

XSEMITRON DFN2x3 Tape & Reel Packing Specification

Rev.	Content	Date	Made by	Reviewed by
1.0	Initial release	20250303	Freda Wei	

1. Content

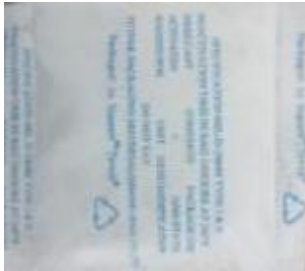
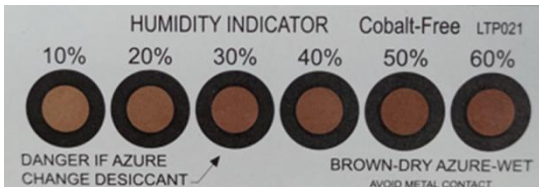
1.1 Packaging quantity

	Packaging	Units/Reel	Reels/Inner Carton	Inner Cartons/Outer Carton	Units/Outer Carton
1	DFN2*3*0.55	3000	10	4	120,000
2	DFN2*3*0.4	3000	10	4	120,000

*Note: Refer to the attachment for outer carton and inner carton dimensions.

1.2 Packaging Material Specifications

Type	Illustration	Specification Requirements
Carrier Tape		1. Applicable to DFN 2 × 3 packages. Different package thicknesses require different carrier tape configurations. 2. Color: black, W = 12 mm 3. Detailed dimensions are specified in Appendix 2.1.
Cover Tape		1. Material: PVC; color: transparent 2. Heat-sealable cover tape.
Adhesive tape		Paper adhesive tape, white

Reel		1. Material: PVC; color: blue or white. 2. 7-inch reel, W=12 mm 3. Standard quantity: 3,000 units per reel.
Desiccant		1. Desiccant for electronic products. 2. Eco-friendly, cobalt-free, and halogen-free. 3. Specification: 10g per pack.
Humidity Indicator Cards(HIC)		1. One 6-spot HIC (10-60%). 2. Eco-friendly: cobalt-free and halogen-free. 3. Color change: brown in the dry state and blue when exposed to moisture.

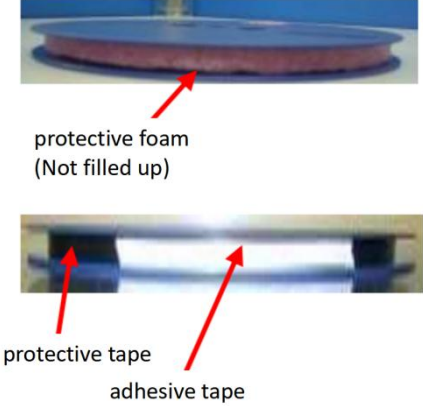
Reel Protection Tape		1. Color: black, W = 12 mm
Transparent Sealing Tape		1. Transparent, width $\geq$ 50 mm.
Protective Foam		2. Foam inserts, pink, W=12 mm
7-inch Aluminum Foil Bag (Moisture Barrier Bag, MBB)		1. Approximately 250 x 210 mm (L x W) 2. Silver; sealed on three sides with an opening on one side (the short side) 3. Single-layer thickness: no less than 0.12 mm 4. Must include Moisture Sensitivity Level (MSL) information and an ESD protective symbol.

Defective Product Packaging Bag		Translucent aluminum foil, silver.
Bubble wrap		1. Approx. 165 mm × 135 mm (L × W). 2. Color: red.
Inner Carton		1. 210 x 210 x 210 mm (see Attachment 6.2 for details). 2. Standard carton with internal dividers creating 10 compartments. 3. Includes standard shipping and handling markings. 4. Material: Grade A kraft linerboard, 3-ply; corrugated board thickness: 1.6 mm. 5. Bursting strength: Not less than 600 kPa. 6. One inner carton can hold 10 vacuum-packed reels, the standard full carton contains 30,000 units.
Outer carton		1. 445 x 445 x 230 mm (see Attachment 6.3 for 2. General standard carton type. 3. Includes standard shipping and handling markings. 4. Material: Grade A kraft linerboard, 5-ply; corrugated board thickness: 5 mm. 5. Bursting strength: Not less than 1200 kPa. 6. One outer carton can hold 4 inner carton fully. A fully loaded outer carton contains 120,000 units.

