



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:

**Microprocessor Crystal Unit
Automotive Grade
4.0 x 2.5 millimeter Surface Mount - 4 Pad
General Product Specification**

Series Name: C4S Auto Series

Electrical Specifications:

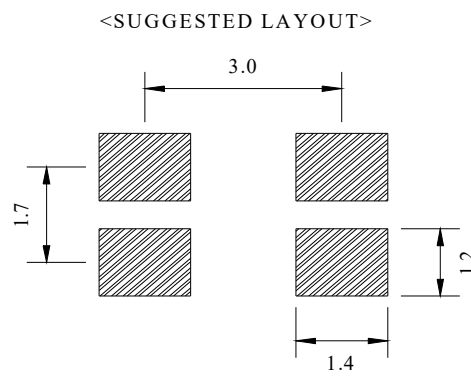
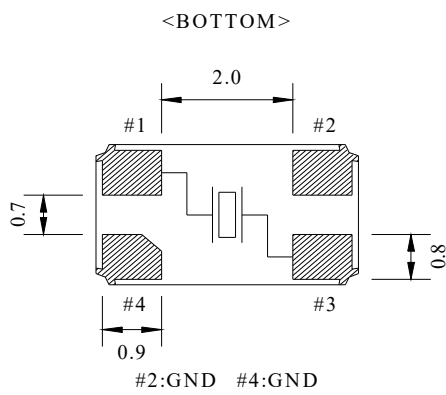
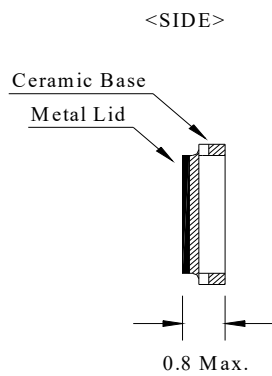
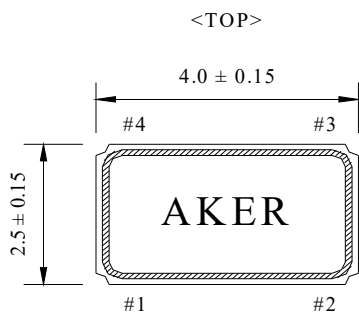
Frequency Range		12.000 to 52.000	MHz
Mode of Oscillation	Fundamental	12.000 to 52.000	MHz
Frequency Tolerance at 25°C	Standard	±30	PPM Max
	Optional	±50	
		±20	
		±15	
Frequency Stability over Temperature Range	Standard	±50	PPM Max
	Optional	±100	
		±30	
		±25	
Operating Temperature Range	Standard	-40 to +85	°C
	Extended	-40 to +125	
Storage Temperature Range		-55 to +150	
Aging		±3	PPM Max/Year
Load Capacitance		6 to 47 and Series Resonance	pF
Shunt Capacitance		5.0	
Equivalent Series Resistance(ESR)		See ESR Table	Ohm
Drive Level		100	uW 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
12.000 to 19.999	50	Fundamental
20.000 to 29.999	40	Fundamental
30.000 to 52.000	30	Fundamental

RoHS Compliant Pb - Lead Free	Ltr	Revisions	Date	Appr

Mechanical Outline:



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

How to build a Part Number:

Series	C	Parameter	
Package	4S	4.0 x 2.5 mm - 4 Pad	
	-		
Frequency	12.000 to 52.000	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	50	±50PPM
		20	±20PPM
		15	±15PPM
		10	±10PPM
Frequency Stability	Standard	50	±50PPM
	Option	100	±100PPM
		30	±30PPM
		25	±25PPM
		20	±20PPM
	-		
Mode of Oscillation	See Notes	Fundamental	
	-		
AECQ-200	A	Automotive	
	-		
Temperature Range	Standard	X	-40 to +85 °C
	Option	X1	-40 to +125 °C
	Option	X2	-40 to +105 °C
	-		
Packaging	R	1000pcs Reel	

Part Number Example:

C4S-16.000-32-3050-A-X-R

C4S- 4.0 x 2.5 mm SMD Seam Seal Ceramic-Metal Package - 4 Pad

16.000 MHz Nominal Frequency

32 pF Load Capacitance

3050: ±30 PPM Frequency Tolerance and ±50 PPM Frequency Stability

A: Automotive Grade

Fundamental Mode

-40 to +85° C Temperature Range

R: Tape and Reel Packaging

Notes:

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

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