記号が入ります。

○ Please specify the Lead configuration code.

LAL03

形　名 Ordering code		公　称 インダクタンス Inductance [μH]	インダクタンス 許容差 Inductance Tolerance	Q (min.)	測　定 周波数 Measuring frequency 〔MHz〕	自己共振 周 波 数 Self−resonant frequency 〔MHz〕 (min.)	直流抵抗 DC Resistance 〔Ω〕 (max.)	定格電流 Rated current 〔mA〕 (max.)
LAL03○R22M		0.22	±20%	35.0	25.2	450.0	0.40	400.0
LAL03○R27M		0.27				410.0	0.43	380.0
LAL03○R33M		0.33				360.0	0.48	370.0
LAL03○R39M		0.39				300.0	0.51	350.0
LAL03○R47M		0.47				230.0	0.56	330.0
LAL03○R56M		0.56		40.0		210.0	0.61	320.0
LAL03○R68M		0.68				190.0	0.67	310.0
LAL03○R82M		0.82				170.0	0.74	290.0
LAL03○1R0M		1.0				150.0	0.80	270.0
LAL03○1R2M		1.2		50.0	7.96	144.0	0.90	260.0
LAL03○1R5M		1.5				131.0	1.0	250.0
LAL03○1R8M		1.8				121.0	1.1	240.0
LAL03○2R2M		2.2				110.0	1.2	230.0
LAL03○2R7M		2.7				100.0	1.3	220.0
LAL03○3R3K		3.3	±10%			94.0	1.4	210.0
LAL03○3R9K		3.9				65.0	1.6	200.0
LAL03○4R7K		4.7				56.0	1.7	190.0
LAL03○5R6K		5.6				48.0	1.9	180.0
LAL03○6R8K		6.8				37.0	2.0	175.0
LAL03○8R2K		8.2				25.0	2.2	165.0
LAL03○100K		10.0				21.0	2.5	160.0
LAL03○120K		12.0			2.52	19.0	2.5	150.0
LAL03○150K		15.0				17.0	2.8	145.0
LAL03○180K		18.0				13.0	3.1	140.0
LAL03○220K		22.0				9.6	3.4	130.0
LAL03○270K		27.0				7.2	3.8	125.0
LAL03○330K		33.0				6.3	4.1	120.0
LAL03○390K		39.0				6.3	4.5	115.0
LAL03○470K		47.0				6.3	4.9	110.0
LAL03○560K		56.0				6.2	5.3	105.0
LAL03○680K		68.0				5.7	5.8	100.0
LAL03○820K		82.0				5.3	6.3	95.0
LAL03○101K		100.0				4.8	7.0	90.0
LAL03○121K		120.0			0.796	3.8	13.0	90.0
LAL03○151K		150.0				3.5	15.0	85.0
LAL03○181K		180.0				3.3	16.0	80.0
LAL03○221K		220.0				3.0	17.0	75.0
LAL03○271K		270.0				2.8	19.0	65.0
LAL03○331K		330.0				2.6	20.0	60.0
LAL03○391K		390.0				2.4	22.0	55.0
LAL03○471K		470.0				2.25	24.0	55.0
LAL03○561K		560.0				2.10	26.0	50.0
LAL03○681K		680.0				1.95	28.0	45.0
LAL03○821K		820.0				1.85	30.0	40.0
LAL03○102K		1000.0				1.40	33.0	40.0

形名の○にはリード加工形状記号が入ります。

○ Please specify the Lead configuration code.

LAL04

形　名 Ordering code		公　称 インダクタンス Inductance [μH]	インダクタンス 許容差 Inductance Tolerance	Q (min.)	測　定 周波数 Measuring frequency [MHz]	自己共振 周 波 数 Self−resonant frequency [MHz] (min.)	直流抵抗 DC Resistance [Ω] (max.)	定格電流 Rated current [mA] (max.)
LAL04○R22M		0.22	±20%	45.0	25.2	300.0	0.10	1400.0
LAL04○R27M		0.27				270.0	0.11	1320.0
LAL04○R33M		0.33				250.0	0.12	1280.0
LAL04○R39M		0.39				230.0	0.13	1200.0
LAL04○R47M		0.47				220.0	0.14	1150.0
LAL04○R56M		0.56				200.0	0.15	1100.0
LAL04○R68M		0.68				190.0	0.16	1030.0
LAL04○R82M		0.82				172.0	0.17	980.0
LAL04○1R0M		1.0				157.0	0.19	920.0
LAL04○1R2M		1.2		50.0	7.96	144.0	0.21	880.0
LAL04○1R5M		1.5				131.0	0.23	830.0
LAL04○1R8M		1.8		55.0		121.0	0.25	790.0
LAL04○2R2M		2.2				110.0	0.28	750.0
LAL04○2R7M		2.7		60.0		100.0	0.30	720.0
LAL04○3R3K		3.3	±10%	65.0		94.0	0.34	670.0
LAL04○3R9K		3.9				65.0	0.37	640.0
LAL04○4R7K		4.7		70.0		56.0	0.39	620.0
LAL04○5R6K		5.6				48.0	0.43	590.0
LAL04○6R8K		6.8		75.0		37.0	0.48	550.0
LAL04○8R2K		8.2		80.0		25.0	0.52	530.0
LAL04○100K		10.0		65.0		21.0	0.58	500.0
LAL04○120K		12.0		50.0	2.52	19.0	0.63	480.0
LAL04○150K		15.0				17.0	0.72	460.0
LAL04○180K		18.0				13.0	0.77	430.0
LAL04○220K		22.0				9.6	0.84	410.0
LAL04○270K		27.0		55.0		7.2	0.94	390.0
LAL04○330K		33.0				6.3	1.03	370.0
LAL04○390K		39.0		50.0		6.3	1.12	350.0
LAL04○470K		47.0		45.0		6.3	1.22	340.0
LAL04○560K		56.0		40.0		6.2	1.34	320.0
LAL04○680K		68.0				5.7	1.47	305.0
LAL04○820K		82.0		35.0		5.3	1.62	290.0
LAL04○101K		100.0		30.0		4.8	1.80	275.0
LAL04○121K		120.0		55.0	0.796	3.8	3.70	185.0
LAL04○151K		150.0		45.0		3.5	4.20	175.0
LAL04○181K		180.0		50.0		3.3	4.60	165.0
LAL04○221K		220.0		55.0		3.0	5.10	155.0
LAL04○271K		270.0		65.0		2.8	5.80	145.0
LAL04○331K		330.0				2.6	6.40	137.0
LAL04○391K		390.0				2.4	7.00	133.0
LAL04○471K		470.0		60.0		2.25	7.70	126.0
LAL04○561K		560.0				2.10	8.50	120.0
LAL04○681K		680.0		55.0		1.95	9.40	113.0
LAL04○821K		820.0				1.85	10.50	105.0
LAL04○102K		1000.0		50.0		1.40	14.00	100.0

形名の○にはリード加工形状記号が入ります。

○ Please specify the Lead configuration code.