Moisture-proof bag* (Optional)		1. Transparent PVC 2. Suitable for the size of the outer cartons
Label		Please refer to the "XSEMITRON HK Warehouse Label Specification".

1.3 packaging procedures

Step	Illustration	Description
Product Placement	 DFN	When the sprocket holes are positioned at the top, Pin 1 shall be located at the upper-right corner. The illustration is for reference only and shows the relative position of Pin 1; it does not represent the actual product dimensions.

Winding		1. The reel winding direction shall be as shown in the illustration. 2. Each reel shall contain 3,000 units. 3. A minimum of 30 empty pockets shall be provided at the leader end, and a minimum of 140 empty pockets shall be provided at the trailer end. Alternatively, the leader length shall be ≥ 120 mm and the trailer length shall be ≥ 500 mm.
Add protective foam	 protective foam (Not filled up) protective tape adhesive tape	1. Fill the gaps completely with protective foam, wrap the outer ring with black protective tape, and secure it with adhesive tape. 2. After wrapping, the padding inside the reel shouldn't have any gaps larger than 1 cm from the outer edge of the reel.
Labeling & placing desiccant & HIC		1. Stick the product label on the reel. 2. Place a packet of desiccant and a HIC. 3. For batch products, two labels are needed to match the product information.
Vacuum Packaging	 Seal Label Anti-static label	1. Place the reel into a Moisture Barrier Bag (MBB). 2. The vacuum packaging shall be sufficient to prevent free movement of the reel within the bag. 3. After vacuum sealing, allow the package to stand for at least 30 minutes to verify that no air leakage is present. Attach a label identical to the one on the reel to the side bearing the ESD symbol.

Inner carton packaging	 General QA Seal Label (same side) Label	1. 10 vacuum-packed reels per inner carton. A full carton contains 30,000 units. 2. All labels are oriented in the same direction. 3. If the quantity does not fill a complete carton, items should be placed centrally. The carton should be stamped with 'PARTIAL'. 4. If there are multiple inner carton labels, they shall be affixed side by side on the same side. 5. After sealing the carton, attach the QA seal.
Outer carton packaging	 Label System outer box label "PARTIAL" General QA Seal	1. One standard outer carton contains 4 inner cartons, filled with the standard quantity of 120,000 pieces. 2. If the carton is not full, mark PARTIAL on the outer carton. If empty cartons are used for filling, mark EMPTY on the empty cartons. 3. Labels should be placed on the upper left corner of the front blank area of the outer carton. Multiple labels should be placed side by side. 4. Seal with a QA seal. Use a transparent plastic moisture-proof bag to seal the entire carton.

1.4 Lot consolidation rules

1. Products with different part numbers shall not be consolidated into the same lot.
2. Products with the same part number but different information following the “#” in the Tracking

No. shall not be consolidated. If the part numbers are the same and the information following the “#” in the Tracking No. is identical, the remaining quantity from the previous order may be consolidated with the subsequent order.

For example, for the same part number, if Order A has a Tracking No. of `AB1234~A;#MAC060606;B2F1`, and Order B has a Tracking No. of `AB5678~A;#MAC060606;B2F1`, the information following the “#” is identical (`MAC060606;B2F1`). Therefore, the two orders may be consolidated.

