# APPROVAL SHEET

 Customer
 Name
 :

 Customer
 P/N
 :

 Frequency
 : 39.000000
 MHz

 Aker Approved P/N:
 CXA-039000-7F1X40

 Aker MPN
 : CXA-039000-7F1X40

 Rev.
 : 1

 ISSUE DATE
 : Aug.11.2017

APPROVED	CHECKED	PREPARED
1/in		Kiku
APPROVED BY CU	STOMER	

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Web: www.aker.com.tw

**RoHS** compliant



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PREPARED : Kiku REV . : 1

Rev.	Date	Reviser	Revise contents
1	2017/8/11	Kiku	Initial Released



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#### 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 Model : Fundamental

■ Cutting Model : AT CUT

■ Measurement Equipment : 350A(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	Year
Operating Temperature		-40	~	85	$^{\circ}\!\mathbb{C}$	
Storage Temperature Range		-55	~	125	$^{\circ}\! \mathbb{C}$	
Drive Level	DL			100	uW	
Effective Resistance Rr	Rr			20	Ω	
Shunt Capacitance	C0			7	pF	

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



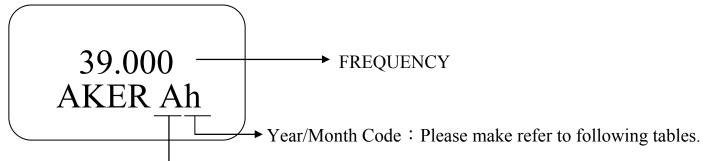
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#### 2. MARKING:

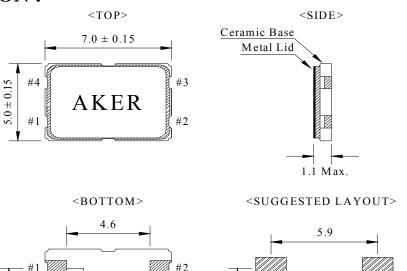


Production line code

2007	2008	2009	2010
2011	2012	2013	2014
2015	2016	2017	2018
2019	2020	2021	2022
2023	2024	2025	2026
Α	N	a	n
В	Р	b	р
С	Q	С	q
D	R	d	r
Е	S	е	s
F	T	f	t
G	U	g	u
Н	V	h	ν
J	W	j	w
K	X	k	х
L	Y	1	у
М	Z	m	Z
	2011 2015 2019 2023 A B C D E F G H J	2011 2012 2015 2016 2019 2020 2023 2024 A N B P C Q D R E S F T G U H V J W K X L Y	2011         2012         2013           2015         2016         2017           2019         2020         2021           2023         2024         2025           A         N         a           B         P         b           C         Q         c           D         R         d           E         S         e           F         T         f           G         U         g           H         V         h           J         W         j           K         X         k           L         Y         l

(Unit:mm)

#### 3. DIMENSION:

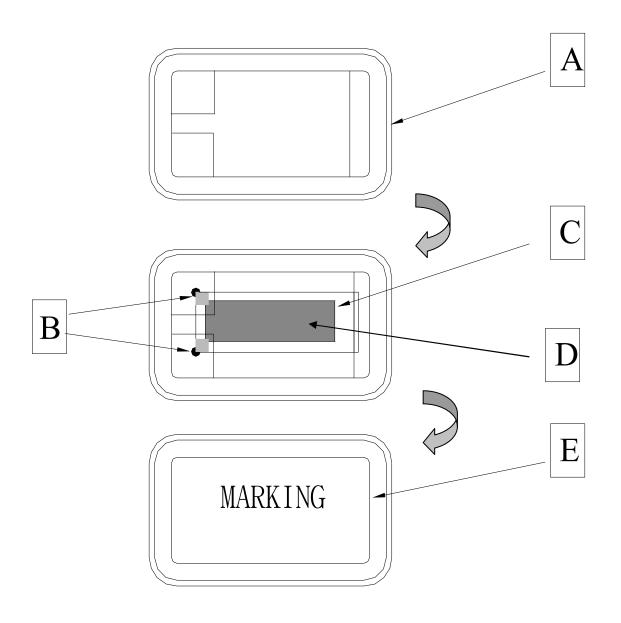


#2:GND #4:GND



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## 4. STRUCTURE ILLUSTRATION



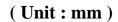
	COMPONENTS	MATERIALS	COMPONENTS		MATERIALS
A	Base (Package)	Ceramic(Al <sub>2</sub> O <sub>3</sub> )+Kovar(Fe/Co/Ni)	D	Electrode	Cr / Ag
В	Conductive adhesive	Ag / Silicon resin	Е	Lid	Fe/Co/Ni
С	Crystal blank	SiO <sub>2</sub>			

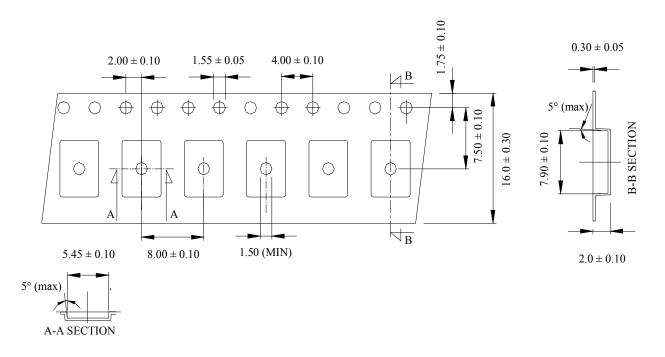


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#### 5. PACKING:

