

APPROVAL SHEET

Customer Name : _____
Customer P/N : _____
Frequency : 26.000000 MHz
Aker Approved P/N : VTON-026000-2-AL-00
Aker MPN : VTON-026000-2-AL-00
Rev. : 1
ISSUE DATE : Oct.24.2022

APPROVED	CHECKED	PREPARED
<i>Tin</i>		<i>Jimmy</i>
APPROVED BY CUSTOMER		

AKER TECHNOLOGY CO., LTD.

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Web: www.aker.com.tw

MSL:Level 1

RoHS compliant



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APPROVED	:	Tin	SHEET : 2 of 8
PREPARED	:	Jimmy	REV. : 1
Confidential			

SMD Temperature compensated crystal oscillator

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°C

Relative humidity : 40%~70%

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

Ambient temperature : 25±3°C

Relative humidity : 40%~70%

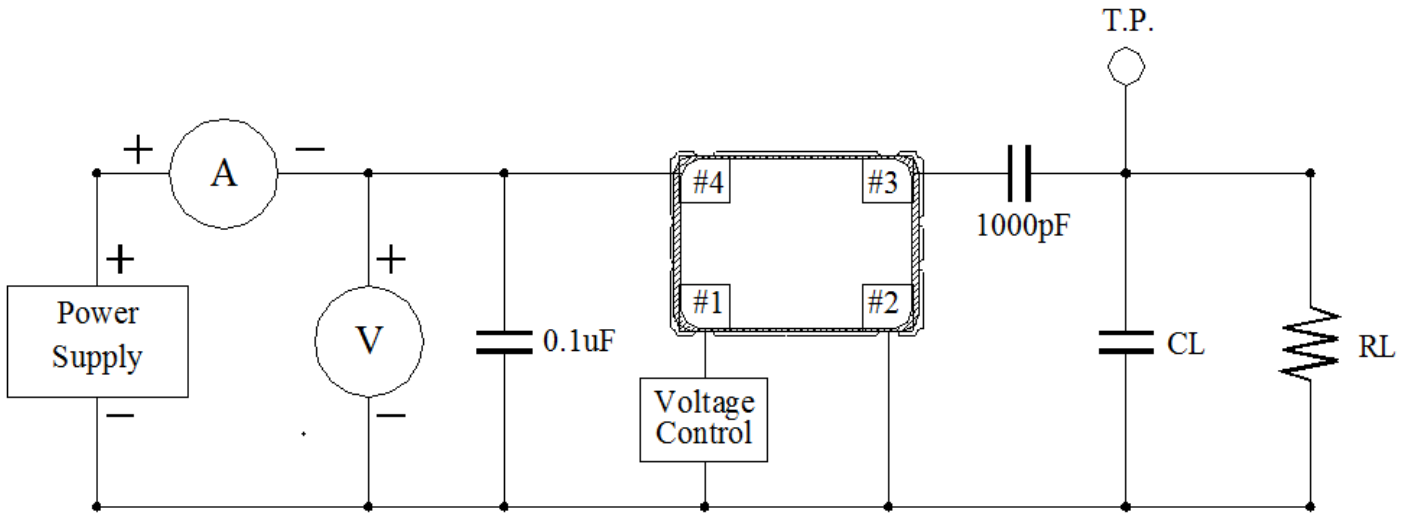
■ AKER Model : VTON-221

■ Cutting Mode : AT CUT

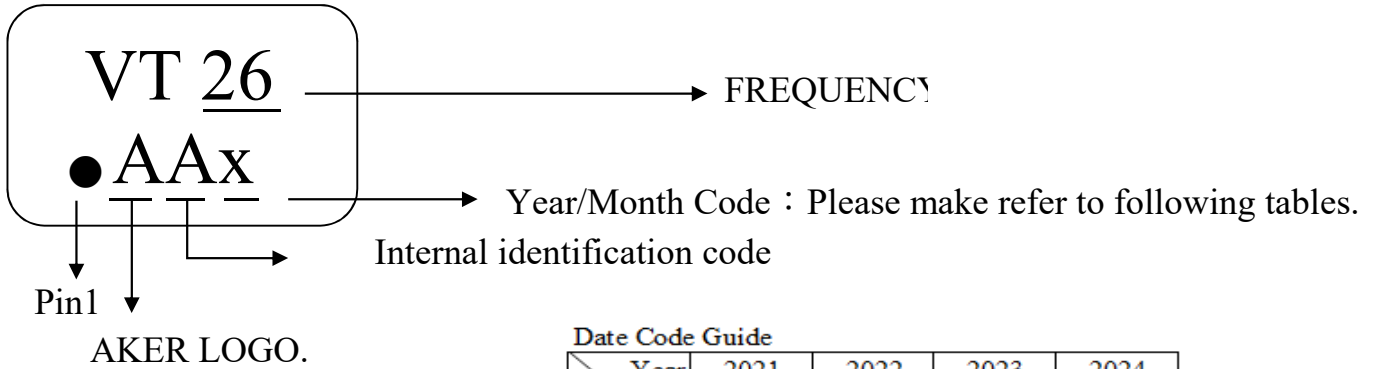
Parameters	Electrical Spec				Notes
	Min.	Typ.	Max.	Units.	
Nominal Frequency	26.000000			MHz	
Supply voltage	2.66	2.8	2.94	V	
Nominal Frequency Tolerance	-2.0	~	2.0	ppm	After 2 times reflow soldering
Frequency / Temperature characteristic (Based on frequency at +25°C)	-0.5	~	0.5	ppm	T _{use} = -30°C to +85°C
