# APPROVAL SHEET

 Customer Name :

 Customer P/N :

 Frequency : 39.000000 MHz

 Aker Approved P/N : CXAN-039000-7-D4-00

 Aker MPN : CXAN-039000-7-D4-00

 Rev. : 1

 ISSUE DATE : Feb.10.2023

APPROVED	CHECKED	PREPARED				
(in		Xin				
APPROVED BY CUSTOMER						

# AKER TECHNOLOGY CO., LTD.

ADDRESS: NO 11-3, Jianguo Rd., Tanzi Dist., Taichung City 427, Taiwan.

TEL: 886-4-25335978 FAX: 886-4-25336011

Web: www.aker.com.tw MSL:Level 1

**RoHS** compliant



Aker Approved P/N: CX	XAN-039000-7-D4-00
-----------------------	--------------------

APPROVED: Tin SHEET: 1 of 9

PREPARED : Xin REV. : 1

Confidential

Rev.	Date	Reviser	Revise contents
1	2023/2/10	Xin	Initial Released
	•	•	



Aker Approved P/N:		CXAN-039000-7-D4-00	
APPROVED	:	Tin	SHEET: 2 of 9
PREPARED	:	Xin	REV . : 1

#### SMD CRYSTAL SPECIFICATION

#### 1. ELECTRICAL CHARACTERISTICS

■ Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

Ambient temperature : 25±5 ℃

Relative humidity : 40%~70%

If there is any doubt about the results, measurement shall be made within the following limits:

Ambient temperature: 25±3 ℃

Relative humidity : 40%~70%

■ AKER Model: CXA-751

Oscillation Mode : Fundamental

■ Cutting Mode : AT CUT

■ Measurement Equipment : 250B(Measured FL)

■ Insulation Resistance: More than 500M ohms at DC 100V

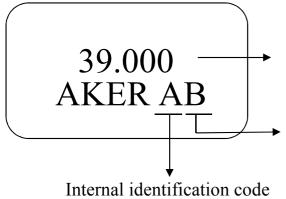
		Electrical Spec				
Parameters	Symbol	Min.	Тур.	Max.	Units.	Notes
Nominal Frequency	FL	3	9.00000	0	MHz	
Frequency Tolerance			±10		ppm	at $25^{\circ}$ C $\pm 3^{\circ}$ C
Frequency Stability		±30		ppm	Operating Temp (Refer 25°C)	
Load Capacitance	CL	16		pF		
Aging		±3		ppm	First Year	
Operating Temperature		-40	~	85	$^{\circ}\!\mathbb{C}$	
Storage Temperature Range		-55	~	125	$^{\circ}\!\mathbb{C}$	
Drive Level	DL			100	uW	
Equivalent Series Resistance	ESR			20	Ω	@Series
Shunt Capacitance	C0			7	pF	

<sup>\*</sup>Please kindly be noted that AKER DO NOT guarantee parts quality which involves human security application.\*



Aker Approved P/N:	CXAN-039000-7-D4-00	
APPROVED :	Tin	SHEET: 3 of 9
PREPARED ·	Xin	REV · 1

#### 2. MARKING:



**FREQUENCY** 

→ Date Code: Please refer to the following table.

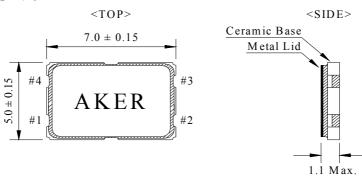
Date Code Guide

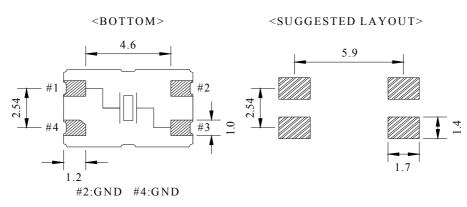
Date code outde						
Year	2021	2022	2023	2024		
	2025	2026	2027	2028		
Month	(4N+1)	(4N+2)	(4N+3)	(4N+0)		
JAN	a	n	Α	N		
FEB	b	p	В	P		
Mar	С	q	C	Q		
Apr	d	r	D	R		
May	e	S	E	S		
Jun	f	t	F	T		
Jul	g	u	G	U		
Aug	h	v	H	V		
Sep	j	w	J	W		
Oct	k	X	K	X		
Nov	1	у	L	Y		
Dec	m	Z	M	Z		
A 1				· ·		