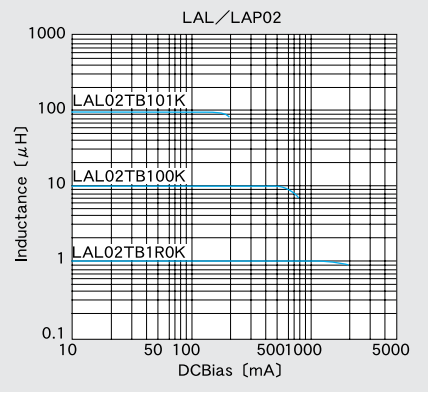
LAL05

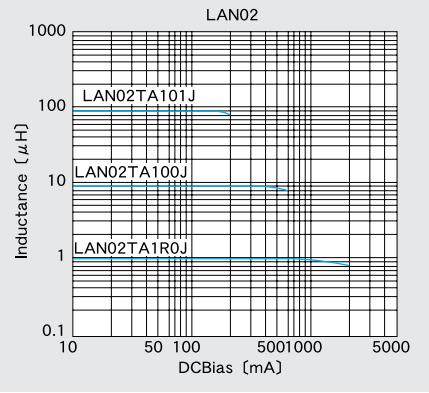
形　名 Ordering code		公　称 インダクタンス Inductance [μH]	インダクタンス 許容差 Inductance Tolerance	Q (min.)	測　定 周波数 Measuring frequency 〔MHz〕	自己共振 周　波　数 Self−resonant frequency 〔MHz〕 (min.)	直流抵抗 DC Resistance 〔Ω〕 (max.)	定格電流 Rated current 〔A〕 (max.)
LAL05○120K		12.0	±10%	30.0	2.52	11.0	0.15	1.05
LAL05○150K		15.0				10.0	0.16	1.00
LAL05○180K		18.0				9.0	0.18	0.82
LAL05○220K		22.0				8.0	0.19	0.80
LAL05○270K		27.0				7.0	0.21	0.70
LAL05○330K		33.0				6.0	0.27	0.60
LAL05○390K		39.0				5.5	0.30	0.54
LAL05○470K		47.0				5.0	0.32	0.52
LAL05○560K		56.0		20.0		4.5	0.36	0.49
LAL05○680K		68.0				4.0	0.40	0.45
LAL05○820K		82.0				3.7	0.43	0.40
LAL05○101K		100.0				3.3	0.55	0.37
LAL05○121K		120.0		30.0	0.796	3.0	1.10	0.31
LAL05○151K		150.0				2.6	1.20	0.27
LAL05○181K		180.0				2.3	1.30	0.25
LAL05○221K		220.0				2.0	1.40	0.22

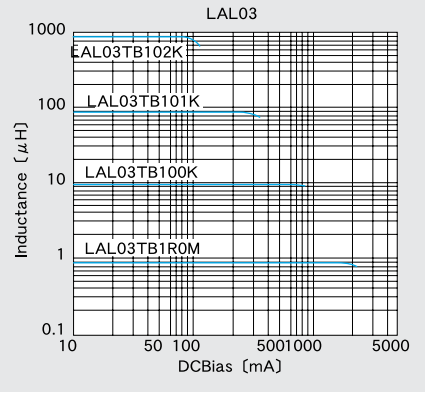
形名の○にはリード加工形状記号が入ります。

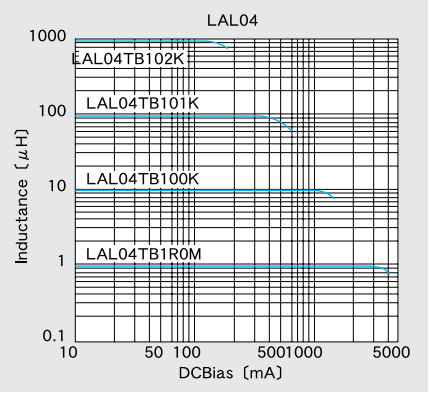
○ Please specify the Lead configuration code.

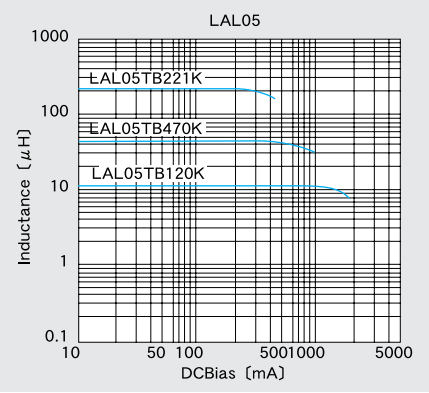
直流重量特性例　DC Bias characteristics(Measured by HP4262A)



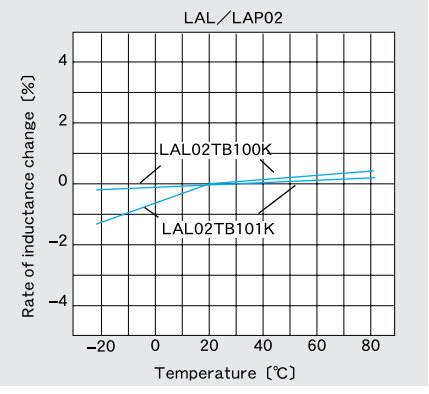


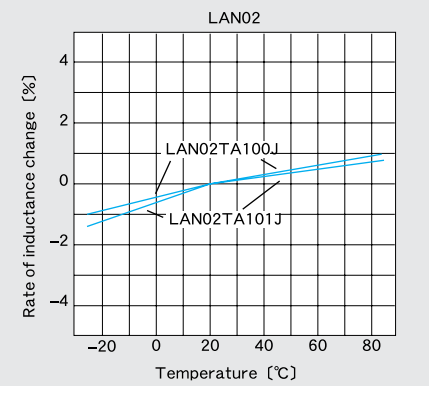


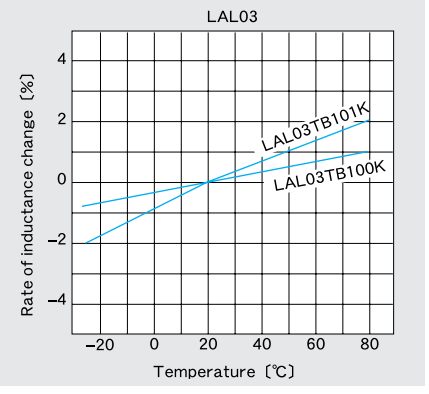


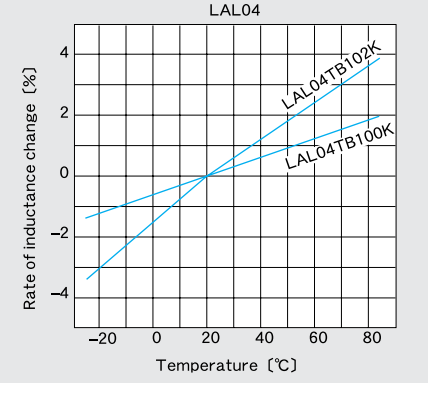


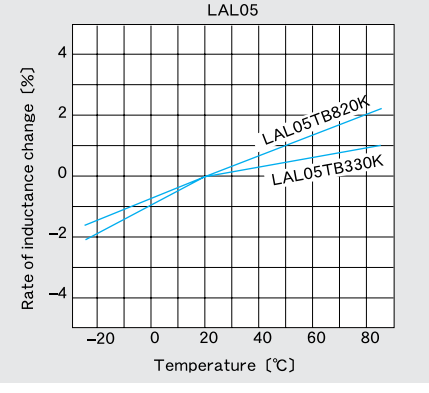
温度特性例　Temperature characteristics(Measured by HP4342A)