	-3.0	~	3.0	ppm	T _{use} = -40°C to -30°C
Load sensitivity	-0.2	~	0.2	ppm	±10% Load change
Load	10//10			KΩ//pF	
Temperature range	-40	~	85	°C	
Storage temperature range	-40	~	85	°C	
Current Consumption			2.0	mA	
Output Waveform	Clipped Sine Wave				
Output voltage level	0.8			V _{pp}	
VCTL	0.4	1.4	2.4	V	Positive slope(df/dv)
Pulling Range	±9		±15	ppm	
Aging	-1.0	~	1.0	ppm	First Year
Typical SSB phase noise power density		-115		dBc/Hz	100Hz offset.
Typical SSB phase noise power density		-131		dBc/Hz	1KHz offset.
Typical SSB phase noise power density		-144		dBc/Hz	10KHz offset.
Typical SSB phase noise power density		-151		dBc/Hz	100KHz offset.

Please kindly be noted that AKER DO NOT guarantee parts quality which involves human security application.

2 . VCTCXO TESTING CIRCUIT



3. MARKING :



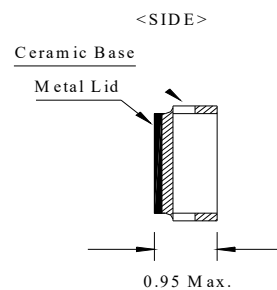
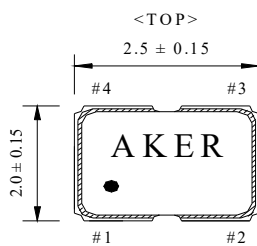
Date Code Guide

Year	2021	2022	2023	2024
	2025	2026	2027	2028
Month	(4N+1)	(4N+2)	(4N+3)	(4N+0)
JAN	a	n	A	N
FEB	b	p	B	P
Mar	c	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	l	y	L	Y
Dec	m	z	M	Z

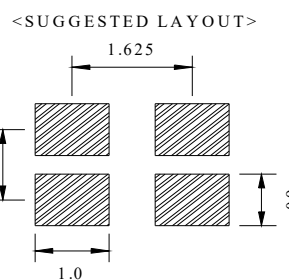
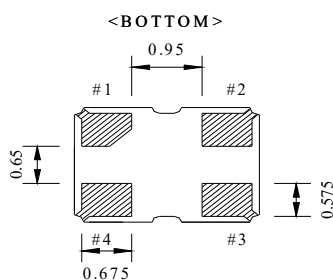
A cycle every four years

4. DIMENSION :

(Unit : mm)



