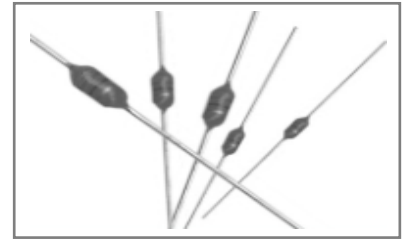


■ LGA 型色码电感器

LGA Type Color Code Inductors



◆ 特征

Feature

- * 体积小，感量大，适合自动安装的卷（编）带包装；

Miniature size, High sensitivity, tape and reel packaging suitable for auto-placement.

- * 环氧树脂封装，从而具有优良的防潮性能、机械强度及耐热性；

Epoxy resin coating creates excellent performance in humidity resistance, mechanical strength and heat resistance.

- * 工业生产标准尺寸及多种脚型产品。

Standard size, various lead configuration.

◆ 应用

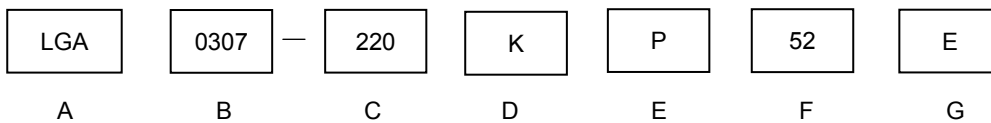
Application

- * 一般用途品

General purpose goods

◆ 型号表示法

Part Number



A:

产品类别 Product Type	
代号 Code	类别 Type
LGA	LGA 型色码电感器 LGA Type Color Code Inductors

B:

本体尺寸代码 Nominal Body Size Code		
类型 Type	外径 Dmax (mm)	体长 Lmax (mm)
0204	2.3	4.2
0307	2.8	7.0
0410	4.0	10.5
0510	5.0	10.5
0512	5.0	12.0

C:

标称电感量 Nominal Inductance(μ H)
前两位数字为有效数字, 后一位数字表示零的个数 First two digits are signify cant and the thirddigit is number of zeros .例如: For example: 101=100 μ H 5R6=5.6 μ H R22=0.22 μ H

D:

感量偏差 Tolerance	
J	$\pm 5\%$
K	$\pm 10\%$
M	$\pm 20\%$

E:

包装方式 Packaging Style		
编带 Tape	P	盒带包装 Ammo
	T	卷带包装 Reel
散包装 Bulk	F	直脚轴向 Axial
	L	直脚成型 Straight lead formed
	V	弯脚成型 Bent lead formed
	VK	弯脚 K 型 Bentlead K formed

F:

引脚形式 Lead configuration		
编带 Tape&rell	26	编带内距: 26mm Tape width:
	52	编带内距: 52mm Tape width:
	13	立式成型编带 Vertical forming tape
引脚成型 Formed lead	05	引脚脚距: 5.0mm Formed lead pitch:
	07	引脚脚距: 7.5mm Formed lead pitch:
	10	引脚脚距: 10.0mm Formed lead pitch:
	12	引脚脚距: 12mm Formed lead pitch:
	15	引脚脚距: 15mm Formed lead pitch:
	17	引脚脚距: 17mm Formed lead pitch:
	20	引脚脚距: 20mm Formed lead pitch:

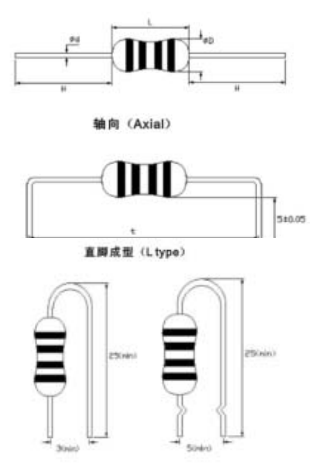
G

环保备注 Remark	
E	环保产品 Green Product
空白 Blank	含铅 Lead Contained

◆外型尺寸

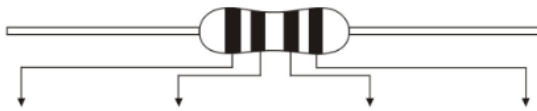
Size code,

类型 Type	尺寸 Dimensions(mm)				
	$\Phi D \leq$	$L \leq$	t	ΦD	$H \geq$
LGA0204	2.3	4.2	按要求定制 Customized according to requirements	0.5 ± 0.05	20
LGA0307	2.8	7.0			
LGA0410	4.0	10.5			
LGA0510	5.0	10.5			
LGA0512	5.0	12.5			



