



江苏长晶科技股份有限公司
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

产 品 规 格 书

SPECIFICATIONS FOR PRODUCT

产品类型 TYPE : Crystal Oscillator

产品规格 SPEC : 12.288MHz/3225/3.3V

产品型号 P/N : CJO05-122883320B30

日期 DATE : 2024/12/02

核准及签名

R&D APPR. SIGNATURED

拟制 ISSUE	审核 CHECK	批准 APPROVAL
Ivan 2024/12/02	Abbey 2024/12/02	Ken 2024/12/02

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Specification Revision Record Sheet

**SMD3.2 * 2.5 Crystal Oscillator****CJO05-122883320B30****1. Scope:**

- 1.1 This specification applies to the RoHS/HF crystal oscillator with a frequency of 12.288MHz which will be used in electronic equipment.

2. Construction:

- 2.1 Oscillators series: SMD 3.2×2.5 XO
2.2 Package: SMD 3.2×2.5

3. Electrical Characteristics

- | | | |
|------|--|---|
| 3.1 | Nominal Frequency: | 12.288MHz |
| 3.2 | Frequency Stability:
(incl. 25°C tolerance) | ±20ppm |
| 3.3 | Aging: | ±3ppm/year |
| 3.4 | Operating Temperature Range: | -40°C to +85°C |
| 3.5 | Storage Temperature Range: | -55°C to +125°C |
| 3.6 | Input Voltage (V_{DD}): | +3.3 Vdc±10% |
| 3.7 | Input Current (I_{DD}): | 10mA max |
| 3.8 | Output Waveform: | CMOS |
| 3.9 | Output Symmetry: | 50±10% |
| 3.10 | Rise/Fall Time: | 8ns max |
| 3.11 | Output Voltage V_{OL} :
V_{OH} : | 10%VDD
90%VDD |
| 3.12 | Output Load: | 15pF |
| 3.13 | Output State Control(Input to Pin1): | >70%VDD(High voltage or floating),Enable
<30%VDD(Low voltage or GND),Disable |
| 3.14 | Start-up Time: | 5ms max |
| 3.15 | Standby current: | 10μA max |
| 3.16 | Period Jitter: | 40ps max (PK-PK) |
| 3.17 | Phase Jitter(RMS): | 1ps max (12KHz to 20MHz) |
| 3.18 | Oscillation mode: | A1 |
| 3.19 | Others: | Not recommended for safety applications |

Reliability Specifications

4. Reliability Specifications

This is the quality control and quality assurance and reliability tests performance data for the RoHS/HF compliance 12.288MHz SMD3225 4pads crystal oscillator related to the specification and approval sheet provided by JSCJ.

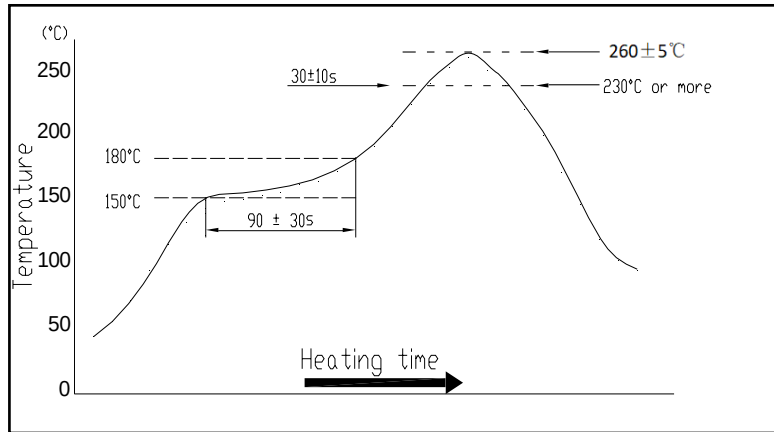
NO.	ITEM	SPECIFICATION	TEST METHOD
4.1	Gross leak	$\Delta FL \leq \pm 10 \text{ppm}$	Dipped in DO2 2h 0.5 $\pm$ 0.02Mpa.
4.2	Fine leak	LEAK<1*10-8atm cc/sec	Helium Bombing, 0.5 $\pm$ 0.02Mpa, at least 1h.
4.3	Free fall	$\Delta FL \leq \pm 5 \text{ppm}$	Free fall from 75cm table to 3cm thickness hard wood board 3 times.
4.4	Resistance to soldering heat	$\Delta FL \leq \pm 5 \text{ppm}$	260°C 10s min, 183°C 120s, 2times.
4.5	Low temperature storage	$\Delta FL \leq \pm 10 \text{ppm}$	In the -40°C icebox 500h.
4.6	High temperature storage	$\Delta FL \leq \pm 10 \text{ppm}$	In the 125°C for 500h.
4.7	Mechanical shock	$\Delta FL \leq \pm 5 \text{ppm}$	1000G, 0.5ms, 3times each axis.
4.8	High temp. and humidity	$\Delta FL \leq \pm 10 \text{ppm}$	85°C $\pm$ 3°C/RH 85% 500h.
4.9	Temperature cycle	$\Delta FL \leq \pm 10 \text{ppm}$	-40~85°C dwel 15' 100 cycles.
4.10	Aging	$\Delta FL \leq \pm 7 \text{ppm}$	85°C aging 500h.
4.11	OTHERS		