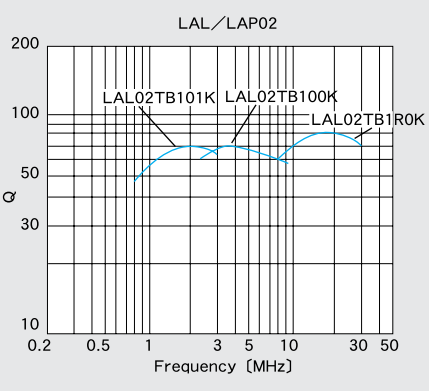


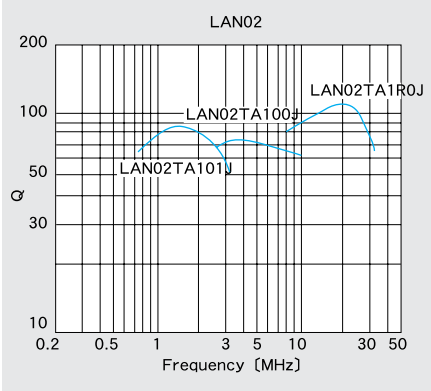


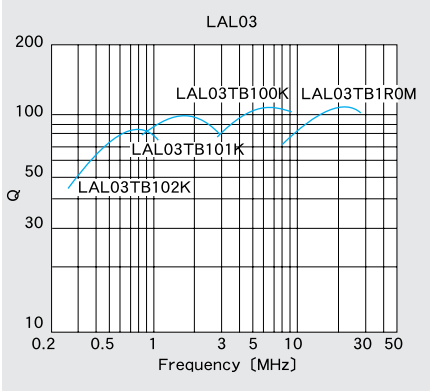


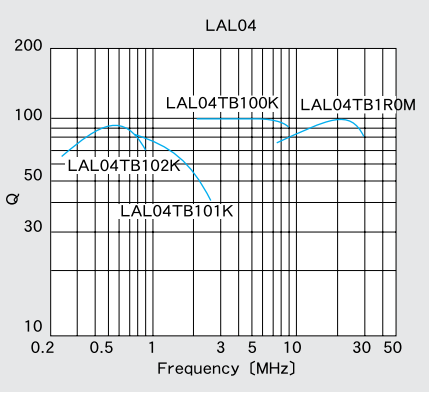


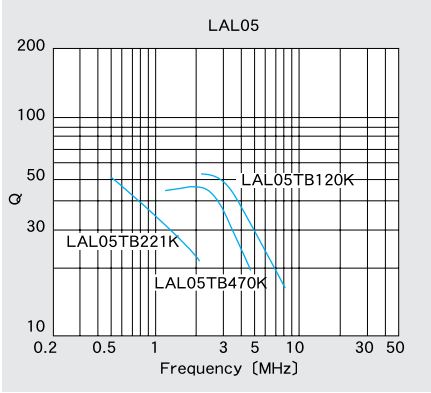
Q-周波数特性例　Q-Characteristics(Measured by HP4342A)











標準数量　Standard quantity

①アキシャルリードの横テーピング　Taping for Straight Leads

Type	リード加工記号 Lead Configuration code	標準数量(pcs.) Standard quantity
LAL02	TB	2,000
LAP02	TA	2,000
LAN02	TA	2,000
LAL03	TA・TB	2,000
LAL04	TB	2,500
LAL05	TB	2,000

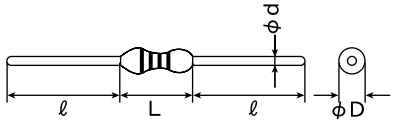
②アキシャルリードの縦テーピング　Taping for Formed Leads

Type	リード加工記号 Lead Configuration code	標準数量(pcs.) Standard quantity
LAL02	VD・VA	2,000
LAL03	VB	2,000

③バルク(袋づめ)　Bulk

Type	リード加工記号 Lead Configuration code	標準数量(pcs.) Standard quantity
LAL02	NA	500
LAP02	KR	2,000
LAN02	KR	500
LAL03	NA・KH	500
LAL04	NA・KB・SK	500

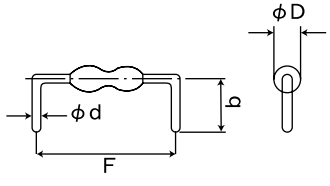
NA形状



Type	寸　法 Dimensions				最小挿入ピッチ Minimum insertion pitch
	ϕD	L	ϕd	ℓ	
LAL02	2.3max (0.091max)	3.4max (0.134max)	0.50±0.05 (0.020±0.002)	24±2.0 (0.945±0.079)	5.0 (0.197)
LAL03	$2.6^{+0.1}_{-0.2}$ $(0.102^{+0.004}_{-0.008})$	7.0max (0.276max)	0.50±0.05 (0.020±0.002)	22±2.0 (0.866±0.079)	10.0 (0.394)
LAL04	4.0max (0.157max)	9.8max (0.386max)	0.65±0.05 (0.026±0.002)	20±2.0 (0.787±0.079)	12.5 (0.492)

Unit：mm(inch)

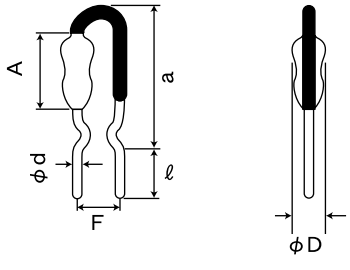
KR/KH/KB形状



Type	リード加工形状記号 Lead configuration code	寸　法 Dimensions			
		ϕD	F	ϕd	b
LAP02	KR	2.3max (0.091max)	5.0±0.5 (0.197±0.020)	0.45±0.05 (0.018±0.002)	7.0±1.0 (0.276±0.039)
LAN02	KR	2.4max (0.094max)	5.0±0.5 (0.197±0.020)	0.45±0.05 (0.018±0.002)	7.0±1.0 (0.276±0.039)
LAL03	KH	$2.6^{+0.1}_{-0.2}$ $(0.102^{+0.004}_{-0.008})$	10.0±0.5 (0.394±0.020)	0.50±0.05 (0.020±0.002)	6.5±0.5 (0.256±0.020)
LAL04	KB	4.0max (0.157max)	12.5±1.0 (0.492±0.039)	0.65±0.05 (0.026±0.002)	6.0±0.5 (0.236±0.020)

Unit：mm(inch)

