



Accurate Kinetic Energy

No.11-3 Jianguo Rd., T.E.P.Z. 42760 Taiwan, ROC

All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

Page: 1/4 Date: April 2,2025

Specification Title:

Ultra Low Voltage
Temperature Compensated
Crystal Oscillator
Automotive Grade
Ultra Low Voltage TCXO - Ceramic Package
2.0 x 1.6 millimeter Surface Mount
AEC-Q200 Qualified
IATF 16949 Certified

Part Number: TX21ED Auto Series

Electrical Specifications:

Frequency Range		13.000 to 52.000	MHz
Frequency Tolerance		±2.0	ppm Max.
Frequency Stability vs. Operating Temperature		±0.5 ~ ±2.0	
Frequency Stability vs. Supply Voltage Change		±0.2	
Frequency Stability vs. 10% Load Change		±0.2	
Aging per Year		±1.0	
Operating Temperature Range	Standard	-30 to +85	°C
	Extended	-40 to +85	
Storage Temperature Range		-55 to +125	
Supply Voltage		1.2 ± 5%	VDC
Input Current		2.5	mA Max.
Output Level		0.8	Vp-p Min.
Output Waveform		Clipped Sinewave	
Output Load		10KΩ // 10pF	
Phase Noise	@100Hz Offset	-115	dBc/Hz Typ.
	@1KHz Offset	-133	
	@10KHz Offset	-146	
Enable-Disable Function		Yes	
Input Enable Voltage		70%	VDD Min.
Input Disable Voltage		30%	VDD Max.
Start Up Time		2	ms Max.

RoHS Compliant
Pb - Lead Free

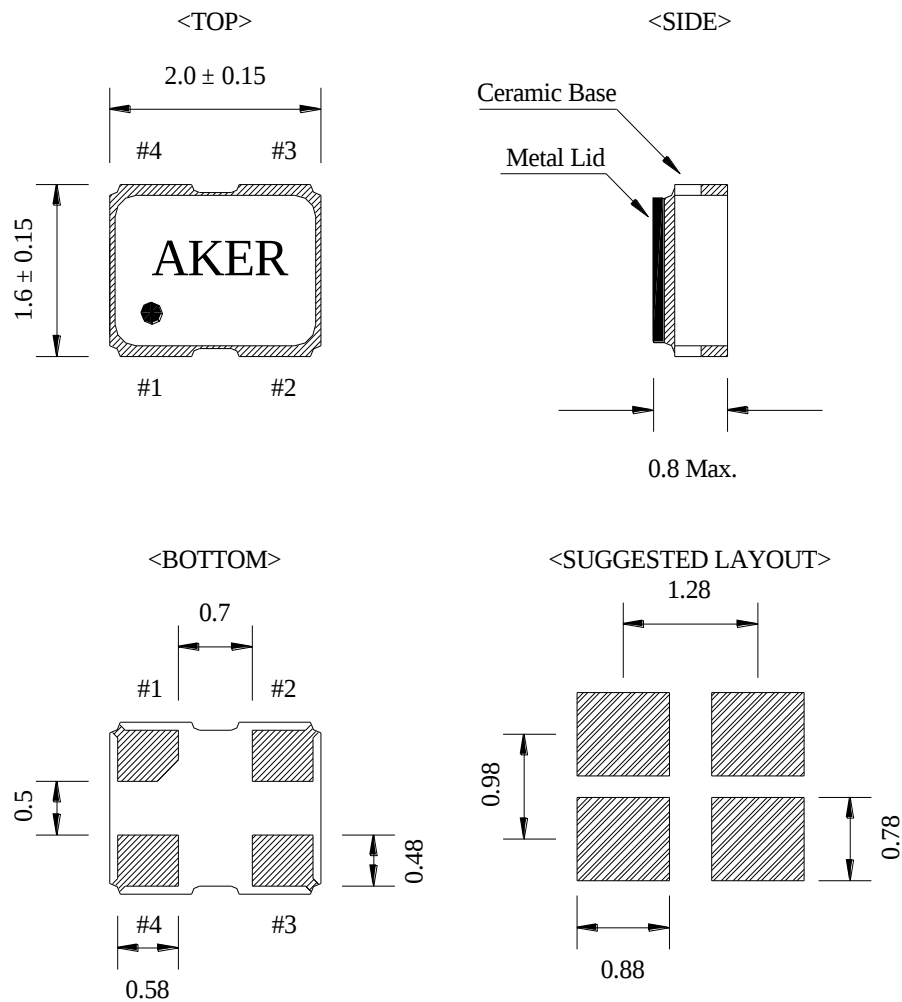
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Revisions