Notes : The above test items and judgment standards are for reference only, and the actual reliability report shall prevail.

5. Recommended Reflow soldering condition (SMD)

Solder profile

Peak: $260 \pm 5^{\circ}\text{C}$ Soldering zone: 230°C or more, $30 \pm 10\text{s}$. Pre-heating zone 1: $150 \sim 180^{\circ}\text{C}$, $90 \pm 30\text{s}$

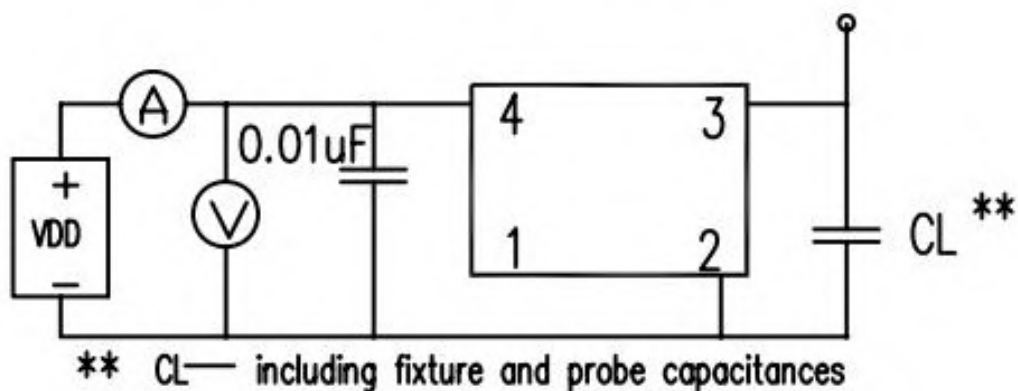


Temperature profile for reflow soldering

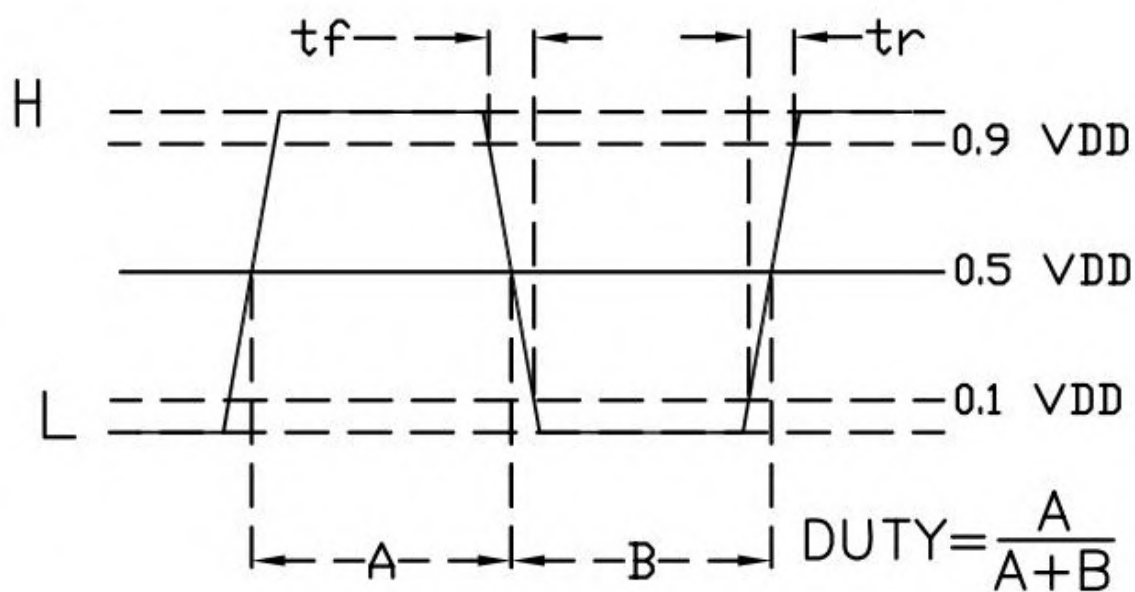
6. Soldering iron method

Bit temperature: $350 \pm 10^{\circ}\text{C}$ Application time of soldering iron: $3 \pm 1\text{s}$.