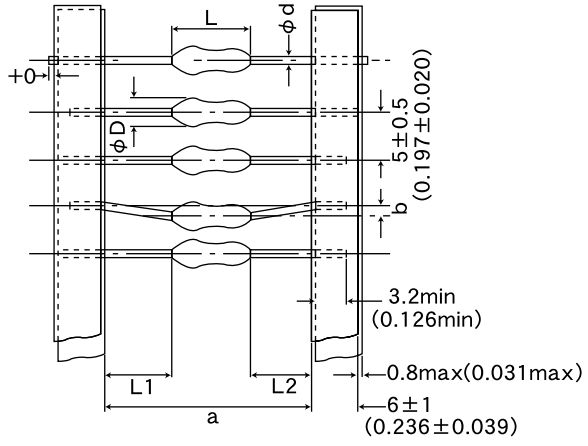
SK形状



Type	寸　法 Dimensions					
	A	a	ϕD	F	ϕd	ℓ
LAL04	9.8max (0.386max)	14.0max (0.551max)	4.0max (0.157max)	5.0±1.5 (0.197±0.059)	0.65±0.05 (0.026±0.002)	6.0±1.0 (0.236±0.039)

Unit：mm(inch)

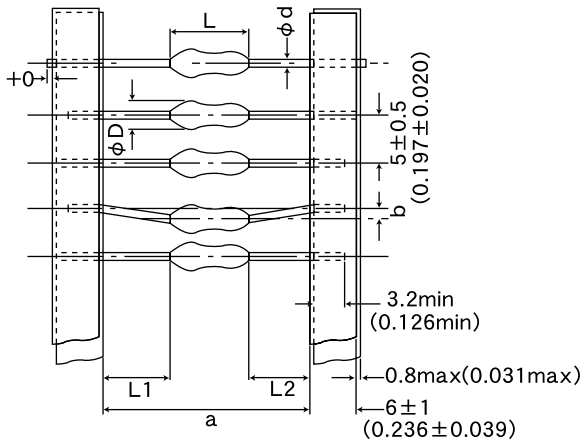
TA (a：26mm lead space)形状
(1.02 inch)



Type	寸　法 Dimensions						最小挿入ピッチ Minimum insertion pitch
	φD	L	a	b	$\lvert L_1-L_2 \rvert$	φd	
LAP02	2.3max (0.091max)	3.4max (0.134max)	$26^{+0.5}_{-0}$ $(1.02^{+0.020}_{-0})$	0.8max (0.031max)	0.5max (0.020max)	0.45±0.05 (0.018±0.002)	5.0 (0.197)
LAN02	2.4max (0.094max)	3.6max (0.142max)	$26^{+0.5}_{-0}$ $(1.02^{+0.020}_{-0})$	0.8max (0.031max)	0.5max (0.020max)	0.45±0.05 (0.018±0.002)	5.0 (0.197)
LAL03	$2.6^{+0.1}_{-0.2}$ $(0.102^{+0.004}_{-0.008})$	7.0max (0.276max)	$26^{+1}_{-0.5}$ $(1.02^{+0.039}_{-0.020})$	0.8max (0.031max)	1.0max (0.039max)	0.5±0.05 (0.020±0.002)	10.0 (0.394)

Unit：mm(inch)

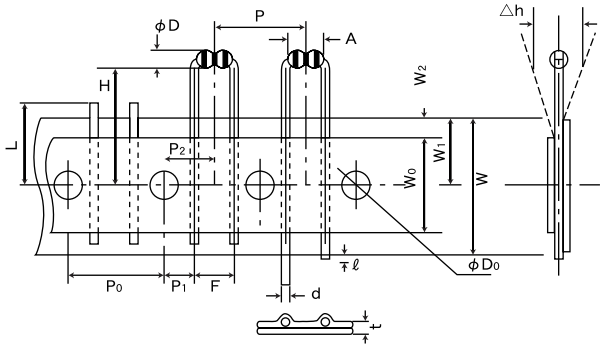
TB (a：52mm lead space)形状
(2.05 inches)



Type	寸　法 Dimensions						最小挿入ピッチ Minimum insertion pitch
	φD	L	a	b	$\lvert L_1-L_2 \rvert$	φd	
LAL02	2.3max (0.091max)	3.4max (0.134max)	52^{+2}_{-1} $(2.05^{+0.079}_{-0.039})$	1.2max (0.047max)	1.0max (0.039max)	0.5±0.05 (0.020±0.002)	5.0 (0.197)
LAL03	$2.6^{+0.1}_{-0.2}$ $(0.102^{+0.004}_{-0.008})$	7.0max (0.276max)	52^{+2}_{-1} $(2.05^{+0.079}_{-0.039})$	1.2max (0.047max)	1.0max (0.039max)	0.5±0.05 (0.020±0.002)	10.0 (0.394)
LAL04	4.0max (0.157max)	9.8max (0.386)	52^{+2}_{-1} $(2.05^{+0.079}_{-0.039})$	1.2max (0.047max)	1.0max (0.039max)	0.65±0.05 (0.026±0.002)	12.5 (0.492)
LAL05	5.5max (0.217max)	14.0max (0.551)	52^{+2}_{-1} $(2.05^{+0.079}_{-0.039})$	1.2max (0.047max)	1.0max (0.039max)	0.65±0.05 (0.026±0.002)	17.5 (0.689)

Unit：mm(inch)

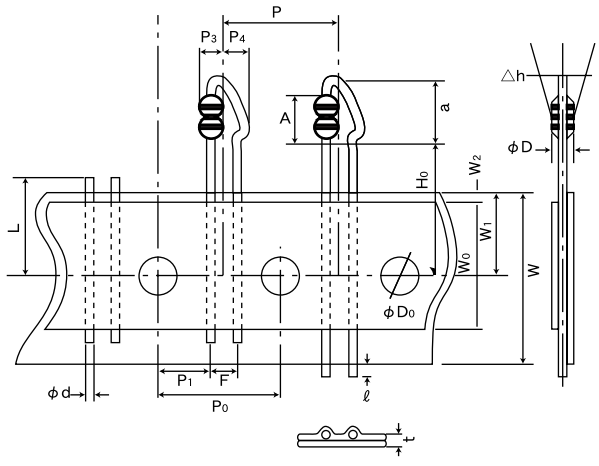
VD形状



Type	記号 Symbol	寸　法 Dimensions	記号 Symbol	寸　法 Dimensions
LAL02	A	3.9max (0.154max)	W	$18.0^{+1.0}_{-0.5}$ ($0.709^{+0.039}_{-0.020}$)
	φD	2.3max (0.091max)	W_0	12.5min (0.492min)
	H	19.5±0.5 (0.768±0.020)	W_1	$9.0^{+0.75}_{-0.5}$ ($0.354^{+0.030}_{-0.020}$)
	P	12.7±1.0 (0.500±0.039)	W_2	3.0max (0.118max)
	P_0	12.7±0.3 (0.500±0.012)	ℓ	2.0max (0.079max)
	P_1	3.85±0.7 (0.152±0.028)	ϕD_0	4.0±0.3 (0.157±0.012)
	P_2	6.35±0.5 (0.250±0.020)		
	F	5.08±0.5 (0.200±0.020)	φd	0.50±0.05 (0.020±0.002)
	△h	0±1.0 (0±0.039)	L	11.0max (0.433max)
	—	—	t	0.5±0.2 (0.020±0.008)

Unit：mm(inch)