(Unit:mm)

A cycle every four years

#### 3. DIMENSION:

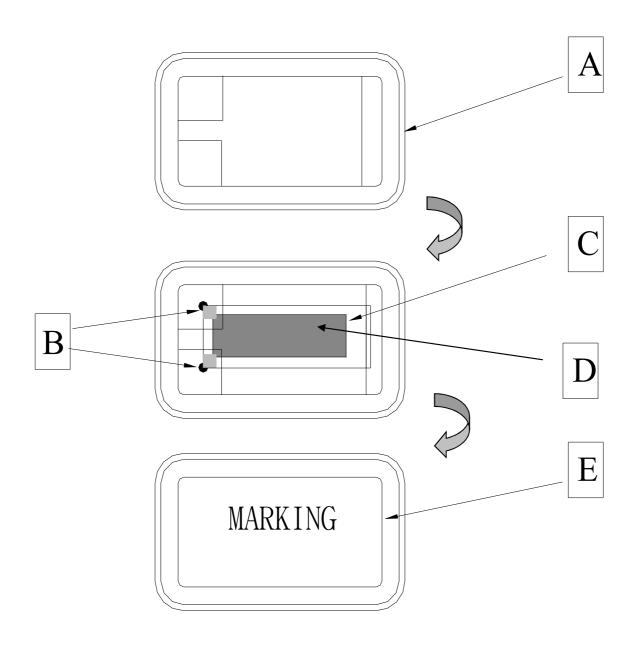






Aker Approved P/N:		CXAN-039000-7-D4-00	
APPROVED	•	Tin	SHEET: 4 of 9
PREPARED	:	Xin	REV . : 1

## 4. STRUCTURE ILLUSTRATION



COMPONENTS		MATERIALS		MPONENTS	MATERIALS
A	Base (Package)	Ceramic(Al <sub>2</sub> O <sub>3</sub> )+Kovar(Fe/Co/Ni)	D	Electrode	Cr / Ag
В	Conductive adhesive	Ag / Silicon resin	Е	Lid	Fe/Co/Ni
С	Crystal blank	SiO <sub>2</sub>			

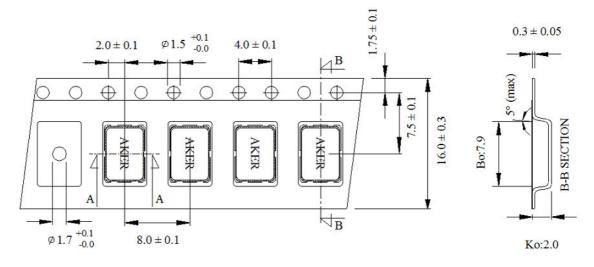


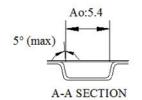
Aker Approved P/N:			CXAN-039000-7-D4-00	
	APPROVED	:	Tin	SHEET: 5 of 9
	PREPARED		Vin	REV · 1

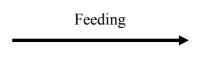
#### 5. PACKING:

#### TAPE SPECIFICATION

(Unit:mm)