CMOS TEST CIRCUIT

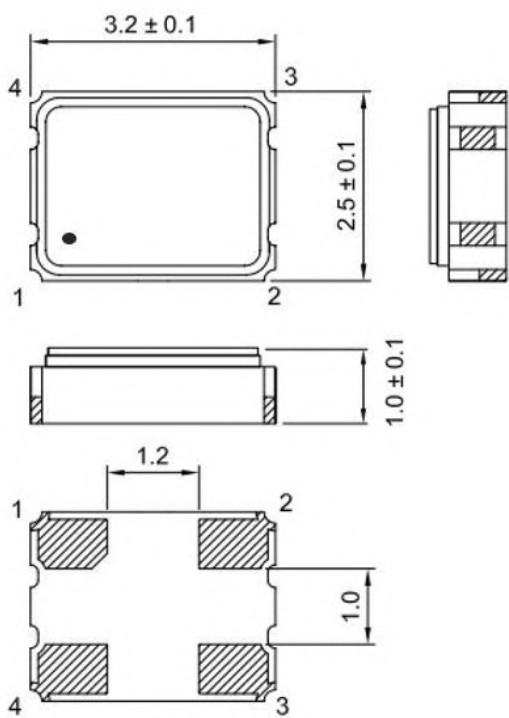


TYPICAL CMOS WAVE FORM



Package Outline Dimensions

Units:mm



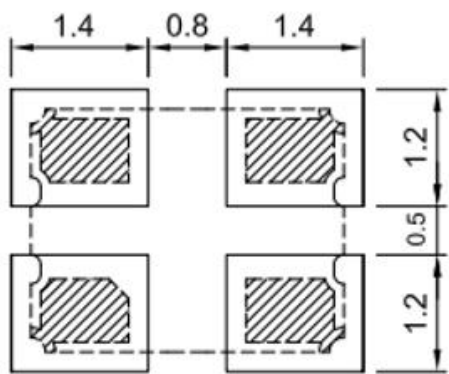
PIN CONNECTION

P/N	CJO05
1	Enable/Disable [*]
2	GND
3	Output
4	VDD

*

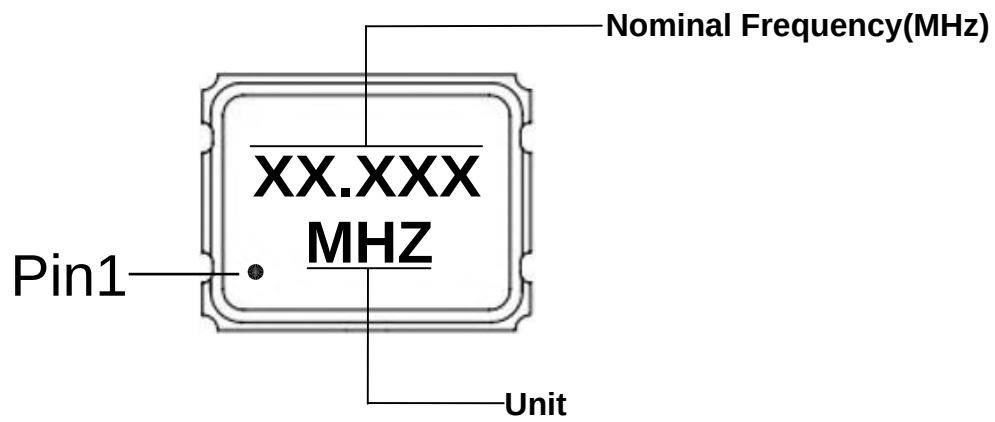
Enable/Disable functional description
When pin1 goes high ($\geq 0.7VDD$) or open ,the Oscillator in normal operation and has output in frequency. When pin1 goes low ($\leq 0.3VDD$) ,the oscillator stops and the oscillator output (Pin3) becomes high impedance.