◆色环标记代码

Marking of Color Code



	标称电感量 Nominal Inductance			感量偏差 Tolerance
	第一色环 1st color zone	第二色环 2nd color zone	第三色环 3rd color zone	第四色环 4color zone
	第一数字 1st digit	第二数字 2nd digit	第三数字 3rd digit	
黑 Black	0	0	$\times 10^0$	$M \pm 20\%$
棕 Brown	1	1	$\times 10^1$	
红 Red	2	2	$\times 10^2$	
橙 Orange	3	3	$\times 10^3$	
黄 Yellow	4	4	$\times 10^4$	
绿 Green	5	5	$\times 10^5$	
蓝 Blue	6	6		
紫 Purple	7	7		
灰 Gray	8	8		
白 White	9	9		
金 Gold	—	—	$\times 10^{-1}$	$J \pm 5\%$
银 Silver	—	—	$\times 10^{-2}$	$K \pm 10\%$

*例如: For example

 标称感量及偏差为 $22\mu\text{H}$, $\pm 5\%$ 的电感器其色码为红+红+黑+金

 If nominal inductance&tolerance is $22\mu\text{H}$, $\pm 5\%$, respectively, red+red+black+gold should be marked

备注: LGA0204 由于体长较小只标注前三条代表标称电感量的色码

NOTE: only the first three color zones are marked on the body of LGA0204, due to the small body size

◆电性能参数及测试条件
Electrical Characteristics&Test Conditions
LGA0204 型电感器电性能参数及测试条件
LGA0204 Type Inductors Electrical Characteristics&Test Conditions

LGA0204 类型 Type	电感量 Inductance (μ H)	误差 Tolerance	Q (min)	直流电阻 RDC (Ω) max	测试频率 Test frequency (MHz)	自谐频率 SRF (MHz) min	额定电流 Rated current IDC(mA)max
LGA0204-R22	0.22	M: $\pm 20\%$	35	0.40	25.2	150	400
LGA0204-R27	0.27			380			
LGA0204-R33	0.33			370			
LGA0204-R39	0.39			350			
LGA0204-R47	0.47			330			
LGA0204-R56	0.56			320			
LGA0204-R68	0.68			310			
LGA0204-R82	0.82			290			
LGA0204-1R0	1.0			270			
LGA0204-1R2	1.2			260			
LGA0204-1R5	1.5	K: $\pm 10\%$	40	1.0	7.96	80	250
LGA0204-1R8	1.8			60		240	
LGA0204-2R2	2.2			45		230	
LGA0204-2R7	2.7			40		220	
LGA0204-3R3	3.3			38		210	
LGA0204-3R9	3.9			35		200	
LGA0204-4R7	4.7			32		190	
LGA0204-5R6	5.6			30		180	
LGA0204-6R8	6.8			28		175	
LGA0204-8R2	8.2			26		165	
LGA0204-100	10	J: $\pm 5\%$	40	2.5	2.52	24	160
LGA0204-120	12			22		150	
LGA0204-150	15			20		145	
LGA0204-180	18			18		140	
LGA0204-220	22			17		130	
LGA0204-270	27			16		80	
LGA0204-330	33			14		76	
LGA0204-390	39			13		74	
LGA0204-470	47			12		70	
LGA0204-560	56			11		68	
LGA0204-680	68	10	64				
LGA0204-820	82	9.5	46				
LGA0204-101	100	9.0	44				
LGA0204-121	120	0.796	13.0	8.0	42		
LGA0204-151	150		16.0	6.0	39		
LGA0204-181	180		18.0	5.5	37		
LGA0204-221	220		20.0	5.0	35		