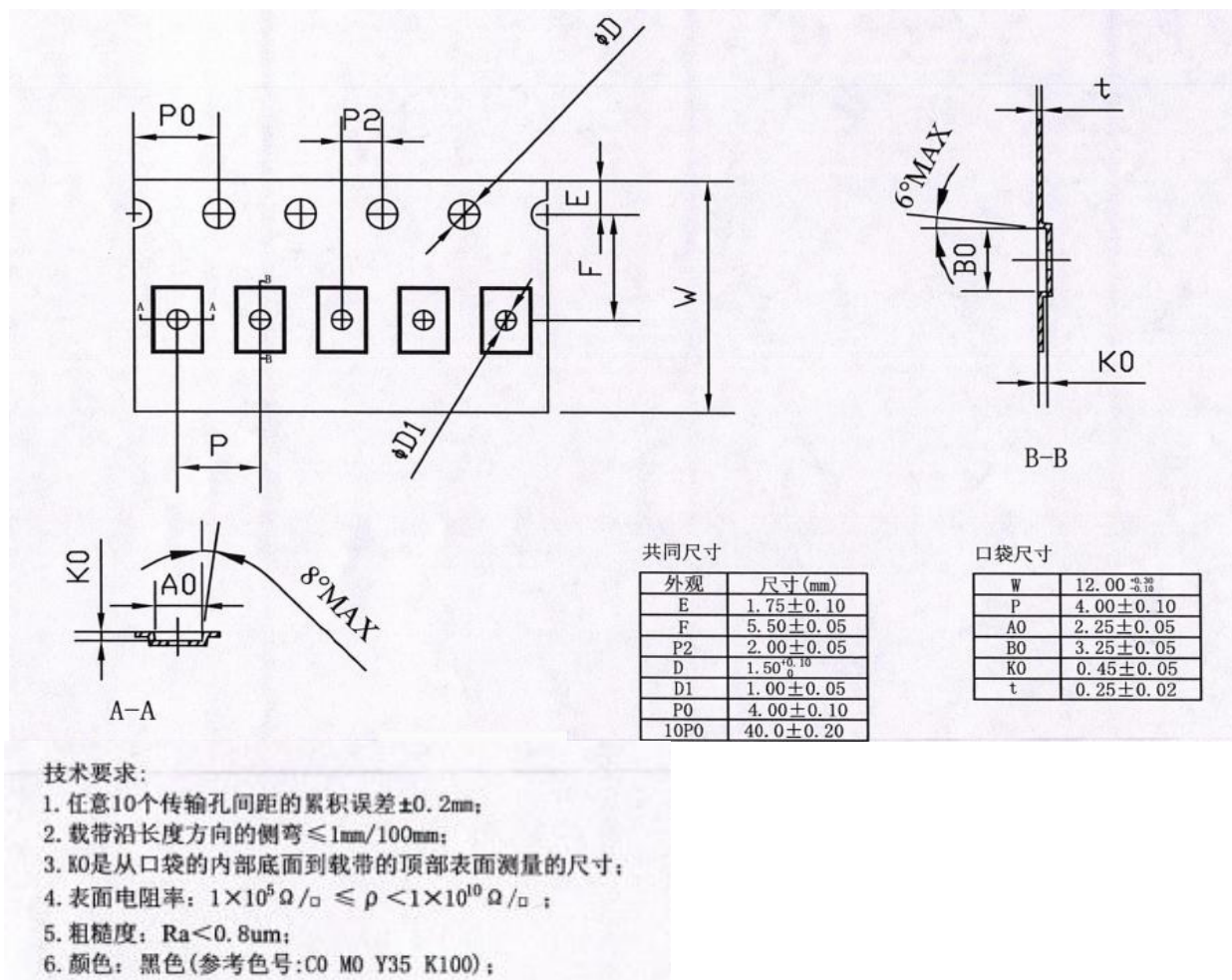
3. Lot consolidation shall comply with the following rules:

- (1) A maximum of two different Date Codes (DCs) may be consolidated within one inner carton.
- (2) A maximum of four different Date Codes (DCs) for the same part number may be included in one outer carton.
- (3) If a proposed consolidation does not comply with the above rules, the consolidation plan shall be confirmed with XSEMICON Quality and Engineering personnel.

