

# SPECIFICATION FOR APPROVAL



CUSTOMER: 安克华

DESCRIPTION: 1:1 RF transformers

CUSTOMER P/N:

LIHUA P/N: SL001607

TYPE:

SPEC. NO.: S-020-G0143

DATE: 15-Dec-2020

| ISSUE BY                                                                            |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| APPROVED                                                                            | CHECKED                                                                             | DRAWN                                                                               |
|  |  |  |

| CUSTOMER APPROVED BY |         |         |
|----------------------|---------|---------|
| APPROVED             | CHECKED | CHECKED |
|                      |         |         |



LIHUA ELECTRONICS CORP.  
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<http://www.zslhdz.cn>

|                 |      |                              |        |
|-----------------|------|------------------------------|--------|
| Customer<br>安克华 |      | Specification<br>(Revisions) | Type   |
| Symbol          | Date | Revisions                    | Client |

|                                                                                                                                              |                              |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Note:<br>This specification is subject to change without notice for improvement.<br>It is requested that confirmation is made when ordering. | Spec. No.<br><br>S-020-G0143 |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|

# S P E C I F I C A T I O N

Customer: 安克华

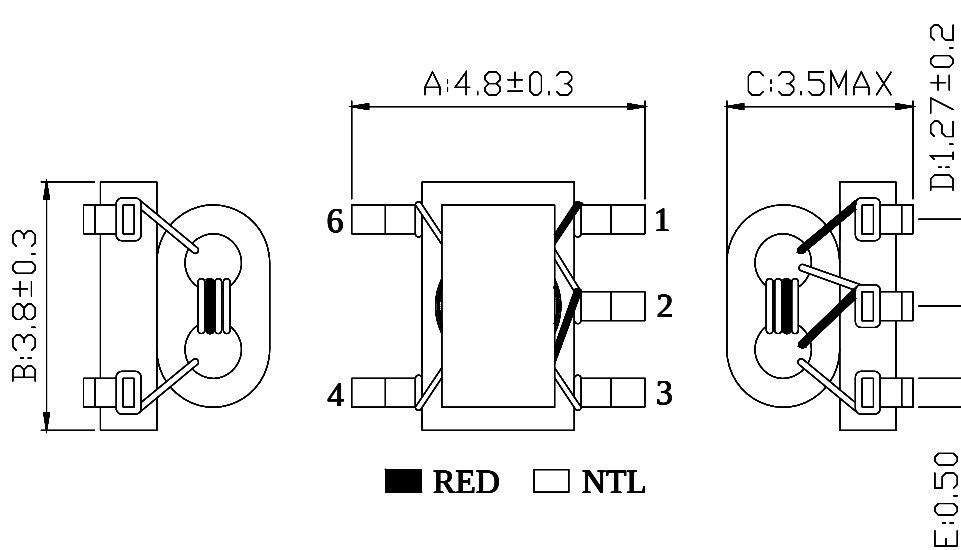
Type:



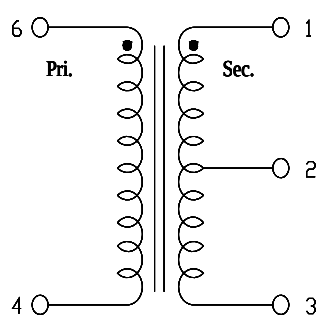
## Feature:

- \* 1:1 Impedance Transformers
- \* Surface mount
- \* Packaging 2000pcs per reel.
- \* used in 50 ohm systems.
- \* weld connect.
- \* 260 degree compatible.
- \* RoHS Compliant

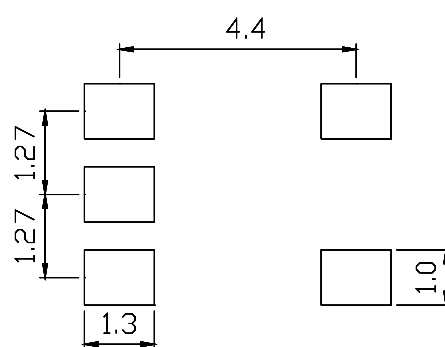
## Base dimension



## Schematic



## Suggested PCB Layout



| Approved | Checked | Drawn | Customer P/N |            |                           |
|----------|---------|-------|--------------|------------|---------------------------|
|          |         |       | LIHUA P/N    | SL001607   |                           |
|          |         |       | Type code    |            | Spec. No.:<br>S-020-G0143 |
|          |         |       | Date         | 2020-12-15 |                           |

