

## 零件承认书

SPECIFICATION FOR APPROVAL

客户名称：0110

增益型号：ZE0510-471

规格描述：编带色环电感0510 470uH  $\pm 10\%$  340mA

日期：2024/10/08

版本：A

增益签核：

| 制订 | 审核 | 核准 |
|----|----|----|
| 夏琳 |    | 李万 |

客户签核：

| 工程 | 审核 | 核准 |
|----|----|----|
|    |    |    |



东莞市增益实业有限公司

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物料类型：

色环电感

日期：

2024/10/08

版本：

A



# Axial Fixed Inductor

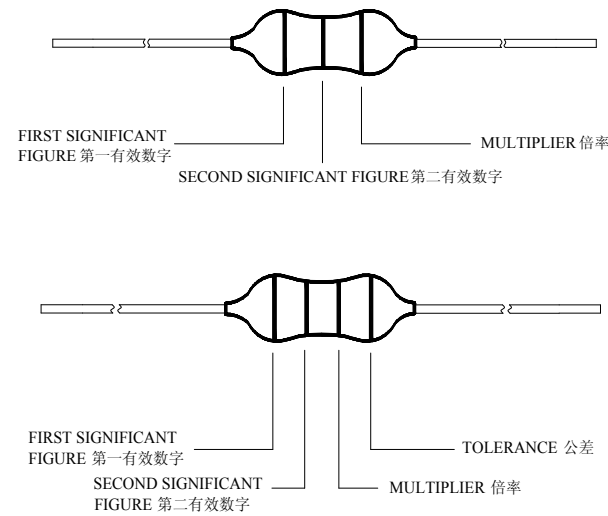
## ● Features 特性

- 1. Design to be compact, small and light-weight, wide range of inductance. 感量范围宽，尺寸小，重量轻。
- 2.Contribute to be high Q and self-resonent frequencies, tapping type that is convenient for automatic insertion, coating epoxy resin that ensure the humidity resistance to be long life.  
高Q和SRF值，卷装适用于自动插件，使用寿命长。

## ● Applications 用途

For TV, radios and radio transceivers, telephones. 用于TV、音响，收音机，电话机。  
Others various electronic products. 用其他各种电子产品上。

## ● Color Coding 颜色编码



The nominal inductance is marked. Color code listed in table below. 标称电感值用色码编码表示如下表所示。

| Color<br>颜色 | Nominal Inductance(uH)标称电感值(微亨) |            |            |           |
|-------------|---------------------------------|------------|------------|-----------|
|             | 1st Figure                      | 2nd Figure | Multiplier | Tolerance |
| Black 黑     | 0                               |            | ×1         | ±20%      |
| Brown 棕     | 1                               |            | ×10        | ——        |
| Red 红       | 2                               |            | ×100       | ——        |
| Orange 橙    | 3                               |            | ×1000      | ——        |
| Yellow 黄    | 4                               |            | ——         | ——        |
| Green 绿     | 5                               |            | ——         | ——        |
| Blue 蓝      | 6                               |            | ——         | ——        |
| Violet 紫    | 7                               |            | ——         | ——        |
| Gray 灰      | 8                               |            | ——         | ——        |
| White 白     | 9                               |            | ——         | ——        |
| Gold 金      | ——                              |            | ×0.1       | ±5%       |
| Silver 银    | ——                              |            | ×0.01      | ±10%      |