2. Appendix

2.1 Carrier tape drawing:

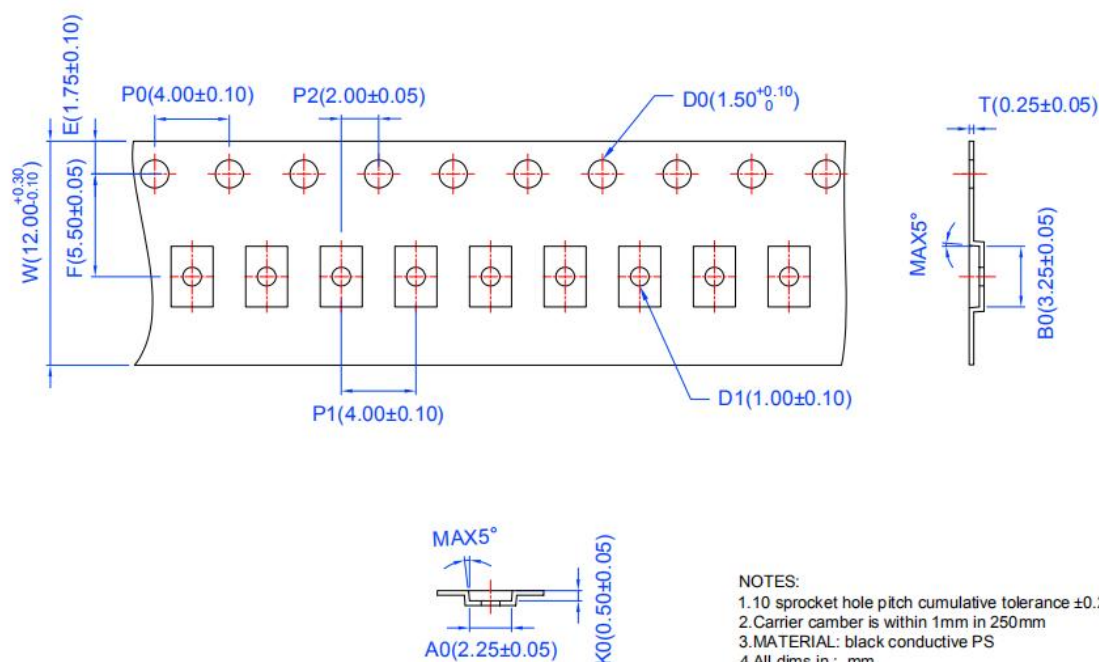
1) DFN2*3*0.4 ①:



Technical Requirements:

- Cumulative pitch tolerance over any 10 consecutive sprocket holes: ± 0.2 mm.
- Lateral bend of the carrier tape along the length direction: ≤ 1 mm/100mm;
- K0 is the distance from the bottom of the carrier tape pocket to the top surface of the carrier tape.
- Surface resistivity: $1 \times 10^5 \Omega /_{sq} \leq \rho < 1 \times 10^{10} \Omega /_{sq}$;
- Roughness: $R_a \leq 0.8 \mu m$;
- Color: black (reference color code: C0 M0 Y35 K100);

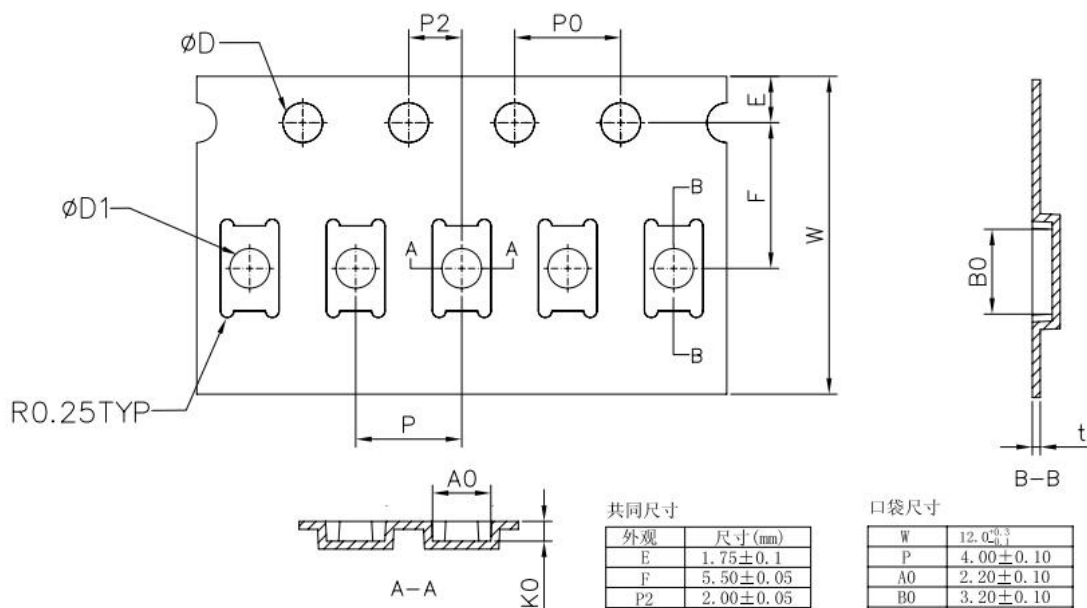
2) DFN2*3*0.4 ②:



NOTES:

1. 10 sprocket hole pitch cumulative tolerance $\pm 0.2\text{mm}$
2. Carrier camber is within 1mm in 250mm
3. MATERIAL: black conductive PS
4. All dims in : mm
5. There must not be foreign body adhesion and the state of the surface must be excellent
6. Surface resistance $1 \times 10^4 \leq R_s \leq 1 \times 10^{11} \text{ OHMS}$