LGA0307 型电感器电性能参数及测试条件
LGA0307 Type Inductors Electrical Characteristics&Test Conditions

LGA0307 类型 Type	电感量 Inductance (μH)	误差 Tolerance	Q (min)	直流电阻 RDC (Ω) max	测试频率 Test frequency (MHz)	自谐频率 SRF (MHz) min	额定电流 Rated current IDC (mA) max	
LGA0307-R22	0.22	M: $\pm 20\%$	35	0.40	25.2	150	400	
LGA0307-R27	0.27			0.43			380	
LGA0307-R33	0.33			0.48			370	
LGA0307-R39	0.39			0.51			350	
LGA0307-R47	0.47		40	0.56			330	
LGA0307-R56	0.56			0.61			320	
LGA0307-R68	0.68			0.67			310	
LGA0307-R82	0.82			0.74			290	
LGA0307-1R0	1.0			0.80			270	
LGA0307-1R2	1.2			K: $\pm 10\%$			50	0.90
LGA0307-1R5	1.5		1.0		131	250		
LGA0307-1R8	1.8		1.1		121	240		
LGA0307-2R2	2.2		1.2		110	230		
LGA0307-2R7	2.7		1.3		100	220		
LGA0307-3R3	3.3		1.4		94	210		
LGA0307-3R9	3.9		1.6		65	200		
LGA0307-4R7	4.7		1.7		56	190		
LGA0307-5R6	5.6		1.9		48	180		
LGA0307-6R8	6.8		2.0		37	175		
LGA0307-8R2	8.2		2.2	25	165			
LGA0307-100	10	2.5	21	160				
LGA0307-120	12	J: $\pm 5\%$	50	2.5	2.52	19	150	
LGA0307-150	15			2.8		17	145	
LGA0307-180	18			3.1		13	140	
LGA0307-220	22			3.4		9.6	130	
LGA0307-270	27			3.8		7.2	125	
LGA0307-330	33			4.1		6.3	120	
LGA0307-390	39			4.5		6.3	115	
LGA0307-470	47			4.9		6.3	110	
LGA0307-560	56			5.3		6.2	105	
LGA0307-680	68			5.8		5.7	100	
LGA0307-820	82	6.3	5.3	95				
LGA0307-101	100	7.0	4.8	90				
LGA0307-121	120	0.796	50	13.0	0.796	3.8	90	
LGA0307-151	150			15.0		3.5	85	
LGA0307-181	180			16.0		3.3	80	
LGA0307-221	220			17.0		3.0	75	
LGA0307-271	270			19.0		2.8	65	
LGA0307-331	330			20.0		2.6	60	
LGA0307-391	390			22.0		2.4	55	
LGA0307-471	470			24.0		2.25	55	
LGA0307-561	560			26.0		2.10	50	
LGA0307-681	680			28.0		1.95	45	
LGA0307-821	820	30.0	1.85	40				
LGA0307-102	1000	33.0	1.40	40				

LGA0410 型电感器电性能参数及测试条件
LGA0410 Type Inductors Electrical Characteristics&Test Conditions