## ● Appearance Dimensions 外观尺寸

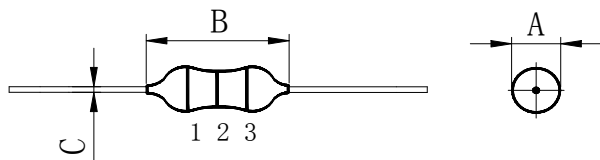


Figure 1

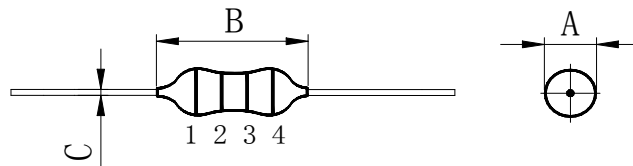


Figure 2

| Type | Dimension(mm) |           |          | Figure |
|------|---------------|-----------|----------|--------|
|      | A(Max)        | B(Max)    | C*(±0.1) |        |
| 0204 | Ø2.8          | 4.8       | Ø0.45    | 1      |
| 0307 | Ø3.0/Ø3.2     | 7.0       | Ø0.50    | 2      |
| 0410 | Ø4.0          | 10.5      | Ø0.60    | 2      |
| 0412 | Ø4.5/5.0      | 12.7      | Ø0.65    | 2      |
| 0510 | Ø5.0          | 10.5      | Ø0.60    | 2      |
| 0512 | Ø5.0          | 12.0      | Ø0.60    | 2      |
| 0514 | Ø5.0/5.5      | 14.0/15.0 | Ø0.65    | 2      |

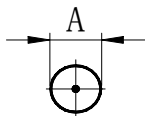
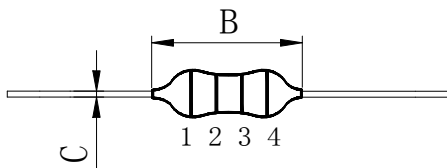
C\*It depends on the actual situation.视情况定。



## 电性能参数及测试条件

### 0510 型电感器电性能参数及测试条件

#### ■0510 Series



| A        | B        | C        |
|----------|----------|----------|
| Ø5.0 Max | 10.5 Max | Ø0.6±0.1 |

| PART NUMBER<br>品名 | Inductance<br>(uH) 电感 | Q (Min)<br>Q值 | Frequency<br>(MHz)<br>测试频率 | DCR (Max)<br>(Ω)<br>直流电阻 | SRF (Min)<br>(MHz)<br>自谐频率 | Rated Current<br>(Max) (mA)<br>额定电流 |
|-------------------|-----------------------|---------------|----------------------------|--------------------------|----------------------------|-------------------------------------|
| ZE0510-471        | 470±10%               | 60            | 0.796                      | 3.5                      | 1.9                        | 340                                 |