# S P E C I F I C A T I O N

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|---------------|--|-------|
| Customer: 安克华 |  | Type: |
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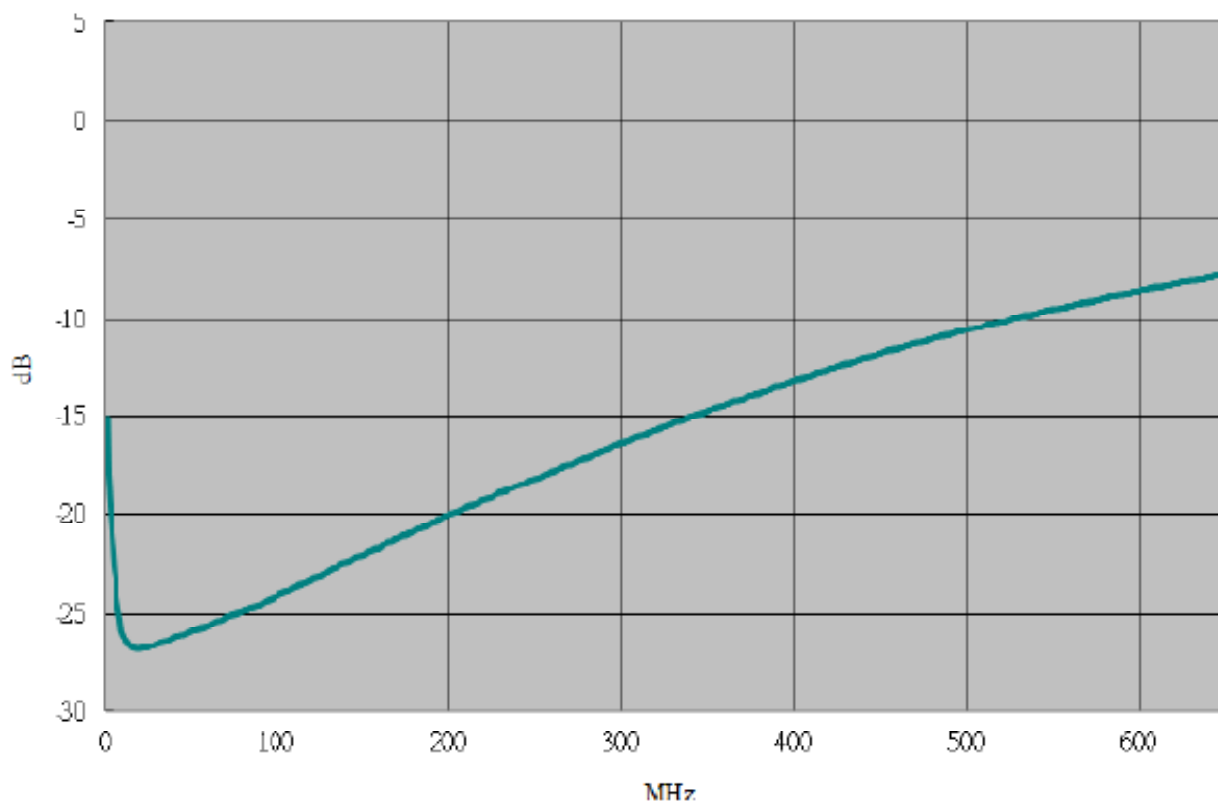
| PIN CONFIGURATION |                      |
|-------------------|----------------------|
| PIN               | FUNCTION             |
| 1                 | Secondary Dot        |
| 2                 | Secondary centre tap |
| 3                 | Secondary            |
| 4                 | Primary              |
| 6                 | Primary Dot          |

| Electrical Specifications: TA=25°C, Zo=50Ω |                    |                |         |       |                                     |           |                                       |           |
|--------------------------------------------|--------------------|----------------|---------|-------|-------------------------------------|-----------|---------------------------------------|-----------|
| Impedance Ratio<br>50 OHM                  | Frequency<br>(MHz) | Insertion loss |         |       | Phase unbalance<br>(Deg.)<br>[Typ.] |           | Amplitude unbalance<br>(dB)<br>[Typ.] |           |
|                                            |                    | 3 dB           | 2 dB    | 1 dB  | 1 dB                                | 2 dB      | 1 dB                                  | 2 dB      |
|                                            |                    | MHz            | MHz     | MHz   | bandwidth                           | bandwidth | bandwidth                             | bandwidth |
| 1:1                                        | 0.4-500            | 0.4-500        | 0.5-300 | 1-100 | 2                                   | 5         | 0.1                                   | 0.6       |

\* Hi-pot(Pri to Sec): 500Vac,1mA,3Sec

Performance.