LGA0410 类型 Type	电感量 Inductance (μ H)	误差 Tolerance	Q (min)	直流电阻 RDC (Ω) max	测试频率 Test frequency (MHz)	自谐频率 SRF (MHz) min	额定电流 Rated current IDC(mA)max
LGA0410-R22	0.22	M: $\pm 20\%$	45	0.10	25.2	300	1400
LGA0410-R27	0.27		45	0.11		270	1320
LGA0410-R33	0.33		45	0.12		250	1280
LGA0410-R39	0.39		45	0.13		230	1200
LGA0410-R47	0.47		45	0.14		220	1150
LGA0410-R56	0.56		45	0.15		200	1122
LGA0410-R68	0.68		45	0.16		190	1030
LGA0410-R82	0.82		45	0.17		172	980
LGA0410-1R0	1.0		45	0.19		157	920
LGA0410-1R2	1.2		50	0.21		144	880
LGA0410-1R5	1.5		50	0.23	131	830	
LGA0410-1R8	1.8		55	0.25	121	790	
LGA0410-2R2	2.2		55	0.28	110	750	
LGA0410-2R7	2.7		60	0.30	100	720	
LGA0410-3R3	3.3		65	0.34	94	670	
LGA0410-3R9	3.9		65	0.37	65	640	
LGA0410-4R7	4.7		70	0.39	56	620	
LGA0410-5R6	5.6		70	0.43	48	590	
LGA0410-6R8	6.8		75	0.48	37	550	
LGA0410-8R2	8.2		80	0.52	25	530	
LGA0410-100	10	65	0.58	21	500		
LGA0410-120	12	K: $\pm 10\%$	50	0.63	2.52	19	480
LGA0410-150	15		50	0.72		17	460
LGA0410-180	18		50	0.77		13	430
LGA0410-220	22		50	0.84		9.6	410
LGA0410-270	27		55	0.94		7.2	390
LGA0410-330	33		55	1.03		6.3	370
LGA0410-390	39		50	1.12		6.3	350
LGA0410-470	47		45	1.22		6.3	340
LGA0410-560	56		40	1.34		6.2	320
LGA0410-680	68		40	1.47		5.7	305
LGA0410-820	82	35	1.62	5.3	290		
LGA0410-101	100	30	1.80	4.8	275		
LGA0410-121	120	55	3.70	3.8	185		
LGA0410-151	150	45	4.20	3.5	175		
LGA0410-181	180	50	4.60	3.3	165		
LGA0410-221	220	55	5.10	3.0	155		
LGA0410-271	270	65	5.80	2.8	145		
LGA0410-331	330	65	6.40	2.6	137		
LGA0410-391	390	65	7.00	2.4	133		
LGA0410-471	470	60	7.70	2.25	126		
LGA0410-561	560	60	8.50	2.10	120		
LGA0410-681	680	55	9.40	1.95	113		
LGA0410-821	820	55	10.50	1.85	105		
LGA0410-102	1000	50	14.00	1.40	100		

LGA0510 型电感器电性能参数及测试条件
LGA0510 Type Inductors Electrical Characteristics&Test Conditions

LGA0510 类型 Type	电感量 Inductance (μ H)	误差 Tolerance	Q (min)	直流电阻 RDC (Ω) max	测试频率 Test frequency (MHz)	自谐频率 SRF (MHz) min	额定电流 Rated current IDC(mA)max	
LGA0510-2R2	2.2	M: $\pm 20\%$	40	0.28	7.96	7.8	175	
LGA0510-5R6	5.6			0.43		6.5	170	
LGA0510-100	10			0.58	2.52	5.5	165	
LGA0510-150	15			0.72		4.5	160	
LGA0510-330	33			1.03		4.2	156	
LGA0510-470	47			1.22		4.0	152	
LGA0510-820	82			1.62		3.8	148	
LGA0510-101	100			1.80		0.796	3.5	145
LGA0510-151	150		4.80	3.0	140			
LGA0510-221	220		5.10	2.8	135			
LGA0510-271	270		5.80	2.5	133			
LGA0510-301	300		6.80	2.2	130			
LGA0510-471	470		7.70	1.9	126			
LGA0510-501	500		8.10	1.8	123			
LGA0510-561	560		50	1.8	120			
LGA0510-681	680		K: $\pm 10\%$	55	9.00	1.5	113	
LGA0510-821	820			45	10.5	1.2	105	
LGA0510-102	1000		J: $\pm 5\%$	40	14.0	0.252	1.0	100
LGA0510-122	1200				16.9		0.95	95
LGA0510-152	1500				21.6		0.90	90
LGA0510-182	1800	24.0			0.85		85	
LGA0510-202	2000	30.0			0.80		83	
LGA0510-222	2200	34.7			0.80		80	
LGA0510-272	2700	40.0			0.75		75	
LGA0510-302	3000	45.0			0.75		73	
LGA0510-312	3100	50.0			0.70		70	
LGA0510-332	3300	59.5			0.70		62	
LGA0510-392	3900	66.0			0.65		59	
LGA0510-472	4700	74.0			0.60		55	
LGA0510-562	5600	30	80.0	0.50	40			
LGA0510-682	6800		85.0	0.45	35			
LGA0510-822	8200		95.0	0.40	30			