## 可靠性试验项目及要求:

| 项目<br>Item |                                         | 性能要求<br>Specification                                                                          | 试验条件及方法<br>Test methods and remarks                                                                                                                                                                                                                                                       |
|------------|-----------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1          | 工作温度范围<br>Operating temperature range   | -25~+85℃                                                                                       |                                                                                                                                                                                                                                                                                           |
| 2          | 储存温度范围<br>Storage temperature range     | +5~+35℃                                                                                        |                                                                                                                                                                                                                                                                                           |
| 3          | 外观和外形尺寸<br>Appearance & dimensions      | 符合产品规范和公差要求<br>Conformity to the product specification                                         | 目测, 精度不低于 0.05 mm 的游标卡尺测量<br>Eyeball; vernier calliper with precision no lower than 0.02mm                                                                                                                                                                                                |
| 4          | L 值、Q 值<br>Inductance、Q                 | 在规定的允许范围内<br>Within the specified tolerance                                                    | 电感量和 Q 值在规定的测试频率下, 用 HP4285A 进行测试。<br>Condition: at specified test frequency.<br>Test equipment: HP4285A                                                                                                                                                                                  |
| 5          | 直流电阻<br>DC resistance                   | 在规定的允许范围内<br>Within the specified tolerance                                                    | 测试仪器: HP4338B<br>Test equipment: HP4338B                                                                                                                                                                                                                                                  |
| 6          | 自谐振频率<br>Self-resonance frequency       | 在规定的允许范围内<br>Within the specified tolerance                                                    | 测试仪器: 射频/阻抗材料分析仪 HP4291A<br>Test equipment: HP4291A                                                                                                                                                                                                                                       |
| 7          | 额定电流<br>Rated current                   | 在规定的允许范围内<br>Within the specified tolerance                                                    | 电感值变化 10%、温升 20℃ 以内的最大直流电流。<br>The maximum DC value having inductance within 10% and temperature increase within 20℃ by the application of DC bias.                                                                                                                                       |
| 8          | 引出端强度<br>Terminal strength              | 外观无可见损伤、引线不断<br>There shall be no evidence of damage during the test and the lead no breakage. | 拉力: 沿轴向施加 2kgf, 持续时间: 5s<br>Pull: adding 2kgf down axial Duration: 5s<br>弯折循环: 在靠近端子末端将引线弯折 90 度后还原持续 5s, 再向反方向重复一次为一个循环。重复 2 次<br>Bucking cycle: buck lead 90° at the end of closing terminal and then reset keeping 5s, redoing one time at the counter is one cycle. Repeat two times. |
| 9          | 耐焊接热<br>Resistance to soldering heat    | $\Delta L/L \leq \pm 5\%$<br>$\Delta Q/Q \leq \pm 20\%$                                        | 焊锡温度: 270±5℃ 浸锡时间: 10±1s<br>恢复时间: 1~2 小时<br>Tin review: 270±5℃ Duration: 10±1s<br>Recovery: 1~2hours                                                                                                                                                                                      |
| 10         | 可焊性<br>Solder ability                   | 引线的表面圆周覆盖率不小于 95%<br>Leads shall be at least 95% areas covered with a new solder coating.      | 焊锡温度: 250±5℃ 浸锡时间: 2±0.5s<br>Tin review: 250±5℃ Duration: 2±0.5s                                                                                                                                                                                                                          |
| 11         | 标记耐溶剂性<br>Resistance to solvent         | 标志无可见损伤<br>There shall be no evidence of damage                                                | 溶剂温度: 25±5℃ Solvent temperature: 25±5℃<br>将棉球和样品浸在溶剂中 1min, 在样品有标志部位用棉球擦 3 次。<br>There shall be put the cotton ball and sample steep in dissolvent 1min, at sample's notation area brush 10 times, repeat 3 times                                                                         |
| 12         | 介质耐压<br>Dielectric Withstanding Voltage | 无弧光、击穿或损伤。<br>There shall be no arc, breakdown or damage.                                      | 在外封和引线间施加直流电压 500V, 持续 60 秒。<br>Apply 500VDC between outer coating and terminal for 60sec.                                                                                                                                                                                                |
| 13         | 绝缘电阻<br>Insulation resistance           | $IR \geq 100M\Omega$                                                                           | 在外包封和引线间施加直流电压 500V, 持续 60 秒。<br>Apply 500VDC between outer coating and terminal for 60sec.                                                                                                                                                                                               |
| 14         | 温度特性<br>Temperature characteristic      | $\Delta L/L \leq \pm 5\%$<br>$\Delta Q/Q \leq \pm 20\%$                                        | 以 20℃ 电感量为基准, 在 -25℃—+85℃ 测量电感量<br>Measurement shall be made at an ambient temp of -25℃—+85℃ reference inductance shall be measured at 20℃.                                                                                                                                               |
| 15         | 高温试验<br>High temperature life test      | $\Delta L/L \leq \pm 10\%$<br>$\Delta Q/Q \leq \pm 30\%$                                       | 温度: 85±2℃, 试验时间: 96 小时<br>Test temperature: 85±2℃, Time: 96hours                                                                                                                                                                                                                          |

备注: 1、如无特别指定时, 电性能测试应在常温、常湿中恢复 1~2 小时, 然后立即测试。

2、若测试结果有争议时, 仲裁试验结果用标准大气条件为: 温度: 25±1℃, 相对湿度 48%~52%, 气压: 86~106kPa。

Note: 1. In the event of no special requirement, the measurement shall be conducted immediately after a recovery of 1~2 hours under the standard condition.