3) DFN2*3*0.55 Carrier Tape ①:



技术要求:

1. 任意10个传输孔间距的累积误差 $\pm 0.2\text{mm}$;
2. 载带沿长度方向的侧弯 $\leq 1\text{mm}/100\text{mm}$;
3. 从口袋内部底面上方为0.3mm处测定A0及B0;
4. K0是从口袋的内部底面到载带的顶部表面测量的尺寸;

共同尺寸

外观	尺寸(mm)
E	1.75 ± 0.1
F	5.50 ± 0.05
P2	2.00 ± 0.05
D	1.5 ^{+0.1} ₀
D1	1.50MIN
P0	4.0 ± 0.1
10P0	40.0 ± 0.20

口袋尺寸

W	12.0 ^{+0.3} _{0.1}
P	4.00 ± 0.10
A0	2.20 ± 0.10
B0	3.20 ± 0.10
K0	0.75 ± 0.10
t	0.30 ± 0.05

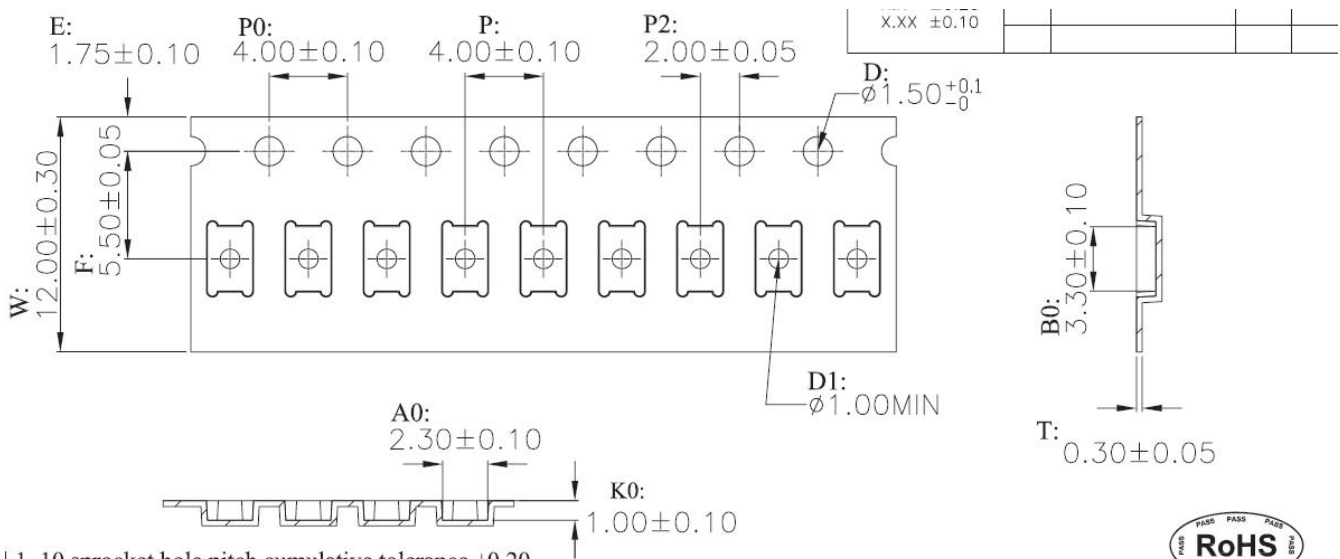
技术要求:

- 任意10个传输孔间距的累积误差 $\pm 0.2\text{mm}$;
- 载带沿长度方向的侧弯 $\leq 1\text{mm}/100\text{mm}$;
- 从口袋内部底面上方为 0.3mm 处测定A0及B0;
- K0是从口袋的内部底面到载带的顶部表面测量的尺寸;
- 表面电阻值: $10^5 \sim 10^9 \Omega/\square$;
- 粗糙度: $Ra < 0.8\mu\text{m}$;
- 颜色: 黑色(参考色号:C0 M0 Y35 K100);

Technical Requirements:

- Cumulative pitch tolerance over any 10 consecutive sprocket holes: $\pm 0.2\text{ mm}$.
- Lateral bend of the carrier tape along the length direction: $\leq 1\text{ mm}/100\text{mm}$;
- K0 is the distance from the bottom of the carrier tape pocket to the top surface of the carrier tape.
- Surface resistance value: $10^5 - 10^9 \Omega / \text{sq}$;
- Roughness: $Ra \leq 0.8 \mu\text{m}$;
- Color: black (reference color code: C0 M0 Y35 K100);

4) DFN2*3*0.55 Carrier Tape ②:

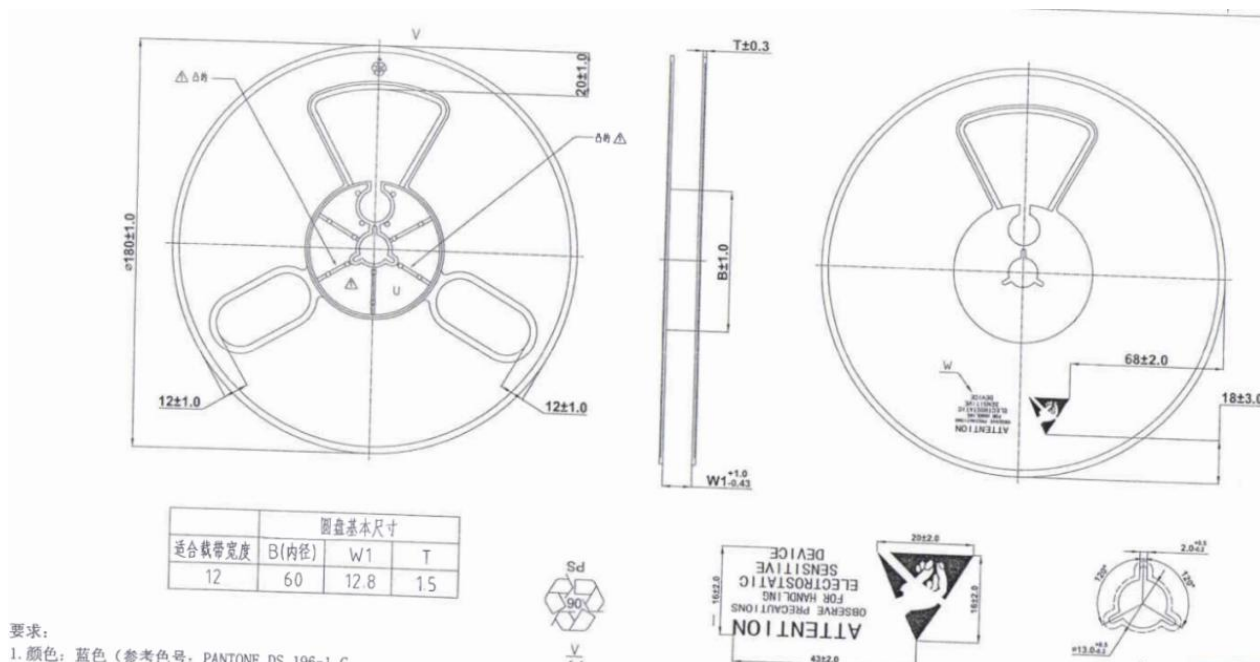


- 10 sprocket hole pitch cumulative tolerance ± 0.20 .
- Carrier camber is within 1 mm in 250 mm.
- Material : Black Conductive Polystyrene Alloy.
- All dimensions meet EIA-481-D requirements.
- Thickness : $0.30 \pm 0.05\text{mm}$.
- Packing length per 19" reel : 500.0 Meters.(復卷)
- Component load per 13" reel : 10000 pcs.
- 载带正面背面阻抗范围 E6--E11 以内