LGA0512 型电感器电性能参数及测试条件
LGA0512 Type Inductors Electrical Characteristics&Test Conditions

LGA0510 类型 Type	电感量 Inductance (μ H)	误差 Tolerance	Q (min)	直流电阻 RDC (Ω) max	测试频率 Test frequency (MHz)	自谐频率 SRF (MHz) min	额定电流 Rated current IDC(mA)max
LGA0510-103	10000	M: $\pm 20\%$	20	105.0	0.0796	0.35	25
LGA0510-123	12000			110.0		0.32	23
LGA0510-153	15000			115.0		0.30	20
LGA0510-183	18000			120.0		0.30	20
LGA0510-203	20000	K: $\pm 10\%$		125.0		0.30	20
LGA0510-223	22000			130.0		0.30	20
LGA0510-253	25000			135.0		0.30	20
LGA0510-263	26000	J: $\pm 5\%$		140.0		0.30	20
LGA0510-273	27000			145.0		0.30	20
LGA0510-823	82000			150.0		0.25	15

◆可靠性测试方法
Reliability Test Method

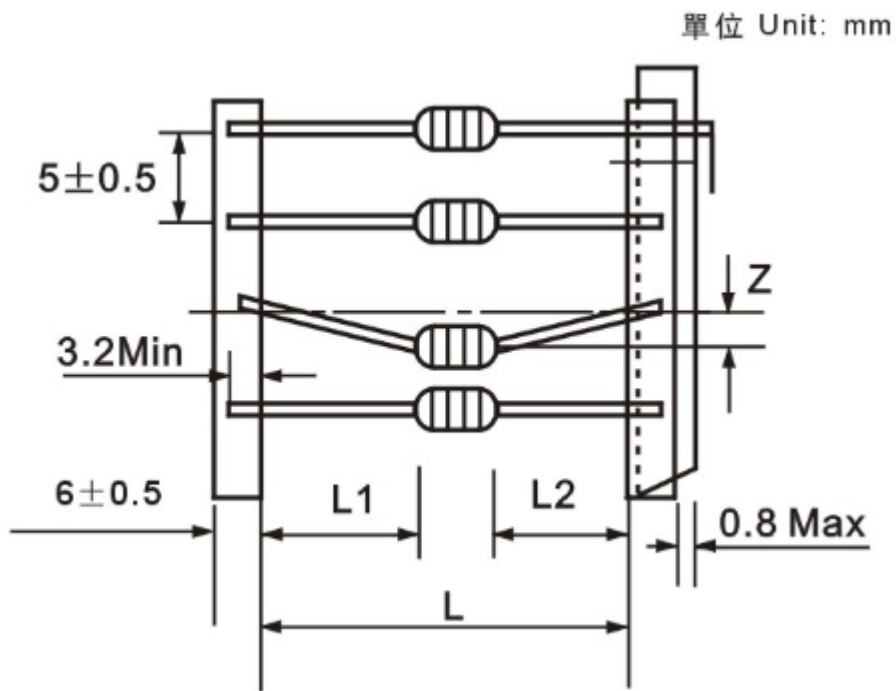
组别 Group	试验项目 Test items	试验方法 test method	判定标准 Criteria
1	1.1 外观 appearance	目测 Visual inspection	符合产品标准要求 Meet the requirements of product standards
	1.2 尺寸 size	用精度不少于 0.02mm 的量具测量。 Measure with a measuring tool with an accuracy of no less than 0.02mm.	
	1.3 电性能 Electrical performance	由相应的测试仪进行测试 Test with the appropriate tester	
2	2.1 耐溶剂性 Solvent resistance	条用棉球蘸酒精，以正常方式擦拭 3 次 Wipe the strips with cotton balls dipped in alcohol for 3 times in a normal way	标志清晰 Clear signs
	2.2 可焊性 Weldability	焊锡温度: 255 \pm 5 $^{\circ}$ C Solder temperature: 255 $^{\circ}$ C \pm 5 $^{\circ}$ C 浸渍时间: 2.5s \pm 0.5s Immersion time: 2.5s \pm 0.5s	上锡率 \geq 95% Tinning rate \geq 95%
	2.3 过载 overload	施加 2 倍额定电流，持续 5min Apply twice the rated current for 5min	无破碎、表面不烧焦，引线无松动、开路 No breakage, no scorching on the surface, no loose or open leads
	2.4 绝缘电阻 insulation resistance	测试电压 DC 500V Test voltage DC 500V	电阻 \geq 100M Ω Resistance \geq 100M Ω
	2.5 盐雾试验	中性盐雾，试验溶液为 5%氯化钠溶液，连续喷雾 24h，	试验后电感器铁芯引脚外表面应