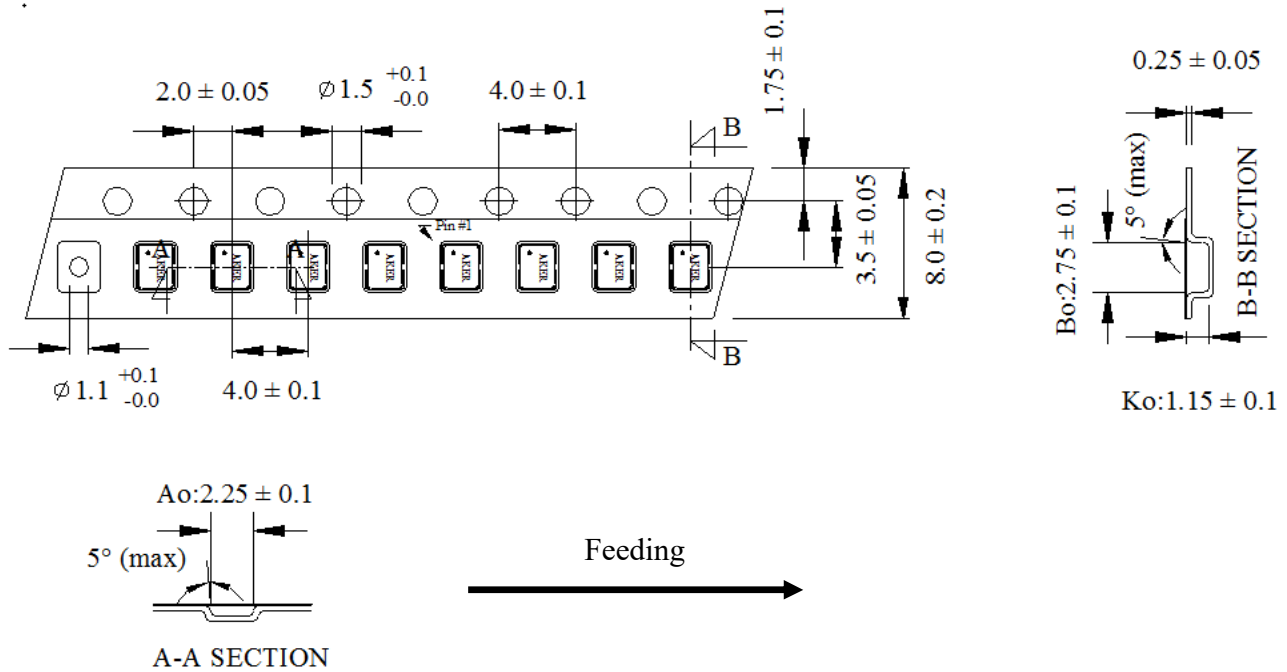
Pad	Function
#1	VCON
#2	GND
#3	Output
#4	Vdd



5. PACKING :

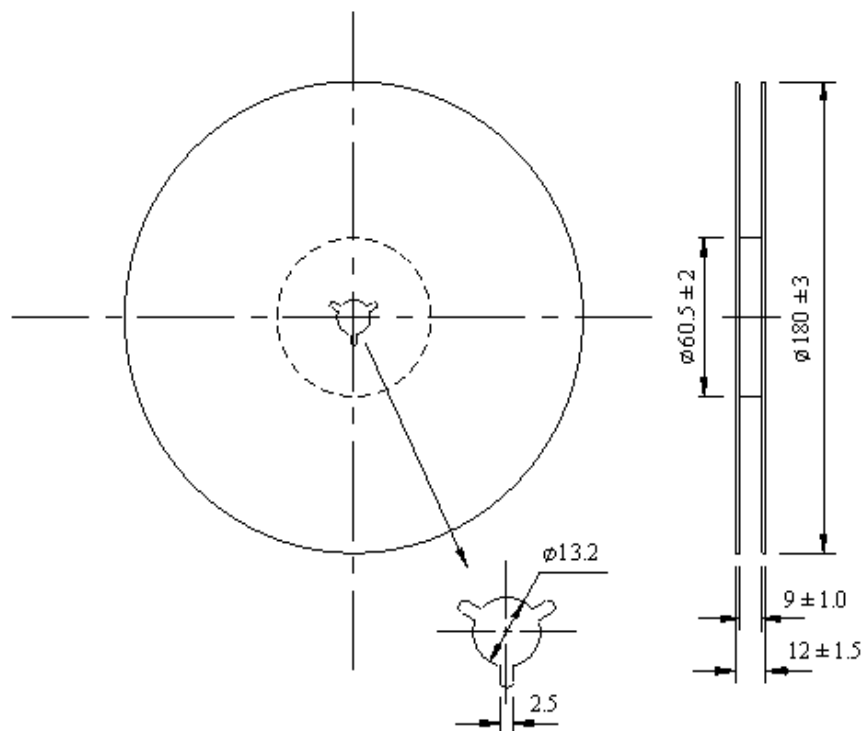
TAPE SPECIFICATION

(Unit : mm)

