



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

All dimensions are millimeters.

CAD:	TCR
Review:	EG
Appr:	JL
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Date:	August 01, 2022

Specification Title:

**Quartz Crystal
Surface Mount
HC-49/U-S SMD Short Package
General Product Specification**

Series Name: CAA Series

Electrical Specifications:

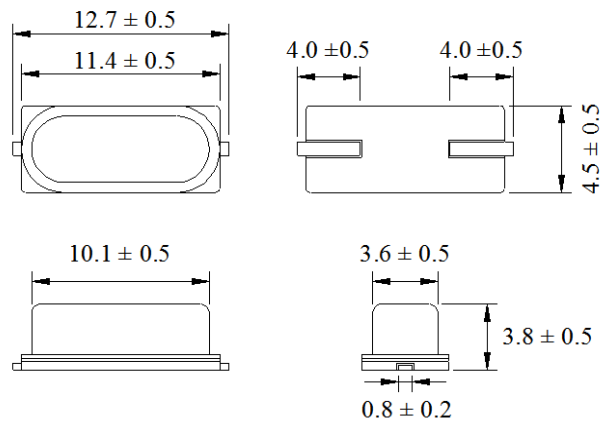
Frequency Range		3.500 to 80.000	MHz
Mode of Oscillation	Fundamental	3.500 to 40.000	MHz
	Third Overtone	24.000 to 80.000	MHz
Frequency Tolerance at 25°C	Standard	±30	PPM Max
	Optional	±25	
		±20	
		±15	
		±10	
Frequency Stability over Temperature Range	Standard	±30	PPM Max
	Optional	±100	
		±50	
		±25	
		±20	
		±10	
Operating Temperature Range	Standard	-20 to +70	°C
	Extended	-40 to +85	
Storage Temperature Range		-55 to +125	
Aging		±5	PPM Max/Year
Load Capacitance		6 to 47 and Series Resonance	pF
Shunt Capacitance		7.0	pF Max
Equivalent Series Resistance(ESR)		See ESR Table	Ohms
Drive Level		100, 500, 1000 or special requirement	mW Max
Insulation Resistance		500 at 100 Vdc ± 15 Vdc	M Ohm

Frequency Range and ESR Values:

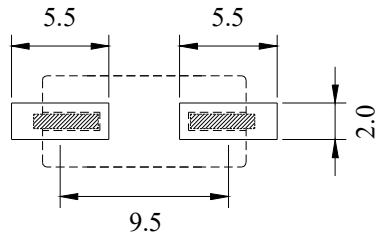
Frequency Range in MHz	ESR Ohm Max	Mode of Operation	Frequency Range in MHz	ESR Ohm Max	Mode of Operation
3.500 to 3.999	200	Fundamental	24.000 to 29.999	120	Third Overtone
4.000 to 4.999	120	Fundamental	30.000 to 39.999	80	Third Overtone
5.000 to 5.999	90	Fundamental	40.000 to 80.999	60	Third Overtone
6.000 to 7.999	80	Fundamental			
8.000 to 11.999	60	Fundamental			
12.000 to 14.999	40	Fundamental			
15.000 to 19.999	35	Fundamental			
20.000 to 40.000	25	Fundamental			

RoHS Compliant Pb - Lead Free	Ltr	Revisions	Date	Appr

Mechanical Outline:



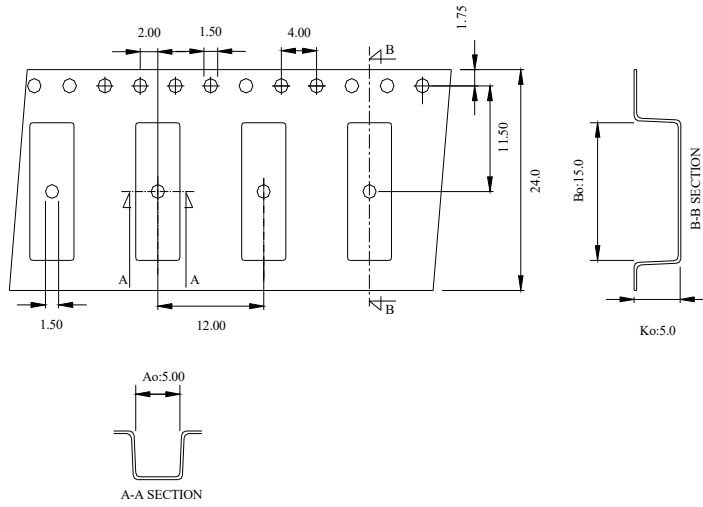
SUGGESTED LAND PATTERN :