Input return loss



|       |                           |
|-------|---------------------------|
| Note: | Spec. No.:<br>S-020-G0143 |
|-------|---------------------------|

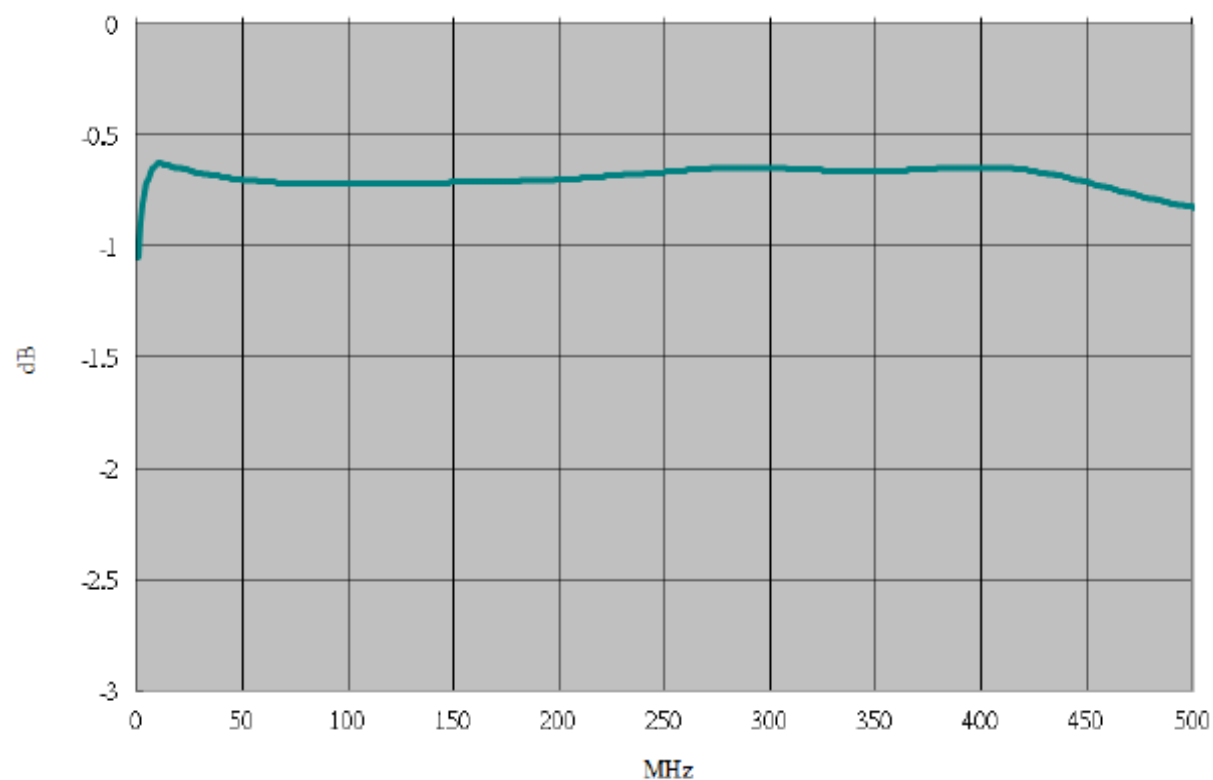
# SPECIFICATION

Customer: 安克华

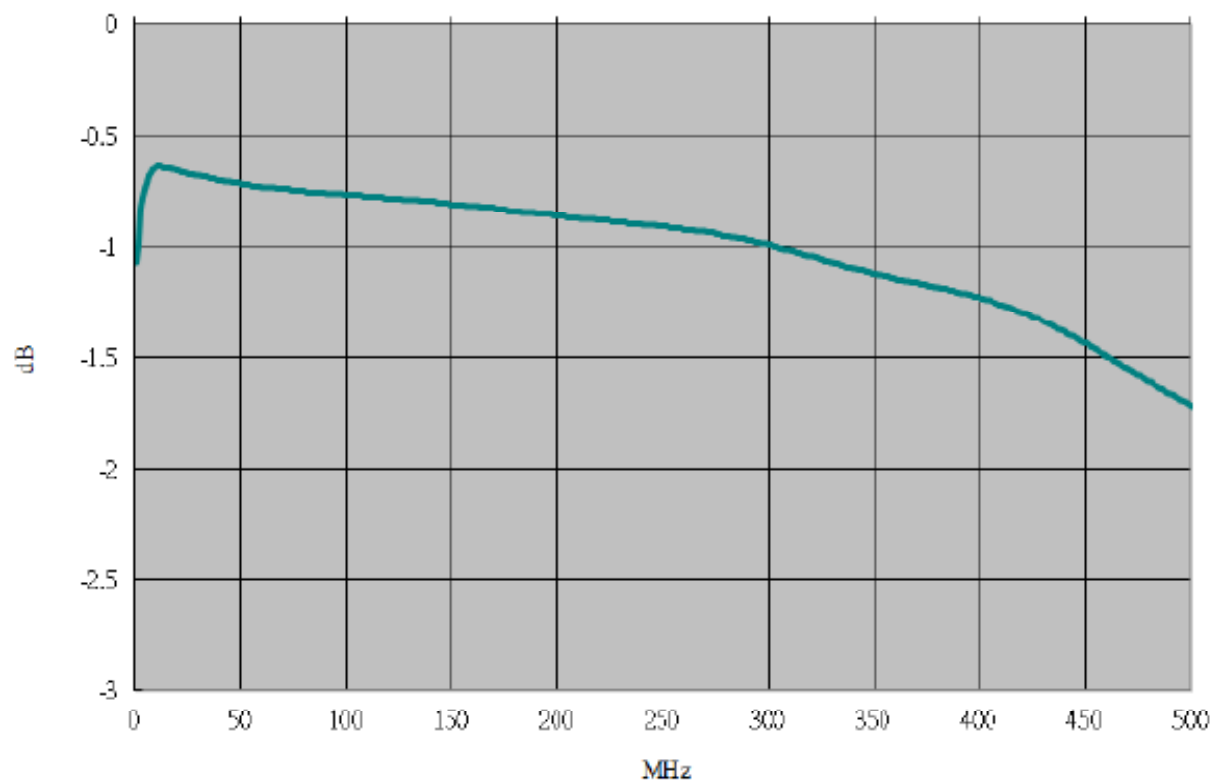
Type:

## Performance.

Insertion loss 4-3



Insertion loss 4-1



Note:

Spec. No.:

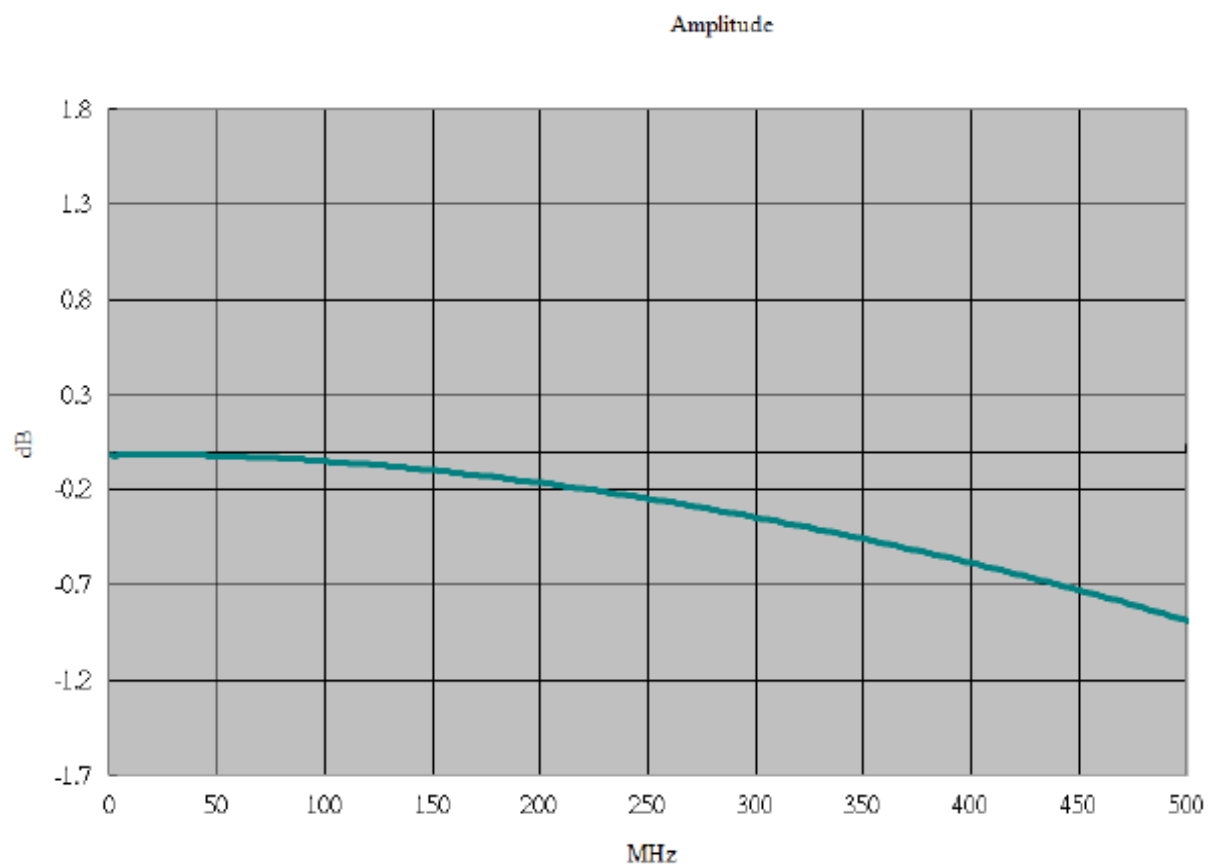
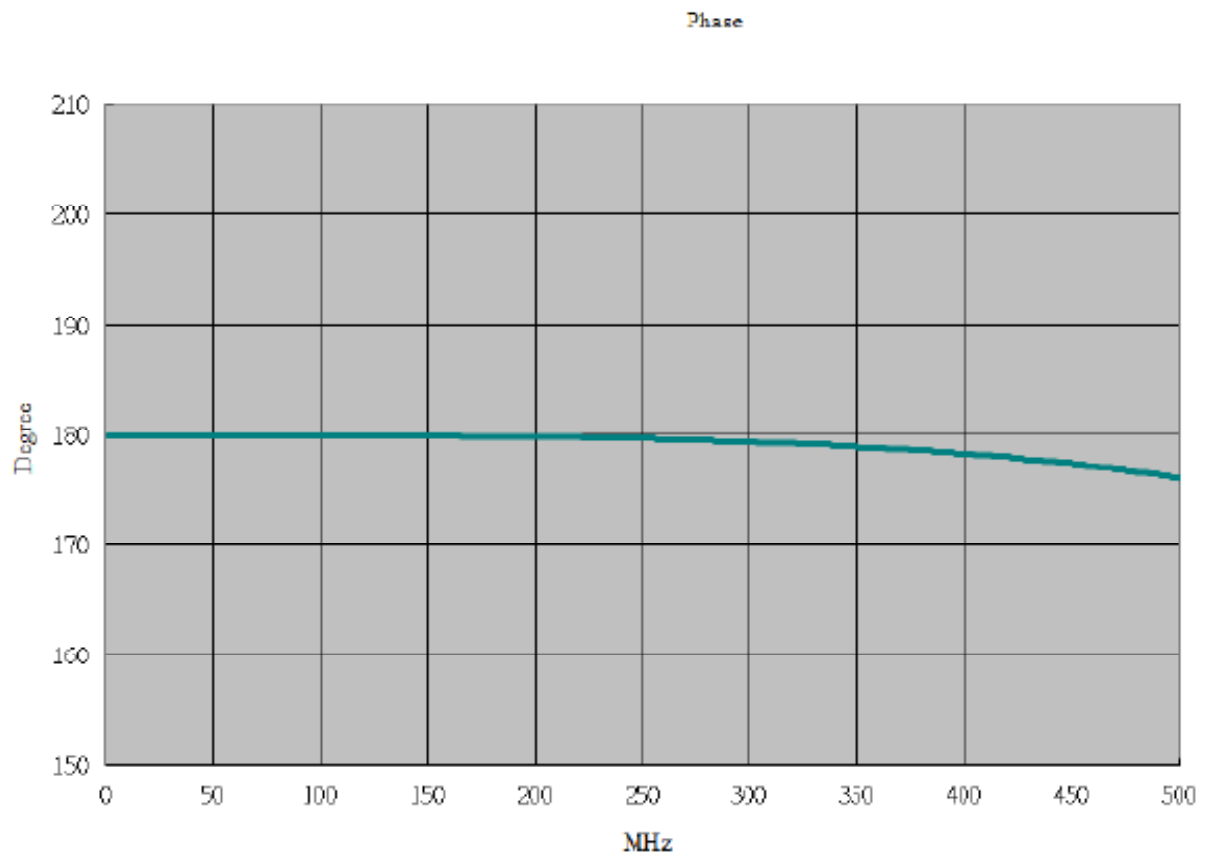
S-020-G0143