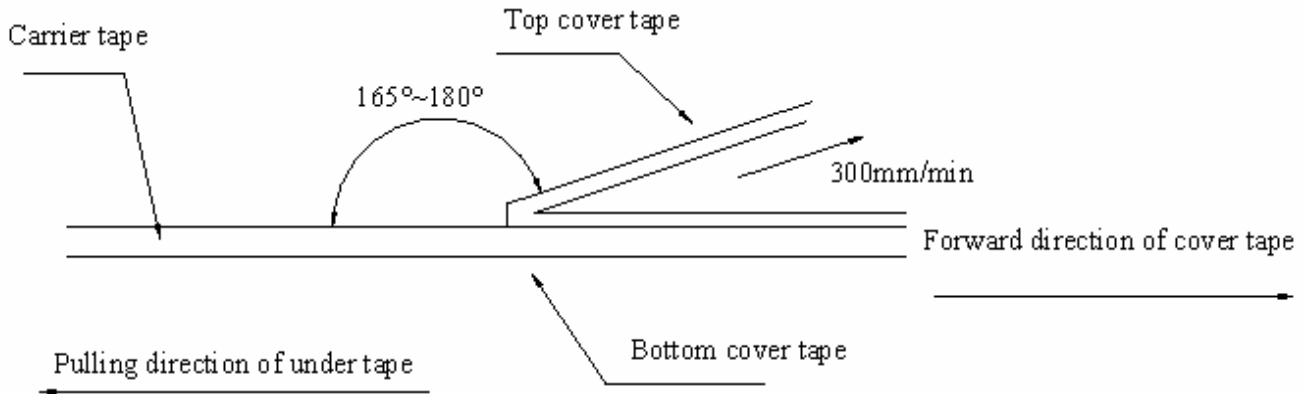


OUTLINE DIMENSION

(Unit : mm)



6. COVER TAPE ADHESION STRENGTH :

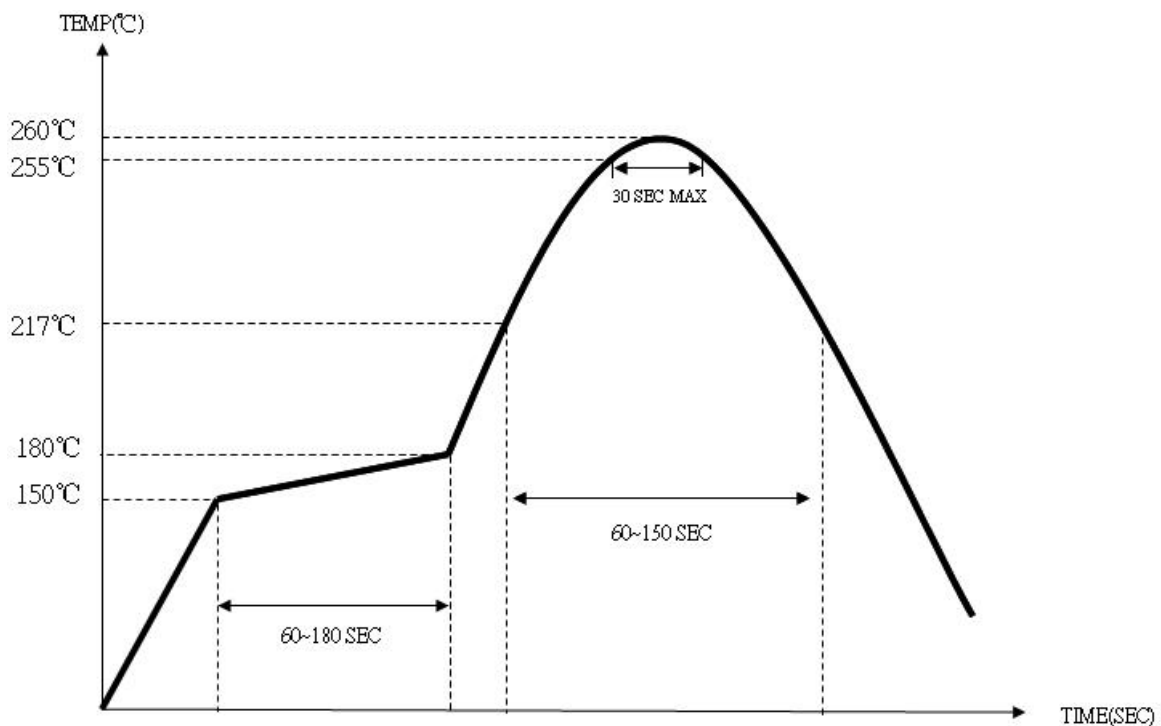


*** In the case, the cover tape is pulled off under the above conditions, the cover tape adhesion strength should be 10.2g~71.4g