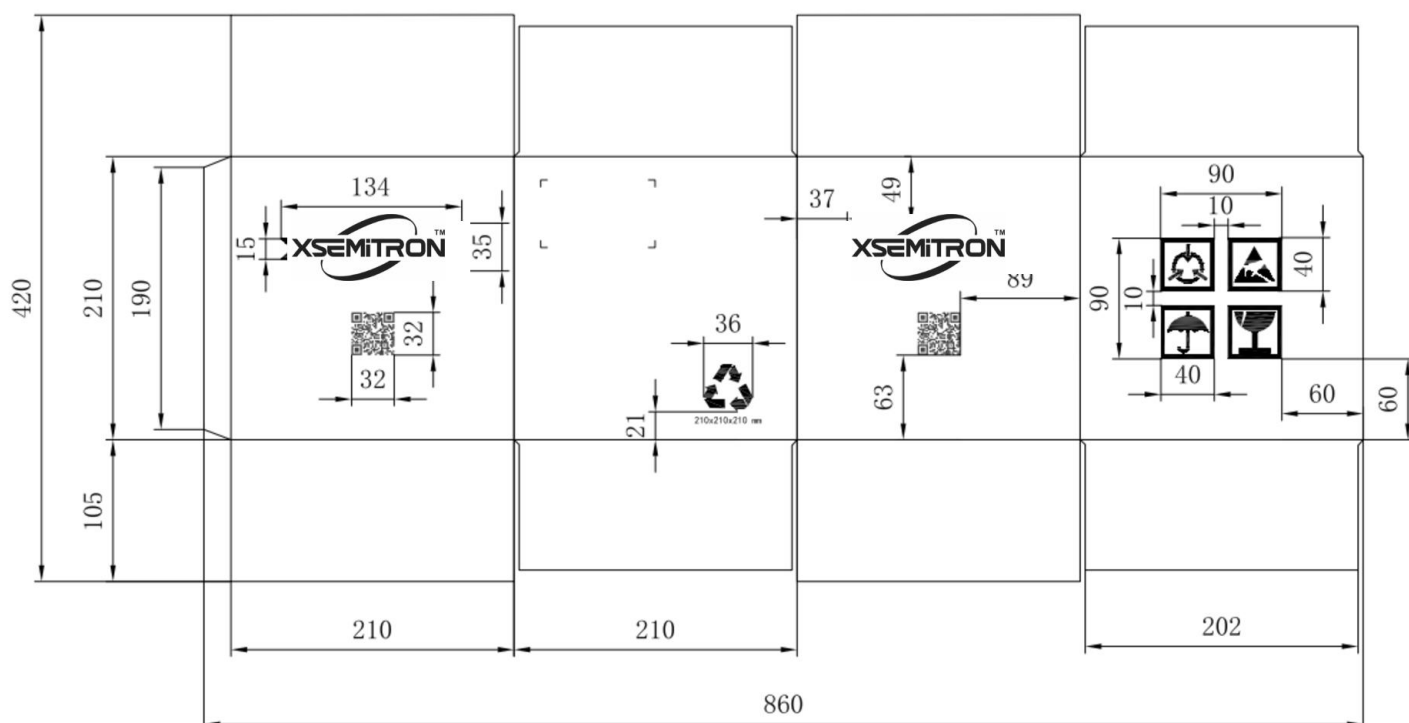


W	12.00 ± 0.30
A0	2.30 ± 0.10
B0	3.30 ± 0.10
K0	1.00 ± 0.10

5) Reel :