# SPECIFICATION

Customer: 安克华

Type:

## Performance.



Note:

Spec. No.:

S-020-G0143

# S P E C I F I C A T I O N

|           |     |       |
|-----------|-----|-------|
| Customer: | 安克华 | Type: |
|-----------|-----|-------|

## 3 .Test data

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |          |          |                            |           |              |             |            |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|----------|----------------------------|-----------|--------------|-------------|------------|--|
| Part No.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | SL001607 |          | Subject:Electric&Dimension |           | Date:        |             | 2020-12-15 |  |
| Measuring instrument(s):<br><div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Tonghui TH2819A LCR<br/> <input type="checkbox"/> TH2882A Impulse Winding Tester<br/> <input type="checkbox"/> Agilent 4191A<br/> <input type="checkbox"/> Micrometer<br/> <input checked="" type="checkbox"/> Caliper             </div> <div> <input type="checkbox"/> Tonghui TH7133<br/> <input type="checkbox"/> UC8801C Hipot Tester<br/> <input type="checkbox"/> Agilent 4284A<br/> <input type="checkbox"/> TMS             </div> </div> |         |          |          |                            |           | Quantity:    |             | 10 pcs     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |          |          |                            |           | Temperature: |             | 25 °C      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |          |          |                            |           | Humidity:    |             | 65 %       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |          |          |                            |           |              |             |            |  |
| Test item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | A       | B        | C        | D                          | E         |              |             |            |  |
| Con.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | mm      | mm       | mm       | mm                         | mm        |              |             |            |  |
| No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4.8±0.3 | 3.8±0.3  | 3.5 Max. | 1.27±0.1                   | 0.50 Ref. |              |             |            |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.89    | 3.89     | 3.23     | 1.26                       | 0.50      |              |             |            |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.88    | 3.86     | 3.22     | 1.25                       | 0.49      |              |             |            |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.85    | 3.87     | 3.23     | 1.26                       | 0.48      |              |             |            |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.86    | 3.86     | 3.24     | 1.25                       | 0.47      |              |             |            |  |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.87    | 3.88     | 3.23     | 1.25                       | 0.50      |              |             |            |  |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |          |          |                            |           |              |             |            |  |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |          |          |                            |           |              |             |            |  |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |          |          |                            |           |              |             |            |  |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |          |          |                            |           |              |             |            |  |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |          |          |                            |           |              |             |            |  |
| X Bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4.870   | 3.872    | 3.230    | 1.254                      | 0.488     |              |             |            |  |
| MAX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4.890   | 3.890    | 3.240    | 1.260                      | 0.500     |              |             |            |  |
| MIN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4.850   | 3.860    | 3.220    | 1.250                      | 0.470     |              |             |            |  |
| R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.040   | 0.030    | 0.020    | 0.010                      | 0.030     |              |             |            |  |
| Note:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |          |          |                            |           |              |             |            |  |
| Note:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |          |          |                            |           |              | Spec. No.   |            |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |          |          |                            |           |              | S-020-G0143 |            |  |

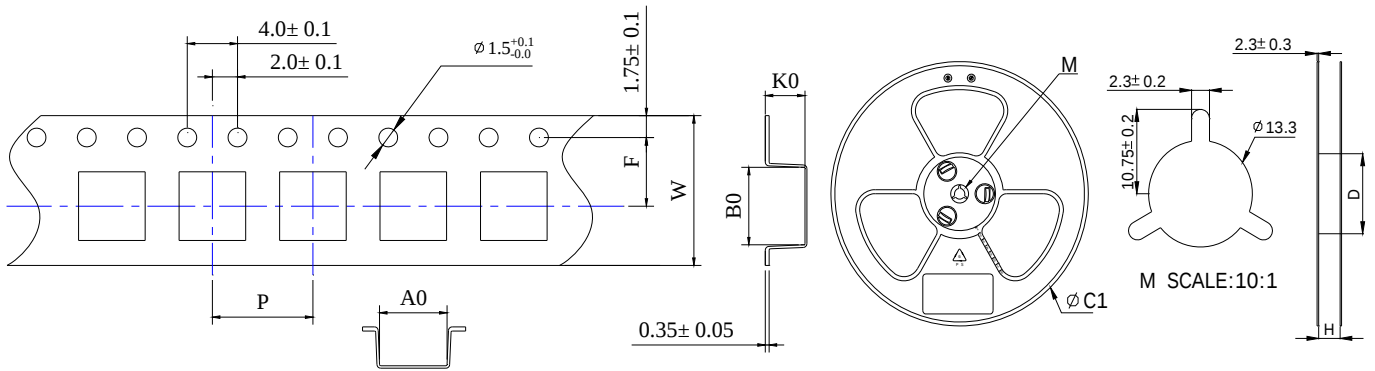
## SPECIFICATION

Customer: 安克华

Type:

#### 4. Packing specification

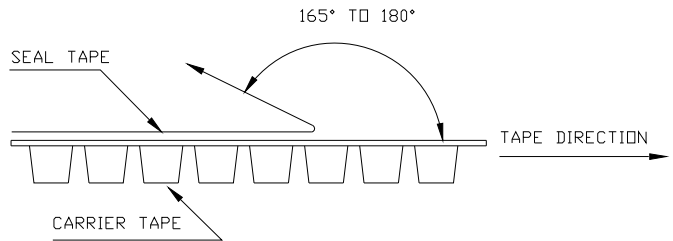
#### 4-1.Tape dimension (mm)



| W      | A0      | B0      | K0      | F        | P     | C1      | D       | H        |
|--------|---------|---------|---------|----------|-------|---------|---------|----------|
| 12±0.3 | 4.0±0.1 | 5.0±0.1 | 3.5±0.1 | 5.5±0.05 | 8±0.1 | 330±1.0 | 100±1.0 | 12.5±0.2 |

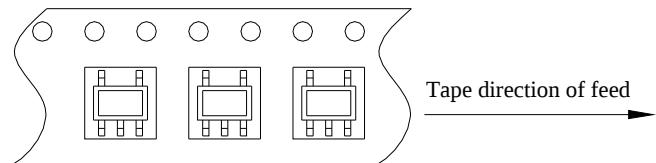
## 4-2.Taping

\*The angle between the seal tape during peel off and the direction of unreeling shall be 165 ° to 180 ° The seal tape shall adhere uniformly to the carrier tape along both sides in the direction of unreeling. The peel force with a peel speed of 300mm/MIN±10mm/MIN shall be 0.5N to 1.3N.