Suggested Pad Layout

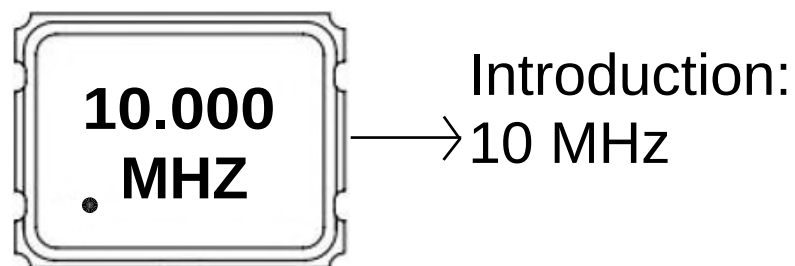


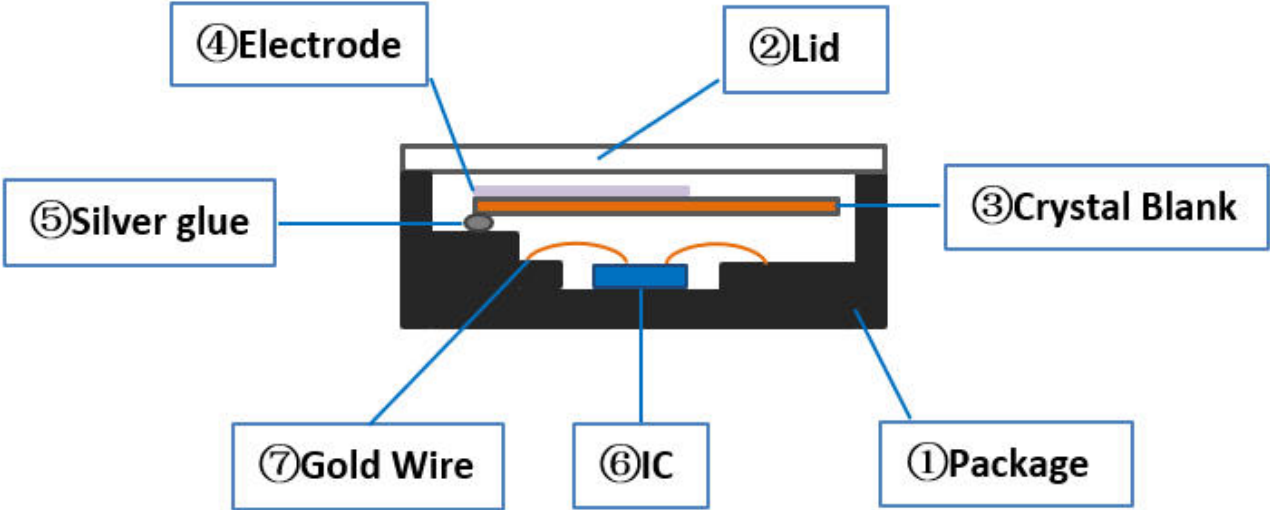
Marking

Procedure: Laser



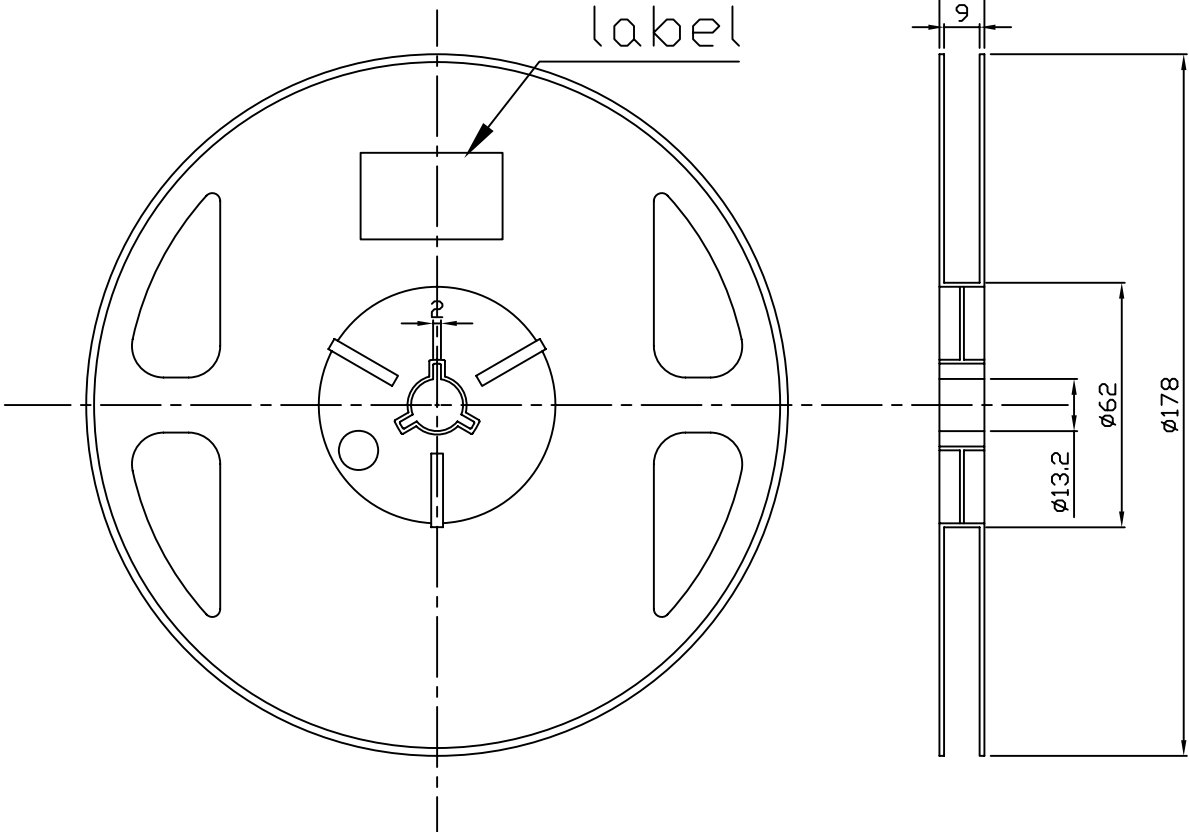
For example:



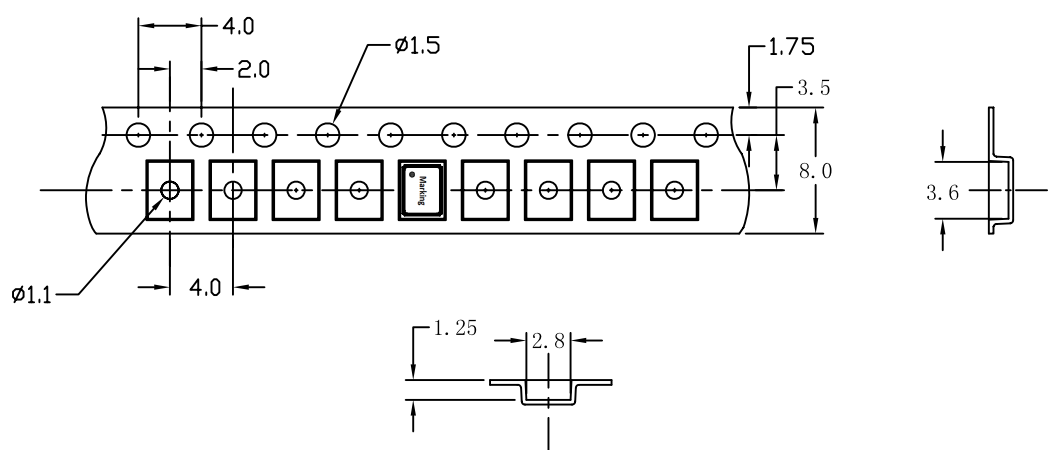


No.	Components	Materials
1	Package	Ceramic(Al_2O_3)
2	Lid	KV($\text{Fe}/\text{Ni}/\text{Co}$)
3	Crystal blank	SiO_2
4	Electrode	Ag、Cr
5	Silver glue	Resin、Ag
6	IC	Si
7	Gold Wire	Au