2.2 Inner carton drawing



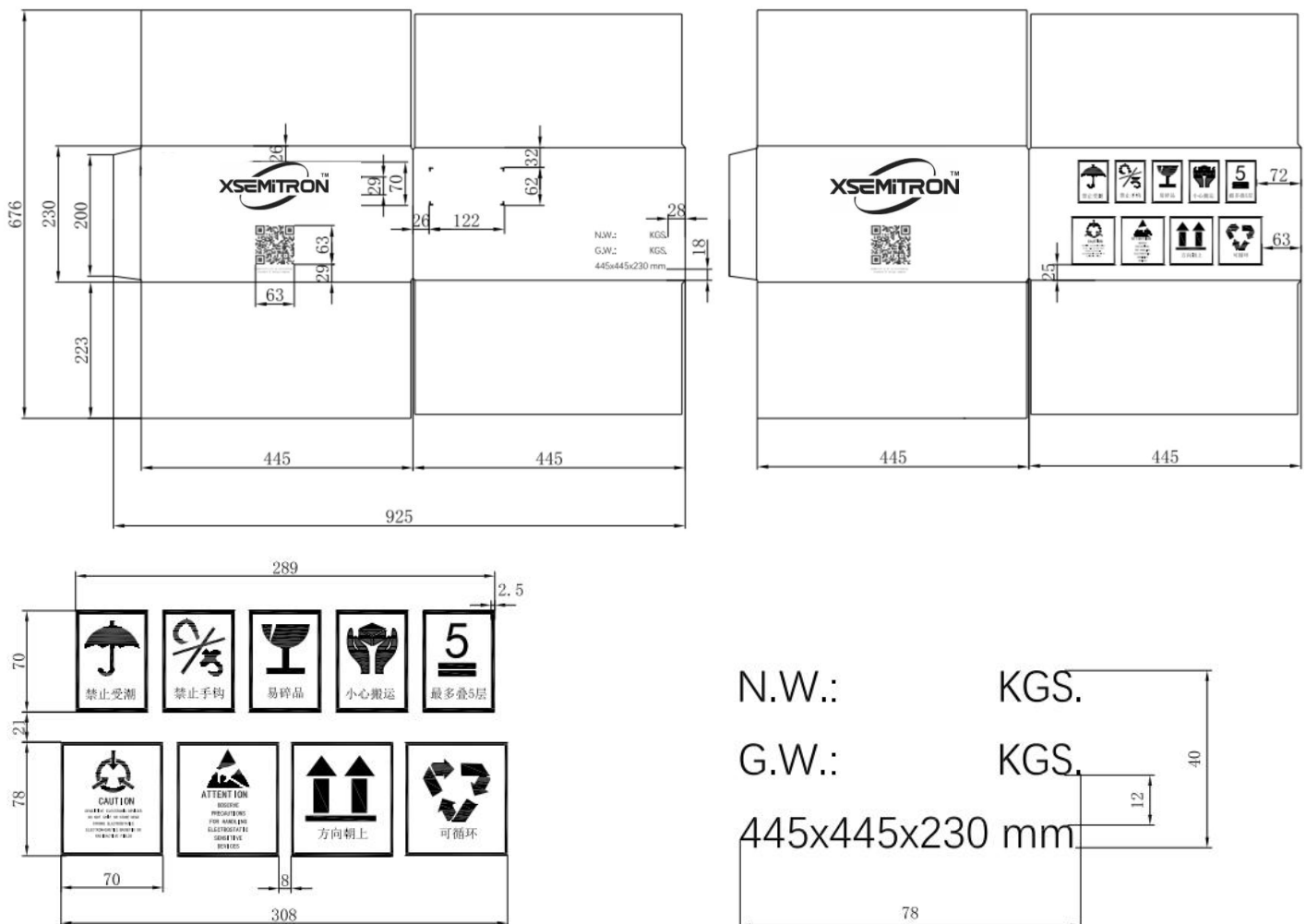
技术要求:

1. 包装盒由虚线折叠装订而成, 成型后内部尺寸为: 210mm*210mm*210mm;
2. 未注公差均按 $\pm 2.0\text{mm}$ 计算;
3. 打印标志如图所示, 除客户Logo标志中有红色, 其余均为黑色;
4. 包装盒表面为其本色(土黄色), 盒体应结实、美观;

Technical Requirements:

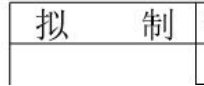
1. The carton shall be folded and assembled along the indicated dotted lines. After forming, the internal dimensions are: 210mm $\times$ 210mm $\times$ 210mm.
2. All tolerances not specified are calculated as $\pm 2.0\text{mm}$.
3. The surface of the packaging box is its original color (tan). The carton shall be structurally sound and free from visible defects.

2.3 Outer carton drawing



技术要求:

1. 包装箱由虚线折叠装订而成,成型后内部尺寸为: 445mm*445mm*230mm;
2. 未注公差均按 $\pm 5.0\text{mm}$ 计算;
3. 打印标志如图所示, 除客户Logo标志中有红色, 其余均为黑色;
4. 纸箱表面为其本色(土黄色), 纸箱应结实、美观;
5. 需使用双瓦楞纸, 强度K=K或以上;
 - 1) 耐破强度: $16.5\text{kg}/\text{cm}^2$;
 - 2) 堆叠2500mm, 纸箱不变形。



Technical Requirements:

1. The carton shall be folded and assembled along the indicated dotted lines. After forming, the internal dimensions are: $445\text{mm} \times 445\text{mm} \times 230\text{mm}$.
 1. All tolerances not specified are calculated as $\pm 5.0\text{mm}$.
 4. The surface of the packaging box is its original color (tan). The carton shall be structurally sound and free from visible defects.
 2. Double-wall corrugated board with a minimum grade of K/K.
 3. Burst Strength: $16.5\text{kg}/\text{cm}^2$;
 4. Stack 2500mm high, and the carton will not deform.