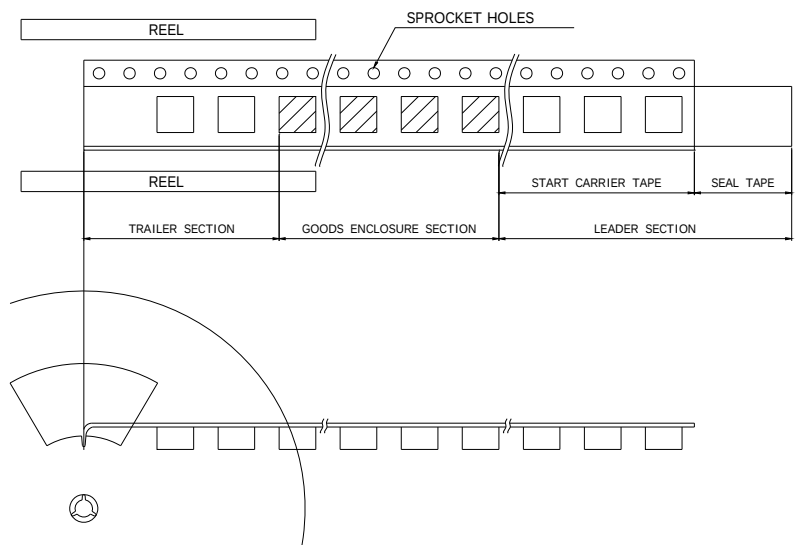


\* Enclosing condition of coils.

The mark side is upward as the up illustration.



|                         |              |
|-------------------------|--------------|
| Leader section          | 400mm Min.   |
| Carrier tape start size | 100mm Min.   |
| Trailer section size    | 160mm Min.   |
| Quantity                | 2000pcs/Roll |
| 产品单重(g/pcs)             | 0.096        |



Note:

|            |
|------------|
| Spec. No.: |
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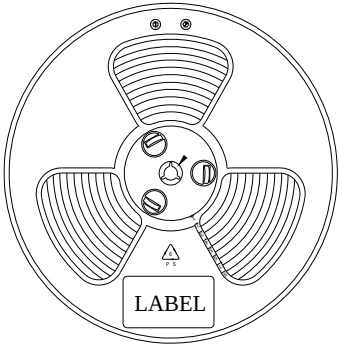
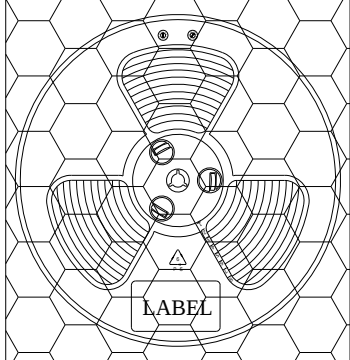
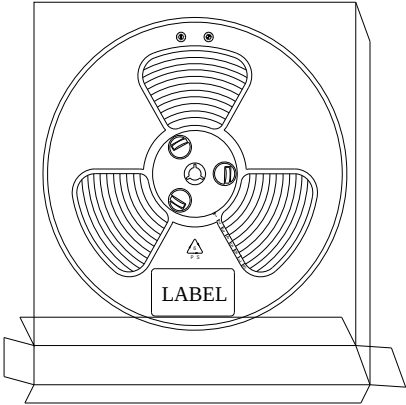
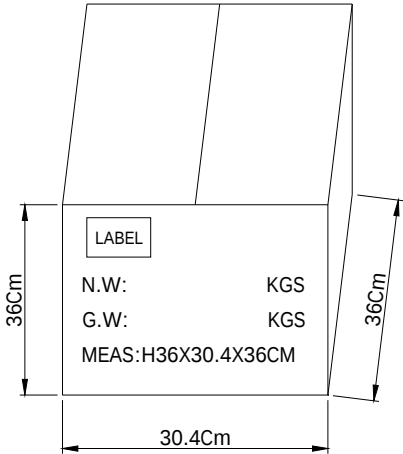
S-020-G0143

# SPECIFICATION

|               |       |
|---------------|-------|
| Customer: 安克华 | Type: |
|---------------|-------|