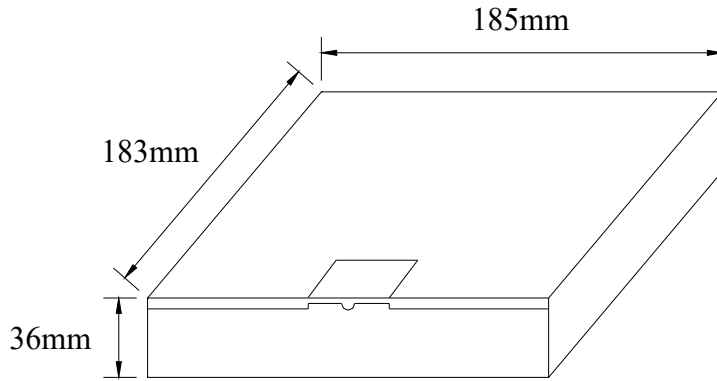
Plastic tape: 10.2g~71.4g

(Cover tape adhesion strength)

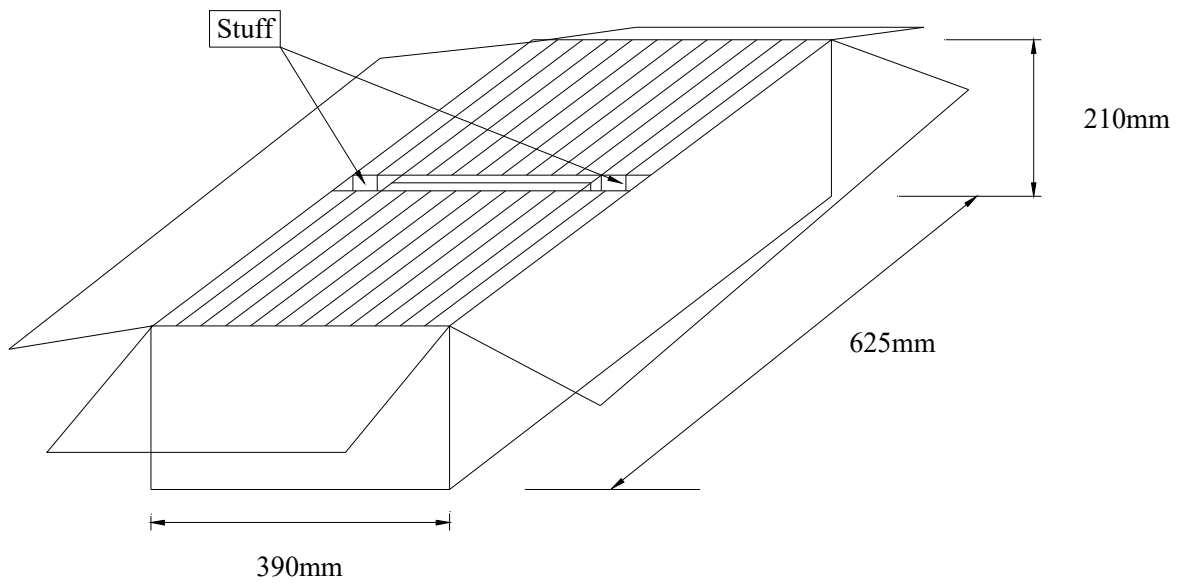
7. SOLDERING REFLOW PROFILE



8 . PACKING



BOX = 3000 PCS / REEL(MAX)



SMD product packs 32 BOX=The outside box packs (3000 PCS * 32 BOX = 96000 PCS)(MAX)



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9 .RELIABILITY SPECIFICATION

Mechanical Endurance

TEST ITEMS	TEST METHODS AND TEST CONDITION	CRITERIA
Fine Leak Test	4.5 kg/cm ² Helium bombing for 1 Hour	≤1*10 ⁻⁸ atm. Helium
Drop Test	Free drop from 100 cm height on a hard wooden board for 3 times(board is thickness more than 30 mm)	
Vibration Test	Freq. range: 20~2000Hz Peak to peak amplitude:1.52mm Peak acceleration:20 G(196m/s ²) 3 direction(X, Y,Z) , each 20min , 4cycles	ΔF≤±2ppm
Solderability	Solding temperature : 260±5°C Solding duration : 2±0.5s Solder bath	90% coated
Mechanical Shock Test	1500G, 0.5ms, 6 sides, impact each side 3 times.	ΔF≤±2ppm

Environmental Endurance

TEST ITEMS	TEST METHODS AND TEST CONDITION	CRITERIA
Temperature Cycling	-55±3°C/15±3min ~ +125±3°C/15±3min 100cycles	ΔF≤±2ppm
Low Temp. Exposure	-40±3°C ,500±6 hrs	ΔF≤±2ppm
High Temp. & Humidity	+85°C±5°C & 85%±5% R.H. , 168±6 hrs	ΔF≤±2ppm
Resistance To Soldering Heat Test	IR Reflow furnace with the condition 2 times Peak temp.260±3°C , 10sec(Min.)	ΔF≤±2ppm
Aging Test	85±3°C , 500±12hrs	ΔF≤±2ppm