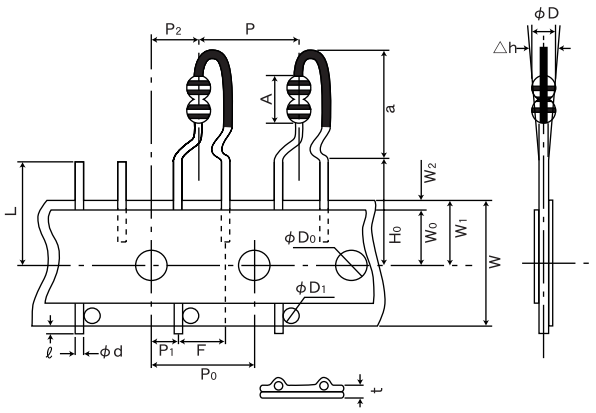
VA形状



Type	記号 Symbol	寸　法 Dimensions	記号 Symbol	寸　法 Dimensions
LAL02	A	3.9max (0.154max)	W	$18.0^{+1.0}_{-0.5}$ ($0.709^{+0.039}_{-0.020}$)
	a	6.5max (0.256max)	W_0	12.5min (0.492min)
	φD	2.3max (0.091max)	W_1	$9.0^{+0.75}_{-0.5}$ ($0.354^{+0.030}_{-0.020}$)
	H_0	16.0±1.0 (0.630±0.039)	W_2	3.0max (0.118max)
	P	12.7±1.0 (0.500±0.039)	ℓ	2.0max (0.079max)
	P_0	12.7±0.3 (0.500±0.012)	ϕD_0	4.0±0.3 (0.157±0.012)
	P_1	5.1±0.7 (0.201±0.028)	φd	0.50±0.05 (0.020±0.002)
	P_2	6.35±0.5 (0.250±0.020)		
	P_3	3.0max (0.118max)	L	11.0max (0.433max)
	P_4	3.0max (0.118max)		
	F	2.5±0.5 (0.098±0.020)	t	0.5±0.2 (0.020±0.008)
	△h	0±1.0 (0±0.039)	—	—

Unit：mm(inch)

VB形状



Type	記号 Symbol	寸　法 Dimensions	記号 Symbol	寸　法 Dimensions
LAL03	A	7.0max (0.276max)	W	$18.0^{+1.0}_{-0.5}$ ($0.709^{+0.039}_{-0.020}$)
	a	12.5max (0.492max)	W_0	12.5min (0.492min)
	ϕD	2.7max (0.106max)	W_1	$9.0^{+0.75}_{-0.5}$ ($0.354^{+0.030}_{-0.020}$)
	H_0	16.0±0.5 (0.630±0.020)	W_2	3.0max (0.118max)
	P	12.7±1.0 (0.500±0.039)	ℓ	1.0max (0.039max)
	P_0	12.7±0.3 (0.500±0.012)	ϕD_0	4.0±0.2 (0.157±0.008)
	P_1	3.85±0.7 (0.152±0.028)	ϕD_1	3.5max (0.138max)
	P_2	6.35±1.0 (0.250±0.039)	ϕd	0.60±0.05 (0.024±0.002)
	F	5.0±1.0 (0.197±0.039)	L	11.0max (0.433max)
	△h	0±2.0 (0±0.079)	t	0.7±0.2 (0.028±0.008)

Unit：mm(inch)

Item	Specified Value								Test Method and Remarks
	LA02 Type/ LA03 Type	LA04 Type	LA05 Type	LHL□□□/ LHF15BB/ LHFP□□BB	FBA/FBR	LAV35	FL05□ Type	FL06BT Type	
1.Operating temperature Range	−25～+105℃				−25～+85℃	−25～+105℃			LA・FL： Including self-generated heat LHL・LHF・LHFP： Including self-generated heat [LHL□□□, LHF15BB]
2.Storage temperature Range	−40～+85℃								
3.Rated current	Within the specified tolerance								LA： The maximum DC value having inductance within 10% and temperature incease within 20℃ by the application of DC bias. LHL・LHF・LHFP・LAV35： The maximum DC value having inductance decrease within 10% and temperature incease within the following specified temperature by the application of DC bias. 規定温度：20℃(LHL06, LAV35) ：25℃(LHL08, LHL10, LHL13) ：30℃(LHLC06, LHLZ06, LHL16, LHF15BB, LHFP□□BB) FB： No disconnection or appearance abnormaliry by continuous current application for 30 min. Chage after the application shall be within ±20% of the initial value.This is not guaranteed for electrial characteristics during current application. FL： The maximum DC value having temperature rise within specified value.
4.Impedance					Within the specified tolerance			Refer to individual specification	FB： Measuring equipment：Impedance analyzer (HP4191A)or its equivalent Measuring frequency：Specified frequency FL06BT： Measuring equipment：4291A (HP) or its equivalent Measuring frequency：Specified frequency
5. Inductance	Within the specified tolerance					Within the specified tolerance			LA： Measuring equipment：LCR meter(HP4285A＋HP42851A or its equivalent) Measuring frequency：Specified frequency LHL・LHF・LHFP： Measuring equipment：Q meter(HP4285A+HP42851A or its equivalent) LCR meter(HP4262A) or its equivalent(at 1KHz) Measuring frequency：Specified frequency LAV35： Measuring equipment：Q meter(HP4285A+HP42851A or its equivalent) Measuring frequency：Specified frequency FL05R□： Measuring equipment：HP4262A or its equivalent. Measuring frequency：1kHz

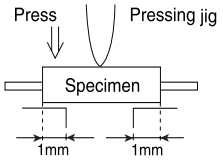
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<tr><th rowspan="2">Item</th><th colspan="8">Specified Value</th><th rowspan="2">Test Method and Remarks</th></tr>
<tr><th>LA02 Type/
LA03 Type</th><th>LA04 Type</th><th>LA05 Type</th><th>LHL□□□/
LHF15BB/
LHFP□□BB</th><th>FBA/FBR</th><th>LAV35</th><th>FL05□
Type</th><th>FL06BT
Type</th></tr>
<tr><td>6.Q</td><td colspan="4">Within the specified tolerance</td><td></td><td>Within the specified tolerance</td><td></td><td></td><td>LA：
Measuring equipment：LCR meter(HP4285A+HP42851A or its equivalent)
Measuring frequency：Specified frequency

LHL・LHF・LHFP・LAV35：
Measuring equipment：Q meter(HP4285A+HP42851A or its equivalent)
Q meter(HP4342A)or its equivalent
Measuring frequency：Specified frequency</td></tr>
<tr><td>7.DC Resisitance</td><td colspan="8">Within the specified tolerance</td><td>LA：
Measuring equipment：low ohmmeter (A&D AD5812 or its equivalent)

LHL・LHF・LHFP・FB・LAV35・FL：
Measuring equipment：DC ohmmetr</td></tr>
<tr><td>8.Self resonance frequency</td><td colspan="4">Within the specified tolerance</td><td></td><td>Within the specified tolerance</td><td></td><td></td><td>LA：
Measuring equipment：Network analyzer(Anritsu MS620J or its equivalent)