## 4. Packing specification

### 4-3.PACKING LIST

|                                                                                                                                                                                                                                                                                                                                               |                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
|  <p>A top-down view of a circular roll of tape. The tape is wound around a central hub with four mounting holes. A label is attached to the bottom of the roll, featuring a triangle symbol and the word 'LABEL'.</p>                                        | <p>Quantity: 2000pcs/Roll</p>                                                                                      |
|  <p>A top-down view of the same circular roll of tape, now enclosed within a larger, hexagonal-patterned bag, representing a PE bag.</p>                                                                                                                    | <p>Quantity: 2000pcs/Roll<br/>作业说明: 编带检查好的产品放进PE袋中</p>                                                             |
|  <p>A perspective view of an open inner box containing two rolls of tape, one in front of the other. Each roll has a label with a triangle symbol and the word 'LABEL'.</p>                                                                                | <p>Quantity: 2000pcsx2Roll=4000pcs/inner box</p>                                                                   |
|  <p>A perspective view of a rectangular outer carton box. The front face has a label with the following text: 'LABEL', 'N.W: KGS', 'G.W: KGS', and 'MEAS:H36X30.4X36CM'. Dimensions are indicated: height is 36cm, width is 30.4cm, and depth is 36cm.</p> | <p>Quantity: 5inner box/carton=4000pcsx5=20000pcs/carton<br/>作业说明: A.在外箱位置贴一张外箱标签.<br/>B.当尾数箱不足一整箱时需用内盒或填充物装满.</p> |

|       |                           |
|-------|---------------------------|
| Note: | Spec. No.:<br>S-020-G0143 |
|-------|---------------------------|

# S P E C I F I C A T I O N

Customer: 安克华

Type:

## 5. General characteristics

5-1.Storage temperature range :  $-40^{\circ}\text{C} \sim +65^{\circ}\text{C}$

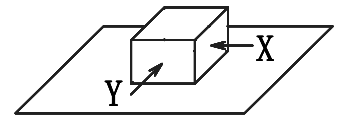
5-2.Operating temperature range:  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$  (Including coil's self temperature rise)

5-3.External appearance : No external defects can be found in the visual inspection.

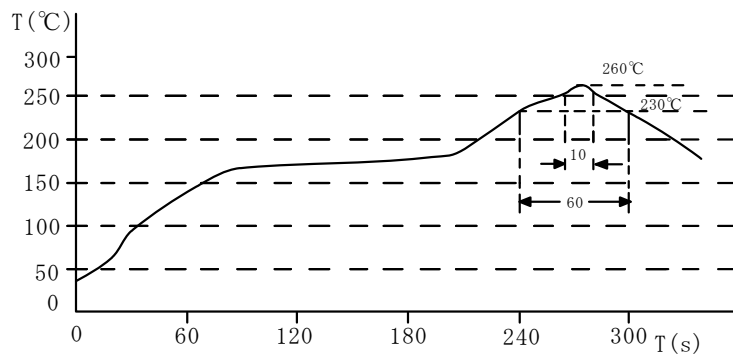
5-4.Storage period of packed product :

The storage period of the packed product is within 6 months after the production. The storage environment is that there are no caustic factors and dew condensation, surrounding temperature is  $5 \sim 40^{\circ}\text{C}$  and relative humidity is  $20 \sim 70\%$ .

5-5.Electrode strength : No electrode detachment should be found when the device is pushed the device is pushed in two directions of X and Y with the force of 5N for  $10 \pm 1$  seconds x after soldering between copper plate and the electrodes. (Refer to figure below) t



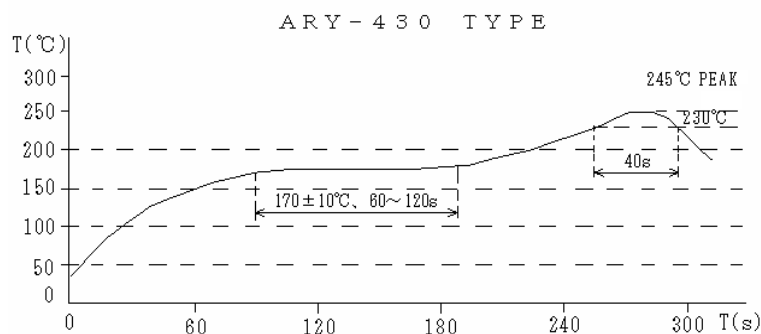
5-6.Heat endurance test :



5-6-1.The test should be made under the conditions according to the chart,after the test it is kept for 2 hours under the normal temperature and humidity.Then,no mechanical and electrical defect should be found out.

5-6-2.The reflow test can be done twice,but the interval should be more than one hour under the normal.

5-7.Recommended reflow condition:(Temperature chart)



5-7-1.The reflow condition recommended above is according to the machine used our company.Big differences will arise as result of the type of machine,reflow conditions,method,ETC,used. Hence,be fore setting up your reflow conditions,please confirm with the above.

5-7-2. Moreover,please clear all doubts with our company before starting.

Note:

Spec. No.:

S-020-G0143