2		Salt spray test	试验后去离子水冲洗 5min 并干燥，常温下恢复 2h 后观察 Neutral salt spray, test solution is 5% sodium chloride solution, continuous spray for 24h, after the test, deionized water is washed for 5min and dried, and observation is conducted after recovery for 2h at room temperature	无锈蚀 After the test, the outer surface of inductor core pin shall be free of rust
	2.6	引出端强度 Terminal tensile strength	拉力计 tensimeter	LGA0204≥1.8Kg LGA0307≥2.3Kg LGA0410≥2.8Kg LGA0510≥3.0Kg
	2.7	跌落 drop	1m 高度自由落下水泥地，2 次 Free fall on the cement floor at a height of 1m, twice	外观无明显损伤，产品电气性能符合要求 There is no obvious damage to the appearance, and the electrical performance of the product meets the requirements
	2.8	耐焊接热 Resistance to welding heat	焊锡温度：350℃±5℃ Solder temperature: 350 °C ± 5 °C 浸渍深度：10mm Immersion depth: 10mm 浸渍时间：3s±0.5s。 Immersion time: 3s ± 0.5s.	外观无明显损伤， There is no obvious damage to the appearance, $-5\% \leq \Delta L/L \leq 5\%$ $-20\% \leq \Delta Q/Q \leq 20\%$
	2.9	温度冲击 Temperature shock	阶段 1: +105℃/30min Phase 1: +105 °C/30min 阶段 2: -25℃/30min Stage 2: - 25 °C/30min 转换时间<5min，循环次数：100 次 Conversion time < 5min, number of cycles: 100 恢复时间：2 h Recovery time: 2 h	
	2.10	工作寿命 working life	温试验度：85℃±2℃，施加额定电流 Temperature test degree: 85 °C ± 2 °C, apply rated current 试验时间：1000 h Test time: 1000 h 恢复时间：24 h±2 h Recovery time: 24 h ± 2 h	外观无明显损伤， There is no obvious damage to the appearance, $-10\% \leq \Delta L/L \leq 10\%$ $-30\% \leq \Delta Q/Q \leq 30\%$
	2.11	耐高温 High temperature resistance	温试验度：+125℃±2℃ Temperature test degree: +125 °C ± 2 °C 试验时间：1000 h Test time: 1000 h 恢复时间：24 h±2 h Recovery time: 24 h ± 2 h	

	2.12	耐低温 Low temperature resistance	温试验度: $-25^{\circ}\text{C}\pm 2^{\circ}\text{C}$ Temperature test degree: $-25^{\circ}\text{C}\pm 2^{\circ}\text{C}$ 试验时间: 1000 h Test time: 1000 h 恢复时间: $24\text{ h}\pm 2\text{ h}$ Recovery time: $24\text{ h}\pm 2\text{ h}$
	2.13	振动 Vibration	频率范围: 10HZ-50HZ Frequency range: 10HZ-50HZ 全振幅: 1.5mm Full amplitude: 1.5mm 持续时间: 扫描循环 20 次 Duration: 20 scanning cycles