LHL・LHF・LHFP・LAV35：
Measuring equipment：(HP4191A, 4192A) its equivalent</td></tr>
<tr><td>9.Temperature characteristic</td><td colspan="3">△L/L：Within±5%</td><td>△L/L：
Within±7%</td><td></td><td>△L/L：
Within±5%</td><td></td><td></td><td>LA：
Change of maximum inductance deviation in step 1to5
<table><tr><th>step</th><th>Temperature(℃)</th></tr><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 (Standard temperature)</td></tr><tr><td>4</td><td>+85 (Maximum operating temperature)</td></tr><tr><td>5</td><td>20</td></tr></table>
LHL・LHF・LHFP・LAV35：
[LHL□□□, LHF15BB, LAV35, LHFP□BB]
Change of maximum inductance deviation in step 1to5
Temperature at step 1：20℃
Temperature at step 2：Minimum operating temperature
Temperature at step 3：20℃ (Standard temperature)
Temperature at step 4：Maximum operating temperature
Temperature at step 5：20℃</td></tr>
</table>

Item	Specified Value								Test Method and Remarks
	LA02 Type/ LA03 Type	LA04 Type	LA05 Type	LHL□□□/ LHF15BB/ LHFP□□BB	FBA/FBR	LAV35	FL05□ Type	FL06BT Type	
10.Terminal strength : tensile force	No abnormality such as cut lead, or looseness.				No abnormality such as cut lead, or looseness.	No abnormality such as cut lead,or looseness.			LA : Apply the stated tensile force progressively in the direction to draw terminal. force(N): 25, duration(S): 5 LHL・LHF・LAV・LHFP : Apply the stated tensile force progressively in the direction to draw terminal. Nominal wire diameter tensile φd(mm) / force (N) / duration(S): 0.3<φd≦0.5 : 5 0.5<φd≦0.8 : 10 0.8<φd≦1.2 : 25 duration(S): 30±5 FBA : 本体を固定し、端子方向に20±1Nの引張力を10±1秒間加える。 FL05R□ : Fix the component in the direction to draw terminal,and gradually apply the tensile force of 4.9 N.
11.Over current				There shall be no scorch or short of wire.					LHL・LHF・LHFP : Measuring current : Rated current×2 Duration : 5min. Number of measuring : one time
12.Terminal strength : bending	No abnormality such as cut lead, or looseness.								LA : Suspend a mass at the end the terminal, incline the body though angel of 90 and return it to initial position.This operation is done over a period of 2-3 sec.Then second bend in the opposite direction shall be made. Number of bends : Two times. Nominal wire diameter tensile φd(mm) / Bending force (N) / Mass reference weight (kg): 0.3<φd≦0.5 : 2.5 : 0.25 0.5<φd≦0.8 : 5 : 0.50 LH・FB・LAV : Suspend a mass at the end the terminal, incline the body though angel of 90 and return it to initial position.This operation is done over a period of 2-3 sec.Then second bend in the opposite direction shall be made. Number of bends : Two times. Nominal wire diameter tensile φd(mm) / Bending force (N) / Mass reference weight (kg): 0.3<φd≦0.5 : 2.5 : 0.25 0.5<φd≦0.8 : 5 : 0.5 0.8<φd≦1.2 : 10 : 1.0
13.Insulation resisitance : between the terminals and body				100MΩ min.					LHL・LHF : Applied voltage : 500 VDC Duration : 60 sec.
14.Insulation resistance : between terminals and core					1MΩ min. (Other than material code MA)				FBA・FBR : Applied voltage : 100 VDC Duration : 60±5 sec.
15.Withstanding : between the terminals and body				No abnormality such as insulation damage					〔LHL□□□, LHF15BB〕 Accoding to JIS C5102. 7. 1. 3 (C) Metal global method Applied voltage : 500 VDC Duration : 60 sec.

Item	Specified Value								Test Method and Remarks
	LA02 Type/ LA03 Type	LA04 Type	LA05 Type	LHL□□□/ LHF15BB/ LHFP□□BB	FBA/FBR	LAV35	FL05□ Type	FL06BT Type	
16.DC bias characteristic	△L/L：Within −10%					△L/L：−10% Within			LA・LAV35： Measure inductance with appliation of rated current using LCR meter to compare it with the initial value.
17.Body strength	No abnormality as damage.				No significant damage such as cracks on body.	No abnormality as damage.			LA02・LAV35： Applied force：30N Duration：10 sec. Speed：Shall attain to specified force in 2 sec. LA03・LA04・LA05： Applied force：50N Duration：10 sec. Speed：Shall attain to specified force in 2 sec. FB： Applied force：50±3N Duration：30±1 sec. 
18.Resisitance to vibration	△L/L：Within±5% Q：30min.	△L/L：Within±5% △Q/Q：Within±10%	△L/L：Within±5% Q：15min.	Appearance：No abnomality △L/L：Within±5% Q change：Within±30%	Appearance：No abnomality Impedance change：Within±20%	△L/L：Within±5% Q：30min.			LA： Accoding to JIS C5102 8. 2 Vibaration type：A Directions：2 hrs each in X, Y and Z directions total：6hrs. Frequency range：10 to 55 to 10Hz(1min.) Amplitude：1.5mm Mounting method：Soldering onto printed board. Recovery：At least 1hr of recovery under the standard condition after the test, followed by the measurement within 2hrs. LHL・LHF・LHFP・FB・LAV： Accoding to JIS C0040 Vibaration type：A Directions：2 hrs each in X, Y and Z directions total：6hrs. Frequency range：10 to 55 to 10Hz(1min.) Amplitude：1.5mm (But don't exceed acceleration 196m/s (two power) Mounting method：Soldering onto printed board.

Item	Specified Value								Test Method and Remarks
	LA02 Type/ LA03 Type	LA04 Type	LA05 Type	LHL□□□/ LHF15BB/ LHFP□□BB	FBA/FBR	LAV35	FL05□ Type	FL06BT Type	
19.Resistance to shock	No significant abnormality in appearance					No significant abnormality in appearance			LA・LAV35： Drop test Impact material：concrete or vinyl tile Height：1m Total number of drops：10 times
20.Solderability	At least 75% of terminal electrode is coverd by new solder.			At least 75% of lead circu, ference is covered by new solder.	At least 90% of lead circu, ference is covered by new solder.	At least 75% of lead circu, ference is covered by new solder.			LA： Solder temperature：230±5℃ Duration：2±0.5 sec. LHL・LHF・LHFP： Solder temperature：235±5℃ Duration：2±0.5 sec. Immersion depth：Up to 1.5mm from bottom of kinked part. [LHL06, LHLC06, LHLZ06] ：Up to 1.5mm from bottom of case. [LHL08, LHL10, LHL13, LHL16] ：Up to 1.5mm from bottom of base. [LHF15BB, LHFP□□BB] FB： Solder temperature：230±5℃ Duration：3±1 sec. Immersion depth：Up to 1.5mm from terminal root. LAV35： Solder temperature：230±5℃ Duration：2±0.5 sec. FL05R□： Solder temperature：230±5℃ Duration：2±0.5 sec. Immersion depth：Up to 2～2.5mm from terminal root. FL06BT： Solder temperature：230±5℃ Duration：3±1 sec. Immersion depth：Up to 0.5～1.0mm from terminal root.