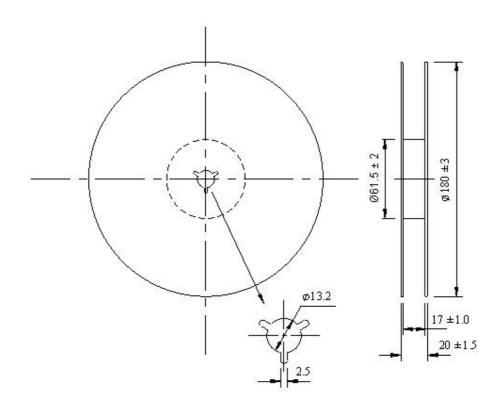






#### **OUTLINE DIMENSION**

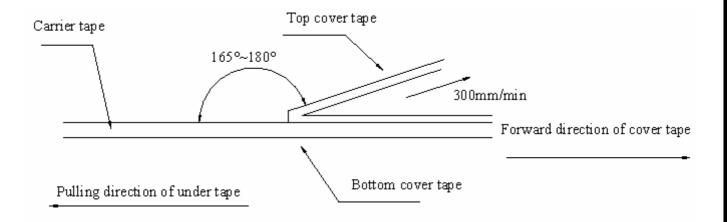
(Unit:mm)





Aker Approved P/N:	CXAN-039000-7-D4-00	
APPROVED :	Tin	SHEET: 6 of 9
PREPARED :	Xin	REV . : 1

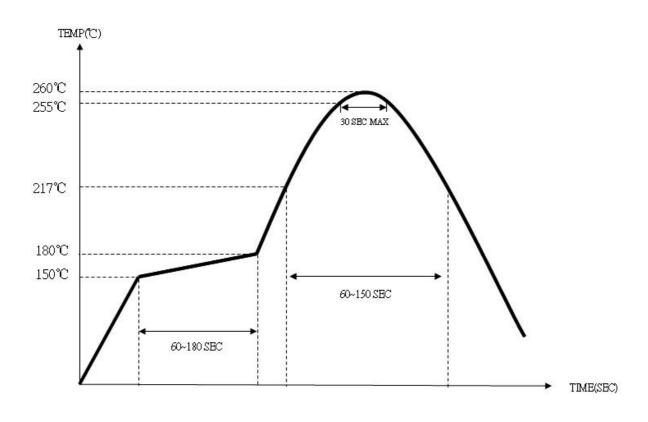
#### **6. COVER TAPE ADHESION STRENGTH:**



\*\*\* In the case, the cover tape is pulled off under the above conditions, the cover tape adhesion strength should be 10.2g~71.4g Plastic tape:10.2g~71.4g

(Cover tape adhesion strength)

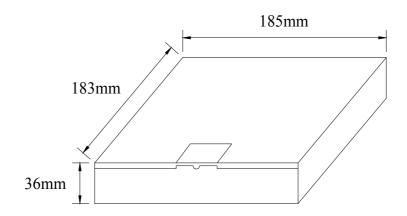
#### 7. SOLDERING REFLOW PROFILE





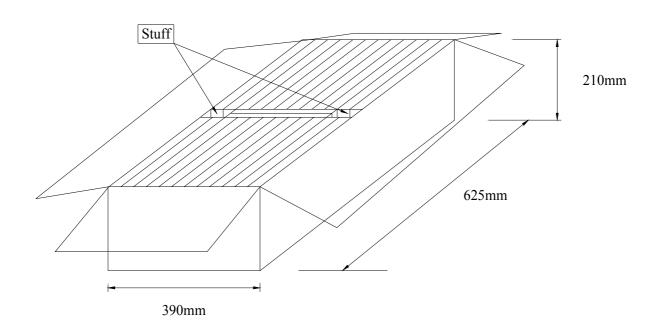
Aker Approved P/N	•	CXAN-0390	000-7-D4-00
APPROVED	:	Tin	SHEET: 7 of 9
PREPARED	:	Xin	REV . : 1

## 8. PACKING:



BOX = 1000 PCS / REEL





SMD product packs 32 BOX = The outside box packs ( 1000 PCS \* 32 BOX = 32000 PCS )(MAX)



Aker Approved P/N:	CXAN-039000-7-D4-00	
APPROVED :	Tin	SHEET: 8 of 9
PREPARED :	Xin	REV · 1