◆包装方式
Packaging Style

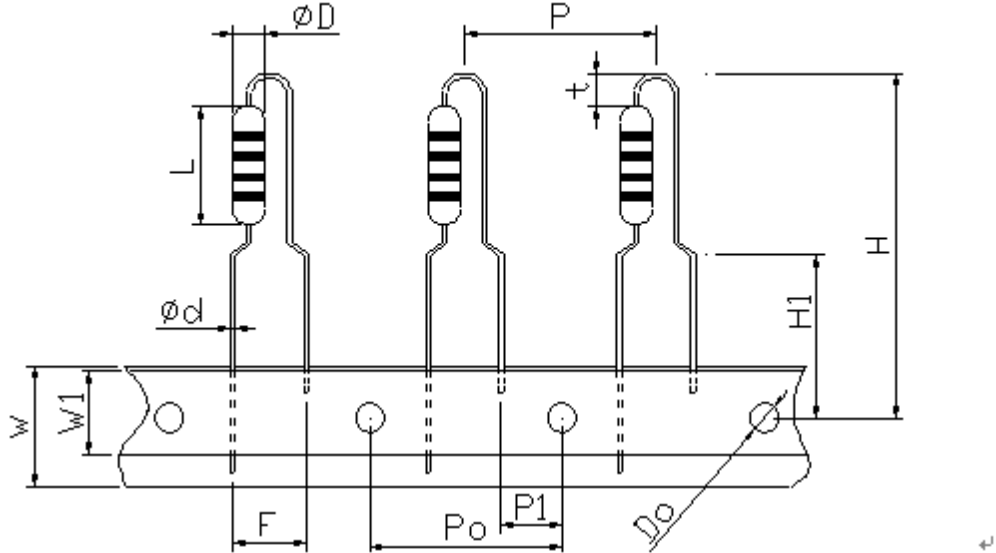
* 编带尺寸
Taping Dimensions



编带方式 Tape style	L	Z	$ L1-L2 $
编带内距:26 Tape width	26 ± 1.0	0.8Max	1.0Max
编带内距:52 Tape width	52 ± 1.0	1.2Max	