Item	Specified Value								Test Method and Remarks
	LA02 Type/ LA03 Type	LA04 Type	LA05 Type	LHL□□□/ LHF15BB/ LHFP□□BB	FBA/FBR	LAV35	FL05□ Type	FL06BT Type	
21.Resisitance to soldering heat	No significant abnormality in appearance		△L/L：Within ±5% Q：15min.	No significant abnormality in appearance Inductance change：Within±5% Q change：Within±30%	No significant abnormality in appearance Impedance change：Within±20%	△L/L：Within±5% Q：30min.	Refer to individual specification	No significant abnormality in appearance Impedance change：Within±20%	LA： Solder temperature：260±5℃(LA02) 270±5℃(LA03・LA04・LA05) Duration：5±0.5 sec. One time Immersed conditions：Inserted into substrate with t = 1.6mm Recovery：At least 1hr of recovery under the standard condition after the test, followed by the measurement within 2hrs. LHL・LHF・LHFP： Solder bath method Solder temperature：260±5℃ Duration：10±1 sec. ：Up to 1.5mm from bottom of kinked part. [LHL06, LHLC06, LHLZ06] ：Up to 1.5mm from bottom of case. [LHL08, LHL10, LHL13, LHL16] ：Up to 1.5mm from bottom of base. [LHF15BB, LHFP□□BB] Manual soldering Solder temperature：350±10℃(At the tip of soldering iron) Duration：5±1 sec. ：Up to 1.5mm from bottom of kinked part. [LHL06, LHLC06, LHLZ06] ：Up to 1.5mm from bottom of case. [LHL08, LHL10, LHL13, LHL16] ：Up to 1.5mm from bottom of base. [LHF15BB, LHFP□□BB] Caution：No excessive pressing shall be applied to terminald Recovery：4 to 24hrs of recovery under the standard condition after the tset. FB： Solder bath method Condition 1 Solder temperature：260±5℃ Duration：10±1 sec. Immersion depth：Up to 1.5mm from terminal root. Condition 2 Solder temperature：350±5℃ Duration：3±1 sec. Immersion depth：Up to 1.5mm from terminal root. Recovery：3hrs of recovery under the standard condition after the test. LAV35： Solder temperature：260±5℃ Duration：5±0.5 sec. Immersion depth：Up to 2.0 to 2.5mm from botoom of kinked part. Recovery：4 to 24hrs of recovery under the standard condition after the tset. FL： Solder condition：260±5℃ 10±1 sec. Immersion depth：Up to 0.5 to 1.0mm from terminal root. Recovery：3hrs of recovery under the standard condition after the test.

<table>
<tr><th rowspan="2">Item</th><th colspan="8">Specified Value</th><th rowspan="2">Test Method and Remarks</th></tr>
<tr><th>LA02 Type/
LA03 Type</th><th>LA04 Type</th><th>LA05 Type</th><th>LHL□□□/
LHF15BB/
LHFP□□BB</th><th>FBA/FBR</th><th>LAV35</th><th>FL05□
Type</th><th>FL06BT
Type</th></tr>
<tr><td>22.Resisitance to solvent</td><td colspan="3">Pleasa avoid the ultrasonic cleaning of this product.</td><td></td><td>No significant abnormality in appearance
Impedance change：
Within±20%</td><td>Please avoid the ultrasonic cleaning of this product.</td><td></td><td></td><td>FB：
Solvent temperature：20～25℃
Duration：30±5 sec.
Solvent type：Acetone, trichloroethylene
Recovery：3hrs of recovery under the standard condition after the test.</td></tr>
<tr><td>23.Thermnal shock</td><td>△L/L：
Within±10%
Q：30min.</td><td>△L/L：
Within±10%
△Q/Q：
Within±30%</td><td>△L/L：
Within±10%
Q：15min.</td><td>Appearance：
No abnormality
Inductance change：
Within±10%
Q change：
Within±30%</td><td>Appearance：
No abnormality
Impedance change：
Within±20%</td><td>△L/L：
Within±10%
Q：20min.</td><td>Refer to individual specification</td><td>Appearance：
No abnormality
Impedance change：
Within±20%</td><td>LA：
Conditions for 1cycle
<table>
<tr><th>Step</th><th>Temperature(℃)</th><th>Duration(min)</th></tr>
<tr><td>1</td><td>-25^{+0}_{-3}</td><td>30±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±3</td></tr>
<tr><td>4</td><td>Room temperature</td><td>Within 3</td></tr>
</table>
Number of cycles：5 cycles
Recovery：At least 1hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2hrs.

LHL・LHF・FB：
Accoding to JIS C0025
Conditions for 1 cycle
<table>
<tr><th>Step</th><th>Temperature(℃)</th><th>Duration(min)</th></tr>
<tr><td>1</td><td>Minimum operating temperature $^{+0}_{-3}$</td><td>30±3</td></tr>
<tr><td>2</td><td>Room temperature</td><td>Within 3</td></tr>
<tr><td>3</td><td>Maximum oparating temperature $^{+2}_{-0}$</td><td>30±3</td></tr>
<tr><td>4</td><td>Room temperature</td><td>Within 3</td></tr>
</table>
Number of cycles：10 cycles
〔LHL□□□, LHF□□BB, LHF15BB〕
：5 cycles(FBA, FBR)
Recovery：4 to 24hrs of recovery under the standard condition after the removal from the test cfamber.
〔LHL□□□, LHF□□BB, LHF15BB〕
：3hrs of recovery under the standard condition after the removal from the test cfamber.(FBA, FBR)

LAV：
Conditions for 1 cycle
<table>
<tr><th>Step</th><th>Temperature(℃)</th><th>Duration(min)</th></tr>
<tr><td>1</td><td>Minimum operating temperature $^{+0}_{-3}$</td><td>30±3</td></tr>
<tr><td>2</td><td>Room temperature</td><td>Within 3</td></tr>
<tr><td>3</td><td>Maximum oparating temperature $^{+2}_{-0}$</td><td>30±3</td></tr>
<tr><td>4</td><td>Room temperature</td><td>Within 3</td></tr>
</table>
Number of cycles：10 cycles
Recovery：At least 1hr of recovery under the standard condition after the removal from test chamber, followed by the measurement within 2hrs.