Date

Appr

Mechanical Outline and Solder Pad Layout:

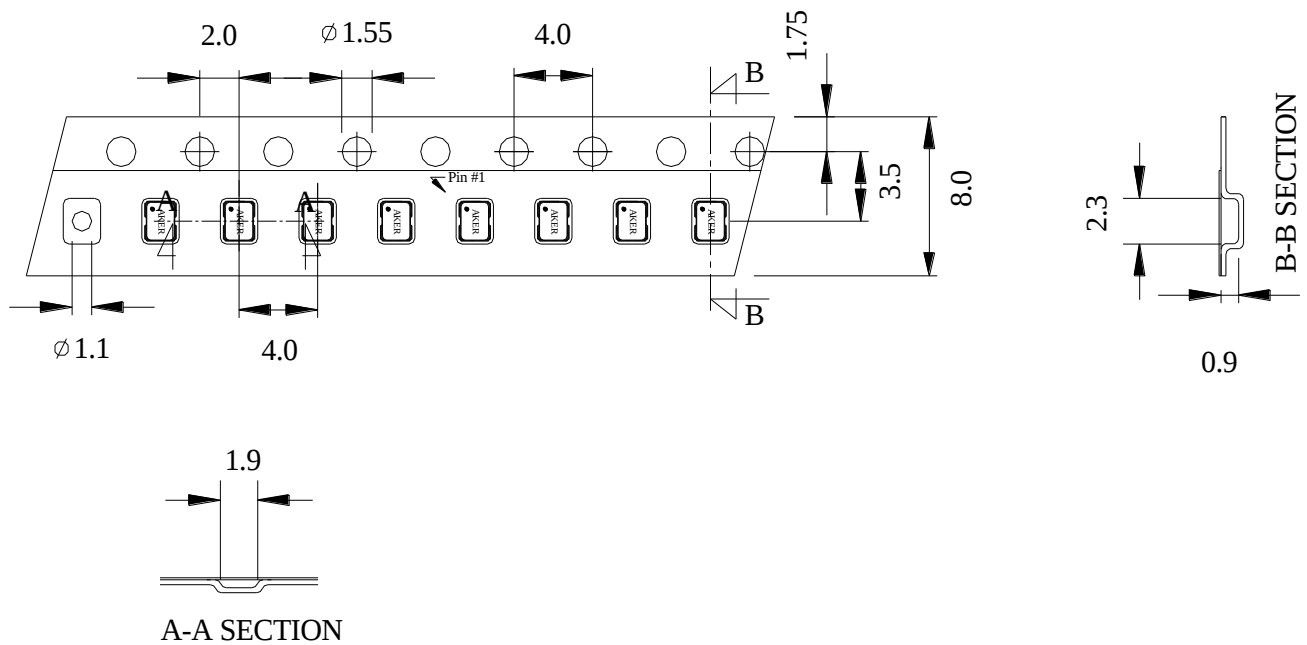


PIN No.	Connection
#1	Enable/Disable
#2	GND
#3	Output
#4	VDC

Enable/Disable Function	
PIN #1	PIN #3
HIGH	Frequency Output
LOW	Frequency Halt

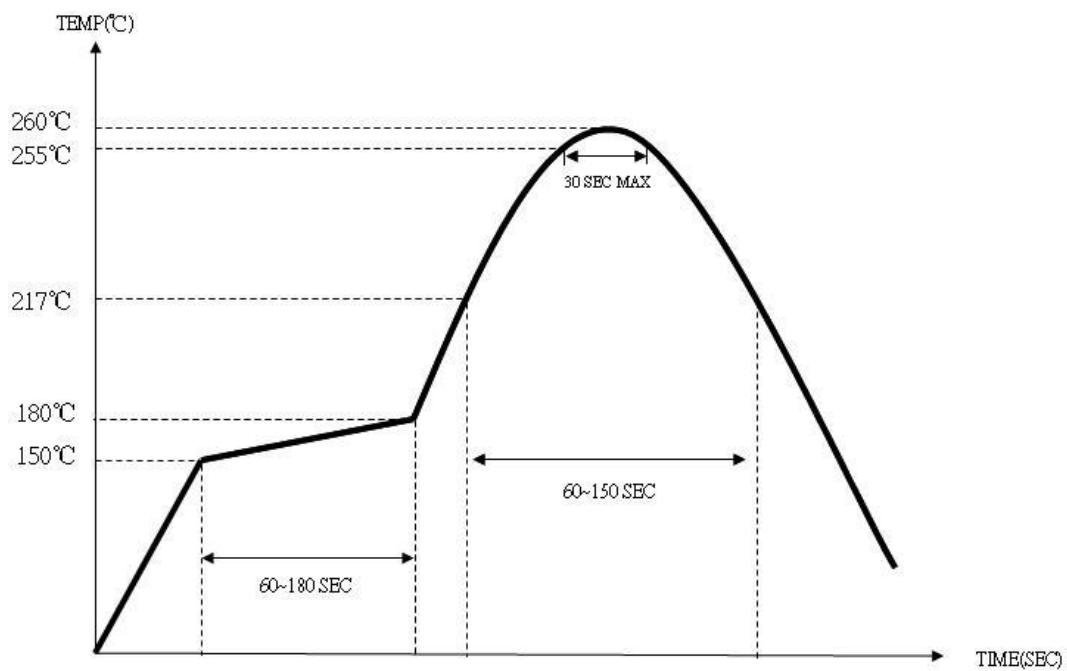
Package is Seam Sealed Ceramic-Metal.
Dimensions are millimeters.

Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series	TX	Parameter
Package	21	2.0 x 1.6 mm
PIN #1	ED	Enable / Disable
-		
Supply Voltage	12	1.2 VDC $\pm$ 5%
-		
Temperature Stability	005	$\pm$ 0.5 ppm
	010	$\pm$ 1.0 ppm
	020	$\pm$ 2.0 ppm
-		
Output Waveform	S	Clipped Sinewave
-		
Frequency	13.000~52.000	MHz
-		
AECQ-200	A	Automotive
-		
Temperature Range	See Notes	-30 to +85 °C
	X	-40 to +85 °C
-		
Packaging	M	250pcs Reel
	R	1000pcs Reel
	R3	3000pcs Reel

Part Number Example:

TX21ED-12020S-26.000-A-X-R

TX21ED: 2.0 x 1.6 mm SMD Package

12: +1.2 VDC Supply Voltage

020: $\pm$ 2.0 ppm Temperature Stability

S: Clipped Sinewave Output

26.000 MHz Nominal Frequency

A: Automotive Grade

X: -40 to + 85°C Temperature Range

R: Tape and Reel Packaging

Notes:

- 1- Standard Temperature Range do not need to be included in Part Number description.
- 2- Product is shipped in Tape and Reel configuration.
- 3- Quantities less than 1000 pieces are shipped bulk in ESD pouches.
- 4- Specification subject to change without notice.