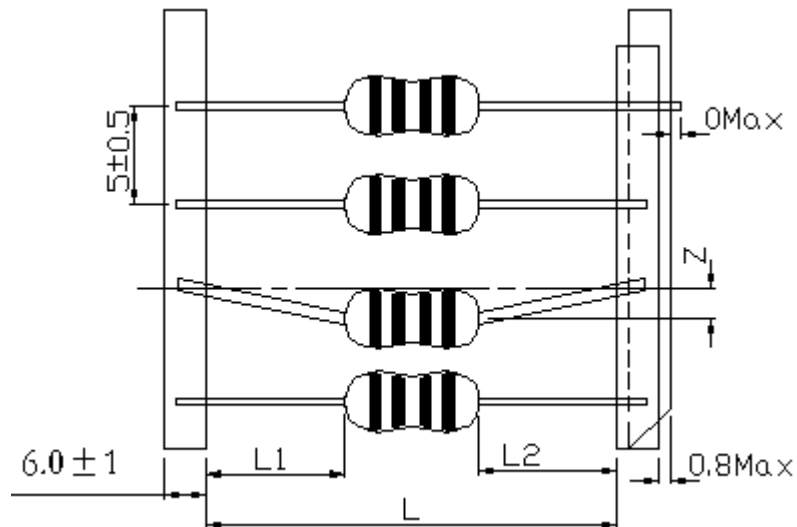
2. In the event of any dispute, the standard condition for arbitration shall be as follows: 25±1℃ of temperature, 48%~52% RH and 86~106kPa air pressure.



## 包装方式 PACKAGING STYLE

### ● 编带尺寸 Taping dimensions

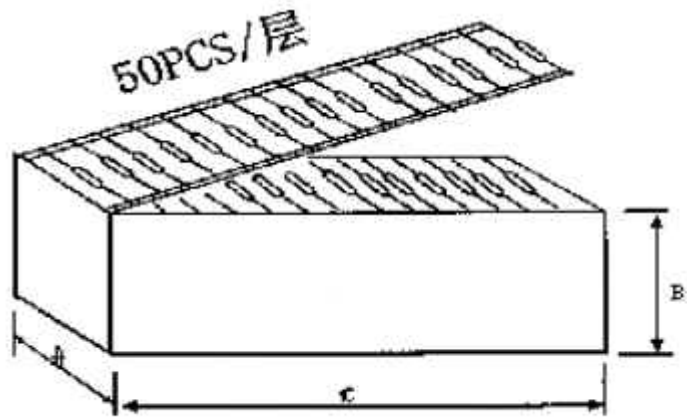
单位 UNIT: mm



| 编带方式<br>Tape style    | L                  | Z       | L1-L2   |
|-----------------------|--------------------|---------|---------|
| 编带内距:26<br>Tape width | $26 \pm 1.0$       | 0.8 Max | 1.0 Max |
| 编带内距:52<br>Tape width | $52^{+2.0}_{-1.0}$ | 1.2 Max |         |



● 盒带包装尺寸 Ammo packaging dimensions



● 包装盒尺寸 Dimensions of box 单位 UNIT: mm

| 编带类型<br>Tape type | 尺寸<br>Dimensions (±5mm) |     |     |
|-------------------|-------------------------|-----|-----|
|                   | A                       | B   | C   |
| 52                | 75                      | 85  | 256 |
| 26                | 50                      | 110 | 256 |

● 包装数量 Packaging quantity

| 包装方式<br>Packaging style | 盒带包装<br>Ammo | 卷带包装<br>Tape & reel | 散包装<br>Bulk |
|-------------------------|--------------|---------------------|-------------|
| 包装数量<br>Quantity        | 1000         | 2500                | 1000        |

# 可根据用户需求包装  
Packaging according to customer' s requirement