



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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**Specification Title:**

**Microprocessor Crystal Unit  
Automotive Grade  
5.0 x 3.2 millimeter Surface Mount - 4 Pad  
General Product Specification**

**Series Name: C5S Auto Series**

**Electrical Specifications:**

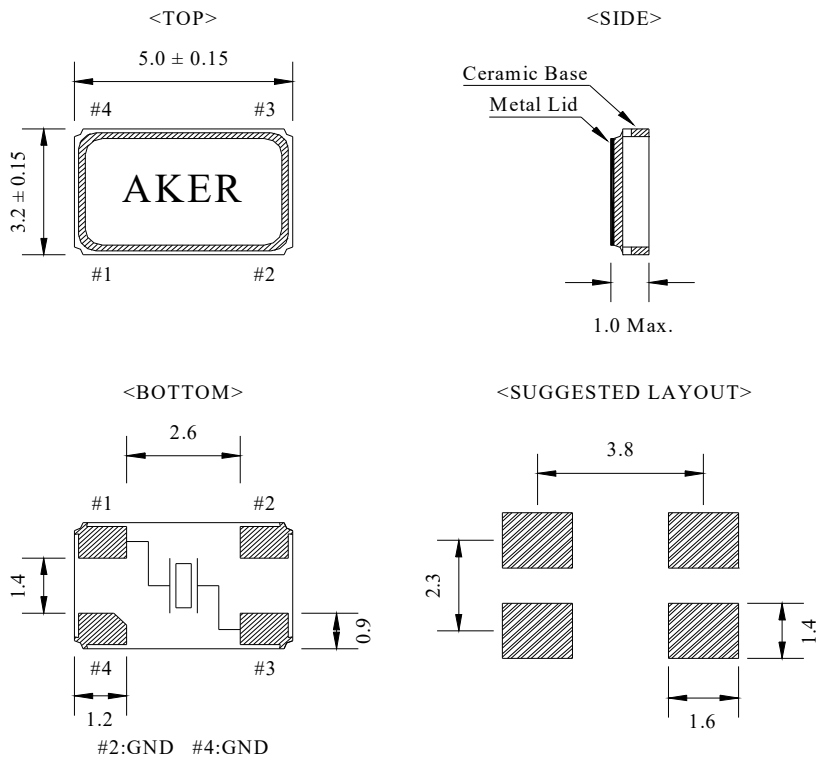
Frequency Range		8.000 to 133.000	MHz
Mode of Oscillation	Fundamental	8.000 to 54.000	MHz
	Third Overtone	40.000 to 133.00	
Frequency Tolerance at 25°C	Standard	±30	PPM Max
		±50	
	Optional	±20	
		±15	
		±10	
Frequency Stability over Temperature Range	Standard	±50	PPM Max
		±100	
	Optional	±30	
		±25	
		±20	
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		7.0	
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	Frequency Range in MHz	ESR Ohm Max	Mode of Operation
8.000 to 9.999	60	Fundamental	40.000 to 59.999	70	Third Overtone
10.000 to 11.999	45	Fundamental	60.000 to 133.000	60	Third Overtone
12.000 to 15.999	35	Fundamental			
16.000 to 19.999	30	Fundamental			
20.000 to 49.999	25	Fundamental			
50.000 to 54.000	20	Fundamental			

<b>RoHS Compliant Pb - Lead Free</b>	Ltr	Revisions	Date	Appr

**Mechanical Outline:**



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

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**How to build a Part Number:**

Series		C	Parameter
Package		5S	5.0 x 3.2 mm - 4 Pad
		-	
Frequency		8.000 to 133.000	MHz
		-	
Load Capacitance		6	6 pF
		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 3	Fundamental Third Overtone
		-	
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		M	250pcs Reel
		R	1000pcs Reel

**Part Number Example:**

**C5S-40.000-3050-A-X-R**

**C5S: 5.0 x 3.2 mm SMD Seam Sealed Package - 4 Pad**

**40.000 MHz Nominal Frequency**

**18 pF Load Capacitance**

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

**A: Automotive Grade**

**X: -40 to +85° C Extended Temperature Range**

**R: Tape and Reel Packaging**

**Notes:**

- 1- Fundamental mode does not need to be included in Part Number description.
- 2- Other Load Capacitances are available other than those listed in Part Number table above.
- 3- Product is shipped in Tape and Reel configuration.
- 4- Quantities less than 250pcs are shipped in tape
- 5- Specification subject to change without notice

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