9.	MECHANICAL	PERFORMANCE

9. WIECHAN	ICAL PERFORMANCE	
TEST ITEMS	TEST METHODS AND TEST CONDITION	PERFORMANCE
9.1 Drop Test	The specimen is measured for its frequency and resistance before the test. It is then dropped from a hight of 75 cm or more as a free fall object onto a hard wooden plate of 30mm or more in thickness.  ( in accordance with JIS-C0044 )	
9.2 Vibration Test	The specimen is measured for its frequency and resistance before the test. Most them into X,Y and Z axes, respectively, for the vibration test. Vibration condition:  Frequency range; 20 ~ 2000HZ  Peak to peak amplitude: 1.52 mm  Peak acceleration: 20G  Sweep time: 20 minute / axis  Pendicular total test time: 4 hours	To satisfy the electrical performance.
9.3 Resistance to Soldering Test	( in accordance with MIL-STD-883F : 2007.3 )  The specimen is measured for its frequency and resistance before the test. Place the specimen on the belt of the converynace and let it pass through the reflow with the presetted temperature condition.  After passing twice the reflow place, the specimen under the referee condition for -~2 hours and then measure its electrical performance.  Temperature Condition of IR Simulation:  The temperature range of the preheated section is setted at 150 ~ 180 °C for 60~120 sec. For the next section the temperature range is setted at 217~260 °C for 45~90 sec. and within this time range the specimen should be able to sustain at the peak temperature, 260+/-3 °C , for 10 sec long.  ( in accordance with JESD22-B106-B )	
9.4 Fine Leak Test	Place the specimen in a pressurized container and pressurize it with the detection gas (mixed gas consisting of 95% or more helium) for at least 2 hours. Complete the measurement of the concentration of helium within 30 min after taking it out from the pressurized container.  ( in accordance with MIL-STD-883F: 1014.11)	Less than 1.0 * 10 <sup>-8</sup> atm .c.c. / sec, Helium
	The referee condition.  Temperature $25 \pm 2 ^{\circ}$ C  Humidity $44 ^{\circ} 55 ^{\circ}$ M  Pressure $86 ^{\circ} 106 \text{ kPa}$ ( in accordance with MIL-STD-883E : 1014. 9 )	-



Aker Approved P/N:	CXAN-0390	N-039000-7-D4-00	
APPROVED :	Tin	SHEET: 9 of 9	
PREPARED ·	Xin	REV · 1	

# 10. CLIMATIC RESISTANCE

	IC RESISTANCE	
TEST ITEMS	TEST METHODS AND TEST CONDITION	PERFORMANCE
10.1 Low Temp Exposure Test	The specimen is measured for its frequency and resistance before the test.  Place the specimen in the chamber and kept it at the temperature of - $40 \pm 3^{\circ}$ C for $168 \pm 6$ hours.  Take the specimen out of the chamber and measure itselectrical performance after leaving 1 $^{\circ}$ 2 hours under the referee condition.  ( in accordance with JIS-C0020 )	
10.2 Aging Test	The specimen is measured for its frequency and resistance before the test.  Place the specimen in the testing chamber and keep it at the temperature of $+125 \pm 3^{\circ}$ C for $720 \pm 48$ hours.  And then take the specimen out of the chamber and measure its electrical performance after leaving for $1^{\circ}$ 2 hours under the referee condition.  ( in accordance with JIS-C0021 )	To satisfy the electrical performance .
10.3 High Temperature & High Humidty	The specimen is measured for its frequency and resistance before the test . Place the specimen in the testing chamber and kept it at the temperature of $+85\pm5$ °C and humidity of $85\pm5$ % for $168\pm6$ hours.and then take the specimen out and measure its electrical performance after leaving for 1 $^{\sim}$ 2 hours under the referee condition. ( in accordance with MIL-STD-883F: 1004.7 )	
10.4 Temperature Cycle Test	The specimen is measured for its frequency and resistance before the test . Subject the specimen to the 100 cycles of temperature ranges stated below . High temp . + $125 \pm 3$ °C ( $15\pm 3$ min).	