FL：
Accoding to JIS C0025
Conditions for 1 cycle
<table>
<tr><th>Step</th><th>Temperature(℃)</th><th>Duration(min)</th></tr>
<tr><td>1</td><td>-25^{+0}_{-3}</td><td>30±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±3</td></tr>
<tr><td>4</td><td>Room temperature</td><td>Within 3</td></tr>
</table>
Number of cycles：10 cycles
Recovery：1 to 2hrs of recovery under the standard condition after the removal from the test cfamber.</td></tr>
</table>

Item	Specified Value								Test Method and Remarks
	LA02 Type/ LA03 Type	LA04 Type	LA05 Type	LHL□□□/ LHF15BB/ LHFP□□BB	FBA/FBR	LAV35	FL05□ Type	FL06BT Type	
24.Damp heat	△L/L：Within±10% Q：30min.	△L/L：Within±10% △Q/Q：Within±30%	△L/L：Within±10% Q：15min.		Appearance：No abnormality Impedance change：Within±20%	△L/L：Within±10% Q：20min.			LA・LAV35： Temperature：40±2℃ Humidity：90～95%RH Duration：1000 hrs Recovery：At least 1hr of recovery under the standard removal from test chamber, followed by the measurement within 2hrs. FB： Temperature：60±2℃ Humidity：90～95%RH Duration：1000 hrs Recovery：1 to 2hrs of recovery under the standard condition after the removal from the test cfamber.
25.Loading under damp heat	△L/L：Within±10% Q：30min.	△L/L：Within±10% △Q/Q：Within±30%	△L/L：Within±10% Q：15min.	Appearance：No abnormality Imductance change：Within±10% Q change：Within±30%		△L/L：Within±10% Q：20min.	Refer to individual specification	Appearance：No abnormality Impedance change：Within±20%	LA・LAV35： Temperature：40±2℃ Humidity：90～95%RH Duration：1000 hrs Applied current：Rated current Recovery：At least 1hr of recovery under the standard removal from test chamber, followed by the measurement within 2hrs. LHL・LHF・LHFP： Temperature：40±2℃ Humidity：90～95%RH Duration：1000±24 hrs Applied current：Rated current Recovery：1 to 2hrs of recovery under the standard condition after the removal from the test cfamber. FL： Temperature：60±3℃ Humidity：90～95%RH Duration：500 (+12, −0)hrs Applied current：Rated current Recovery：1 to 2hrs of recovery under the standard condition after the removal from the test cfamber.
26.Loading at high temperature	△L/L：Within±10% Q：30min.	△L/L：Within±10% △Q/Q：Within±30%	△L/L：Within±10% Q：15min.			△L/L：Within±10% Q：20min.			LA・LAV35： Temperature：85±2℃ Duration：1000 hrs Applied current：Rated current Recovery：At least 1hr of recovery under the standard removal from test chamber, followed by the measurement within 2hrs.

Item	Specified Value								Test Method and Remarks
	LA02 Type/ LA03 Type	LA04 Type	LA05 Type	LHL□□□/ LHF15BB/ LHFP□□BB	FBA/FBR	LAV35	FL05□ Type	FL06BT Type	
27.Low temperature life test	△L/L： Within±10% Q：30min.	△L/L： Within±10% △Q/Q： Within±30%	△L/L： Within±10% Q：15min.	Appearance： No abnormality Inductance change： Within±10% Q change： Within±30%		△L/L： Within±10% Q：20min.	Refer to individual specification	Appearance： No abnormality Impedance change： Within±20%	LA： Temperature：−25±2℃ Duration：1000 hrs Recovery：At least 1hr of recovery under the standard removal from test chamber, followed by the measurement within 2hrs. LHL・LHF・LHFP： Temperature：−40±3℃ Duration：1000±24 hrs Recovery：1 to 2hrs of recovery under the standard condition after the removal from the test cfamber. LAV35： Temperature：−40±3℃ Duration：1000 hrs Recovery：At least 1hr of recovery under the standard removal from test chamber, followed by the measurement within 2hrs. FL： Temperature：−40±3℃ Duration：500(+12, −0)hrs Recovery：1 to 2hrs of recovery under the standard condition after the removal from the test cfamber.
28.High temperature life test				Appearance： No abnormality Inductance change： Within±10% Q change： Within±30%			Refer to individual specification	Appearance： No abnormality Impedance change： Within±20%	LHL・LHF・LHFP： Temperature：105±3℃ Duration：1000±24 hrs Recovery：1 to 2hrs of recovery under the standard condition after the removal from the test cfamber. FL： Temperature：85±3℃ Duration：500(+12, −0)hrs Recovery：1 to 2hrs of recovery under the standard condition after the removal from the test cfamber.

LA Type, LH Type, FB Type, FL Type

Stages	Precautions	Technical considerations
1.Circuit Design	Operating environment, 1.The products described in this specification are intended for use in general electronic equipment,(office supply equipment, telecommunications systems, measuring equipment, and household equipment). They are not intended for use in mission-critical equipment or systems requiring special quality and high reliability (traffic systems, safety equipment, aerospace systems, nuclear control systems and medical equipment including life-support systems,) where product failure might result in loss of life, injury or damage. For such uses, contact TAIYO YUDEN Sales Department in advance.	
2.PCB Design	Design 1.Please design insertion pitches of a base in the pitches that fitted a terminal interval.	1.When Inductors are mounted onto a PC board, hole dimensions on the board should match the lead pitch of the component, if not, it will cause breakage of the terminals or cracking of terminal roots covered with resin as excess stress travels through the terminal legs.
3.Considerations for automatic placement	Adjustment of mounting machine 1.Excessive impact load should not be imposed on the products when mounting onto the PC boards. 2.Mounting and soldering conditions should be checked beforehand.	1. When installing products, care should be taken not to apply distortion stress as it may deform the products.
4.Soldering	Wave soldering 1.Please refer to the specifications in the catalog for a wave soldering. 2.Do not immerse the entire Inductors in the flux during the soldering operation. Lead free soldering 1.When using products with lead free soldering, we request to use them after confirming of adhesion, temperature of resistance to soldering heat, soldering etc sufficiently. Recommended conditions for using a soldering iron: Put the soldering iron on the land-pattern. Soldering iron's temperature - Below 350 ℃ Duration - 3 seconds or less The soldering iron should not directly touch the inductor.	1.If products are used beyond the range of the recommended conditions, heat stresses may deform the products, and consequently degrade the reliability of the products.
5.Cleaning	Cleaning conditions 1.LA type, LH type Please do not do cleaning by a supersonic wave.	LA type, LH type 1.If washing by supersonic waves, supersonic waves may deform products.
6.Handling	Handling 1.Keep the inductors away from all magnets and magnetic objects. Mechanical considerations 1.Please do not give the inductors any excessive mechanical shocks. 2.LH type If inductors are dropped onto the floor or a hard surface they should not be used. Packing 1.Please do not give the inductors any excessive mechanical shocks. In loading, please pay attention to handling indication mentioned in a packing box (a loading direction / number of maximum loading / fragile item).	1.There is a case that a characteristic varies with magnetic influence. 1.There is a case to be damaged by a mechanical shock. 2.LH type There is a case to be broken by a fall. 1.There is a case that a lead route turns at by a fall or an excessive shock.
7.Storage conditions	Storage Storage 1.To maintain the solderability of terminal electrodes and to keep the packing material in good condition, temperature and humidity in the storage area should be controlled.. ・Recommended conditions Ambient temperature 0～40℃ Humidity Below 70 % RH The ambient temperature must be kept below 30℃. Even under ideal storage conditions, solderability of products electrodes may decrease as time passes. For this reason, inductors should be used within one year from the time of delivery. In case of storage over 6 months, solderability shall be checked before actual usage.	1. Under a high temperature and humidity environment, problems such as reduced solderability caused by oxidation of terminal electrodes and deterioration of taping/packaging materials may take place.