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

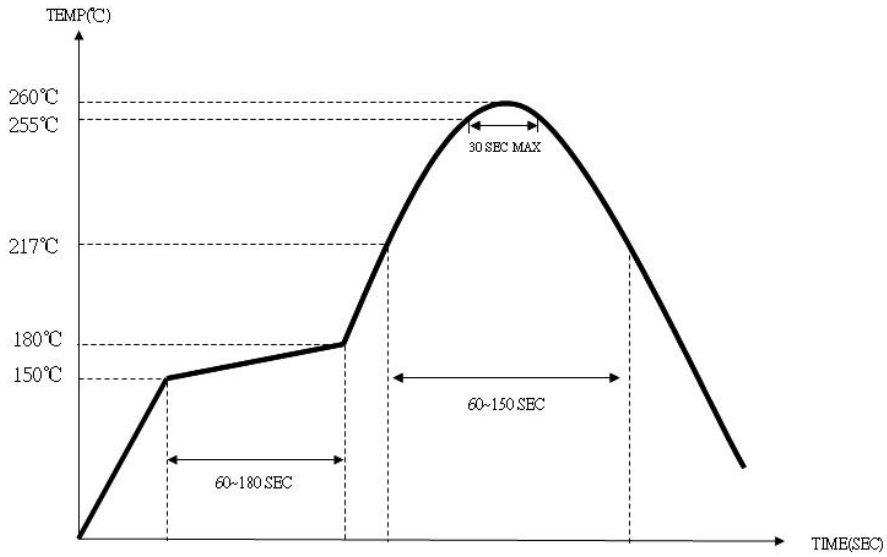
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Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series		C	Parameter	
Package		AA	HC-49/U-S SMD	
		-		
Frequency		3.500 to 80.000	MHz	
		-		
Load Capacitance		10	10 pF	
		12	12 pF	
		16	16 pF	
		18	18 pF	
		20	20 pF	
		32	32 pF	
		S	Series	
		-		
Frequency Tolerance		Standard	30	±30PPM
		Option	25	±25PPM
			20	±20PPM
			15	±15PPM
			10	±10PPM
Frequency Stability		Standard	30	±30PPM
		Option	100	±100PPM
			50	±50PPM
			25	±25PPM
			20	±20PPM
			15	±15PPM
		10	±10PPM*	
		-		
Mode of Oscillation		See Notes	Fundamental	
		3	Third Overtone	
		-		
Temperature Range		Standard	See Notes	-20 to +70 °C
		Option	X	-40 to +85 °C
		-		
Package Height		Standard	See Notes	4.3
		Option	32	3.2
		-		
Packaging		See Notes	Bulk	
		R	Tape and Reel	

Part Number Example:

CAA-24.000-18-3050-R

CAA: HC-49/U-S SMD Package

24.000 MHz Nominal Frequency

18pF Load Capacitance

3050: ±30 PPM Tolerance and ±50 PPM Stability

Fundamental Mode

-20 to +70°C Temperature Range

Standard Height - 4.3 mm

R: Tape and Reel Packaging

Notes:

1- Standard Temperature Range, Package Height (4.3mm), and Fundamental Mode do not need to be included in Part Number description.

2- Product is shipped in Tape and Reel configuration. Each reel contains 1000 pieces.

3- Quantities less than 1000 are shipped bulk. 100 pieces in ESD bags.

4- Specification subject to change without notice.

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