* 卧转立编带尺寸

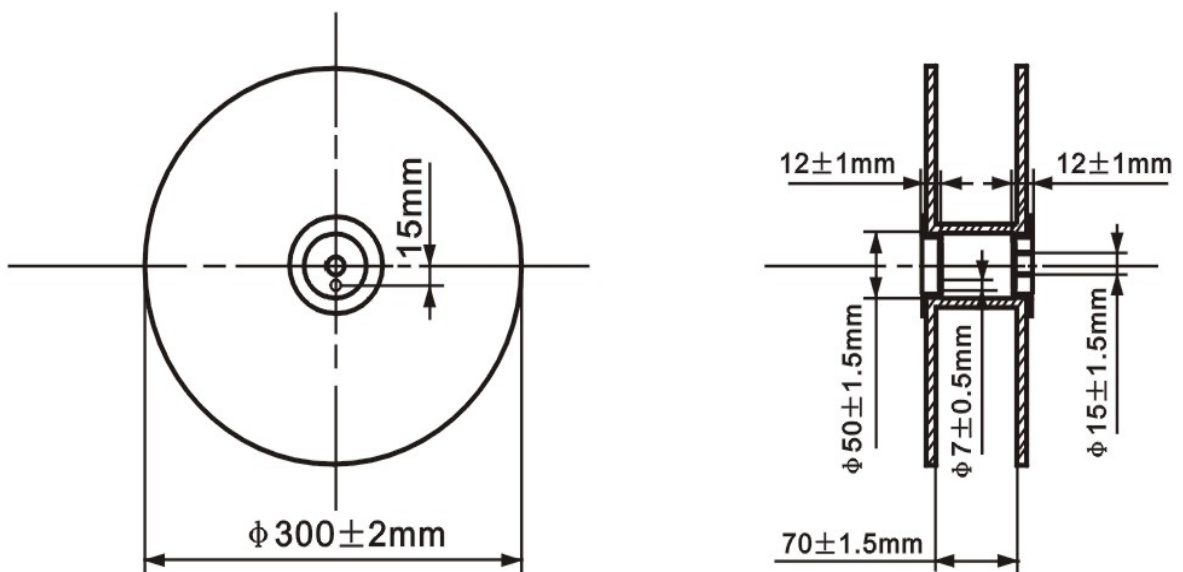
Horizontal and vertical braiding size



SYMBOL [↗]	DIMENSION [↗]	SYMBOL [↗]	DIMENSION [↗]
P [↗]	12.7±1.0 [↗]	H [↗]	30.0(Max) [↗]
P0 [↗]	12.7±0.3 [↗]	H1 [↗]	16~18 [↗]
P1 [↗]	3.85±0.7 [↗]	W [↗]	18±1.0 [↗]
F [↗]	5.0±0.5 [↗]	W1 [↗]	8.0(Min) [↗]
Do [↗]	4.0±0.2 [↗]	t [↗]	2.0Min [↗]
L [↗]	10.5 MAX [↗]	Φd [↗]	0.58±0.05 [↗]
ΦD [↗]	4.0 MAX [↗]		

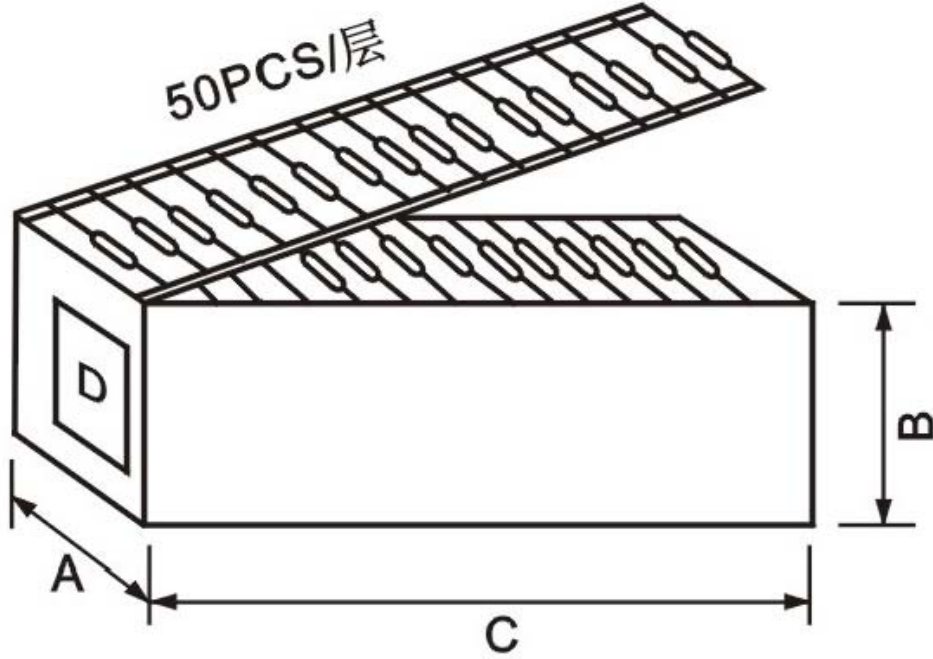
* 卷带包装尺寸

Tape & Reel Packaging Dimensions



* 盒带包装尺寸

Ammo Packaging Dimensions



* 包装数量单位

Packaging Quantity

单位: Unit: pcs

型号规格	包装方式 Packaging style			
	盒带包装	散包装	卷带包装	卧转立编带包装
LGA0204	3000	1000	5000	/
LGA0307	2000	1000	4000	4000
LGA0410	2000	1000	3000	3000
LGA0510	1000	1000	2500	2500
LGA0512	1000	1000	2500	2500

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