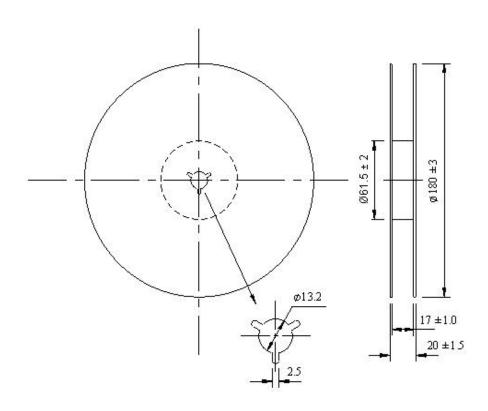
#### TAPE SPECIFICATION





#### **OUTLINE DIMENSION**

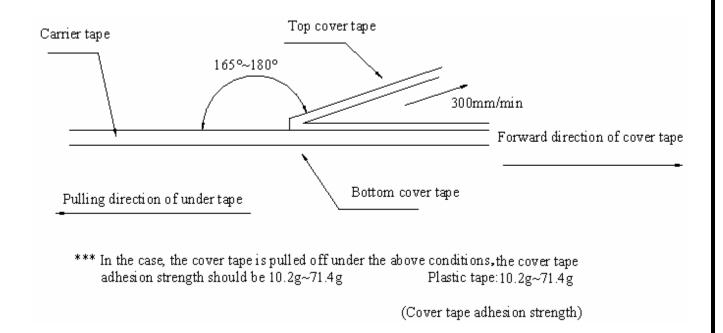
(Unit:mm)



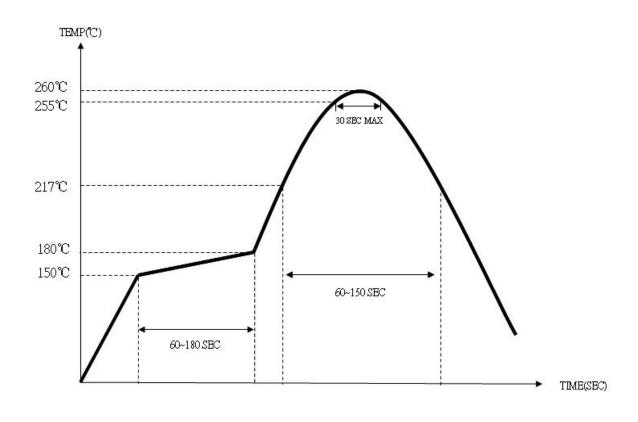


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#### **6. COVER TAPE ADHESION STRENGTH:**



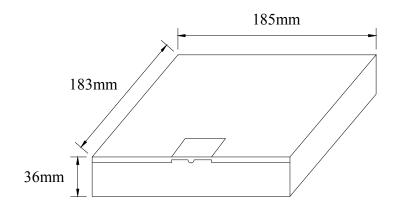
### 7. SOLDERING REFLOW PROFILE





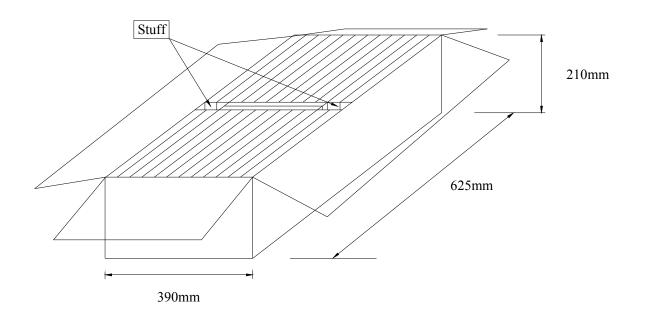
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## 8. PACKING:



BOX = 1000 PCS / REEL





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



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## 9. MECHANICAL 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 100 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	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.
0.2 Posistance to	( in accordance with MIL-STD-883F: 2007.3 )	
9.3 Resistance to Soldering Test	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.	Less than 1.0 * 10 <sup>-8</sup> atm .c.c. / sec, Helium
	( in accordance with MIL-STD-883F: 1014.11 )  The referee condition.  Temperature $25 \pm 2$ °C  Humidity $44 \sim 55$ %  Pressure $86 \sim 106$ kPa  ( in accordance with MIL-STD-883E: 1014.9 )	



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## 10. CLIMATIC 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 - $40 \pm 3$ °C for $168 \pm 6$ hours . Take the specimen out of the chamber and measure itselectrical performance after leaving $1 \sim 2$ 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 $+125 \pm 3^{\circ}\text{C}$ for $720 \pm 48$ hours. And then take the specimen out of the chamber and measure its electrical performance after leaving for $1 \sim 2$ 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 $+85 \pm 5$ °C and humidity of $85 \pm 5$ % for $168 \pm 6$ hours and then take the specimen out and measure its electrical performance after leaving for $1\sim2$ 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).    Low temp $55 \pm 3$ °C ( $15\pm 3$ min).    Measure its electrical performance after leaving it for $1 \sim 2$ hours under the referee condition . ( in accordance with MIL-STD-883F : $1010.8$ )	

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