REEL DIMENSIONS
label



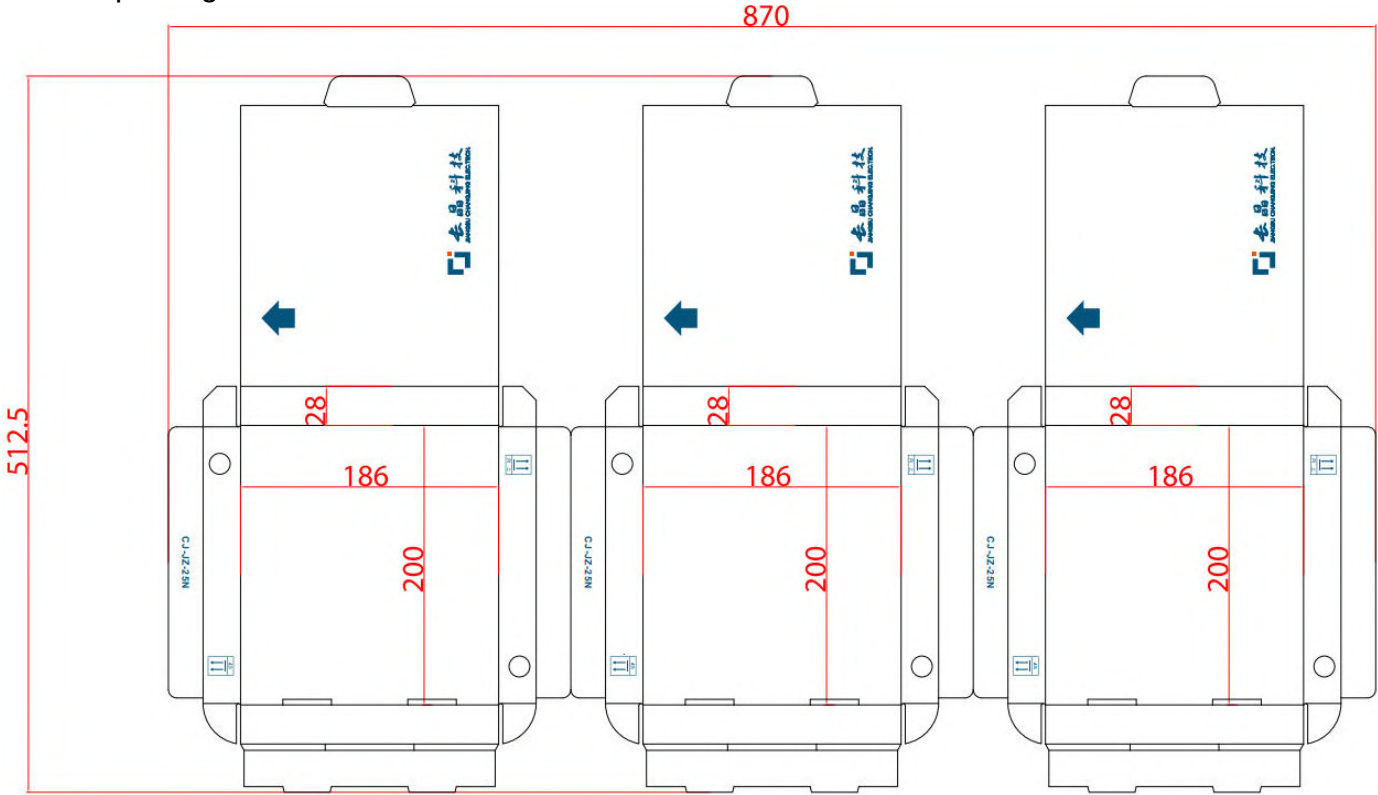
EMBOSSED TYPE DIMENSIONS



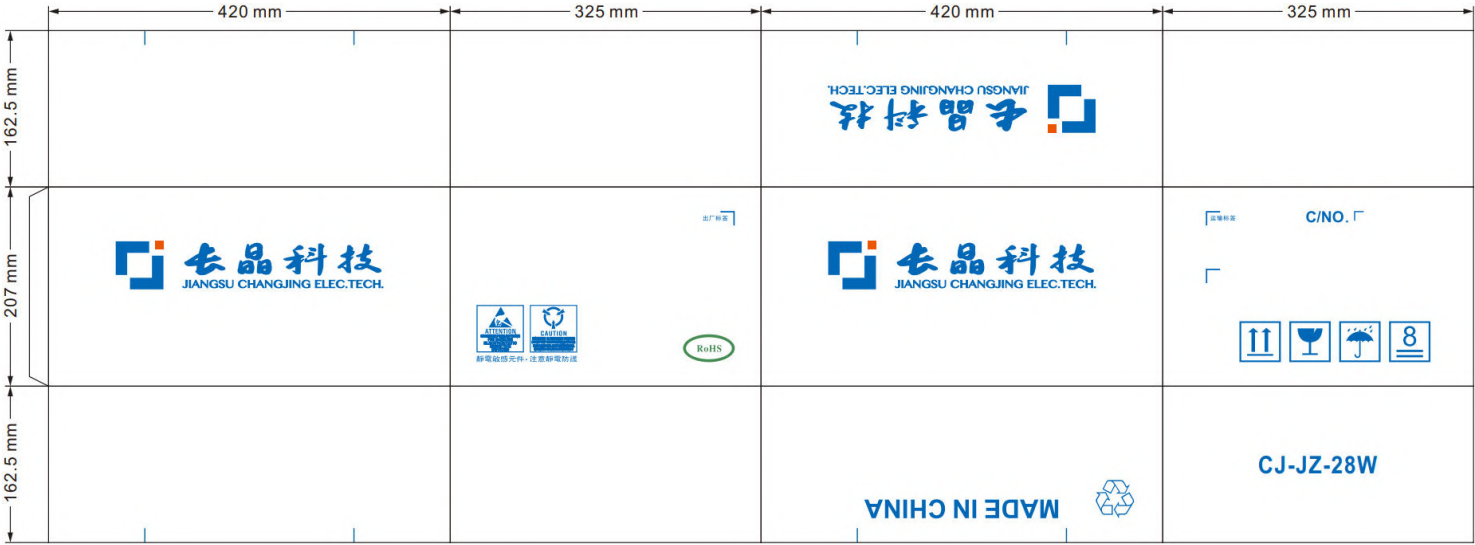
USER FEED DIRECTION
→

Package

Inside package



Outside package



NOTICE

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