

**RoHS Compliant  
Pb - Lead Free**

Ltr	Revisions	Date	Appr

**Electrical Specifications:**

<b>Frequency Range</b>		<b>6.000 to 133.000</b>	<b>MHz</b>
<b>Mode of Oscillation</b>	<b>Fundamental</b>	<b>6.000 to 50.000</b>	<b>MHz</b>
	<b>Third Overtone</b>	<b>40.000 to 133.000</b>	
<b>Frequency Tolerance at 25°C</b>	<b>Standard</b>	<b>±30</b>	<b>PPM Max</b>
	<b>Optional</b>	<b>±25</b>	
		<b>±20</b>	
		<b>±15</b>	
		<b>±10</b>	
<b>Frequency Stability over Temperature Range</b>	<b>Standard</b>	<b>±50</b>	<b>PPM Max</b>
	<b>Optional</b>	<b>±30</b>	
		<b>±25</b>	
		<b>±20</b>	
		<b>±15</b>	
<b>Operating Temperature Range</b>	<b>Standard</b>	<b>-10 to +70</b>	<b>° C</b>
	<b>Extended</b>	<b>-40 to +85</b>	
<b>Storage Temperature Range</b>		<b>-55 to +125</b>	
<b>Aging</b>		<b>±3</b>	<b>PPM Max/Year</b>
<b>Load Capacitance</b>		<b>10 to 32 and Series Resonance</b>	<b>pF</b>
<b>Shunt Capacitance</b>		<b>7.0</b>	
<b>Equivalent Series Resistance (ESR)</b>		<b>See ESR Table</b>	<b>Ohms</b>
<b>Drive Level</b>		<b>100</b>	<b>uW Typ</b>
<b>Insulation Resistance</b>		<b>500 at at 100 Vdc ± 15 Vdc</b>	<b>M Ohms</b>

**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
6.000 to 7.999	70	Fundamental	40.000 to 79.999	70	3rd Overtone
8.000 to 9.999	40	Fundamental	80.000 to 133.000	60	3rd Overtone
10.000 to 14.999	35	Fundamental			
15.000 to 39.999	30	Fundamental			
40.000 to 50.000	20	Fundamental			



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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

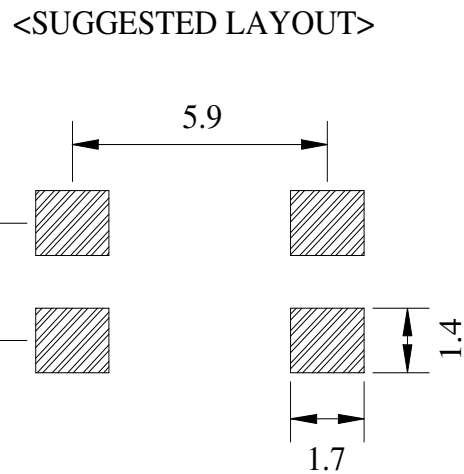
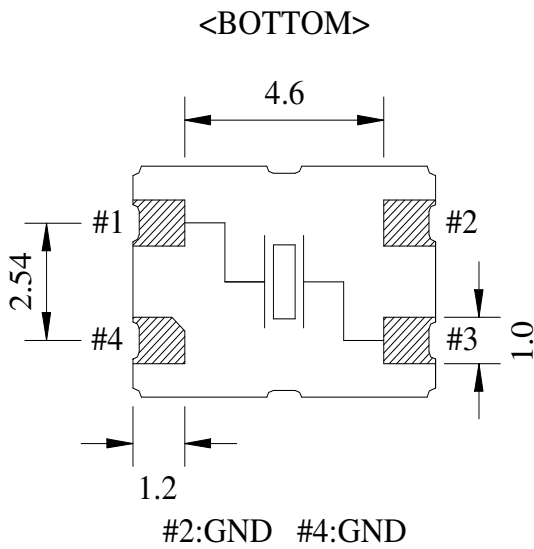
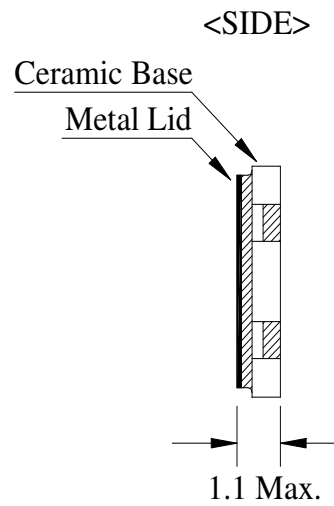
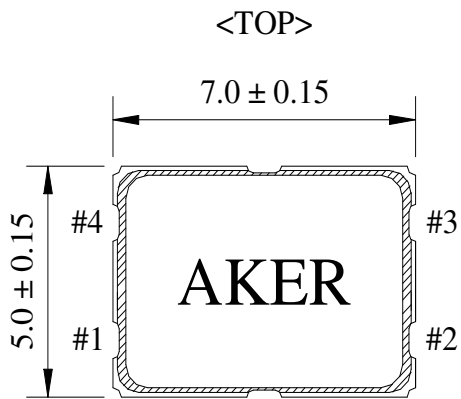
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Specification Title:

**Microprocessor Crystal Unit  
Low Profile  
7.0 x 5.0 millimeter Surface Mount - 4 Pad  
General Product Specification**

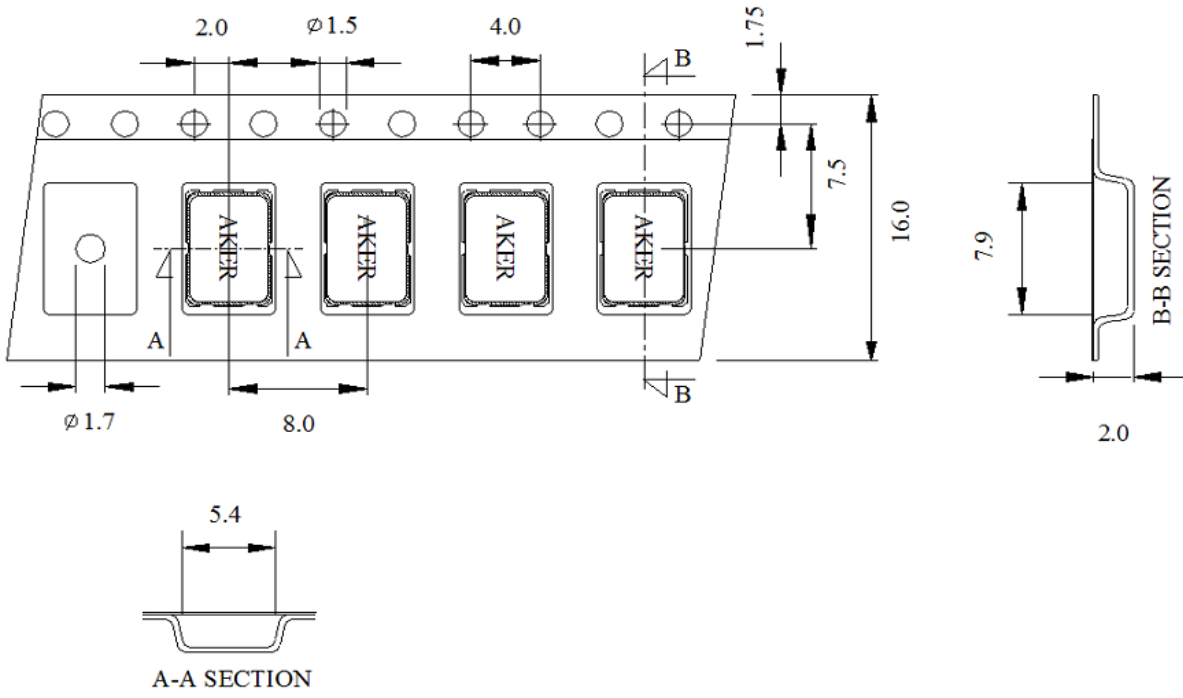
Part Number: **C7S Series**

**Mechanical Outline:**



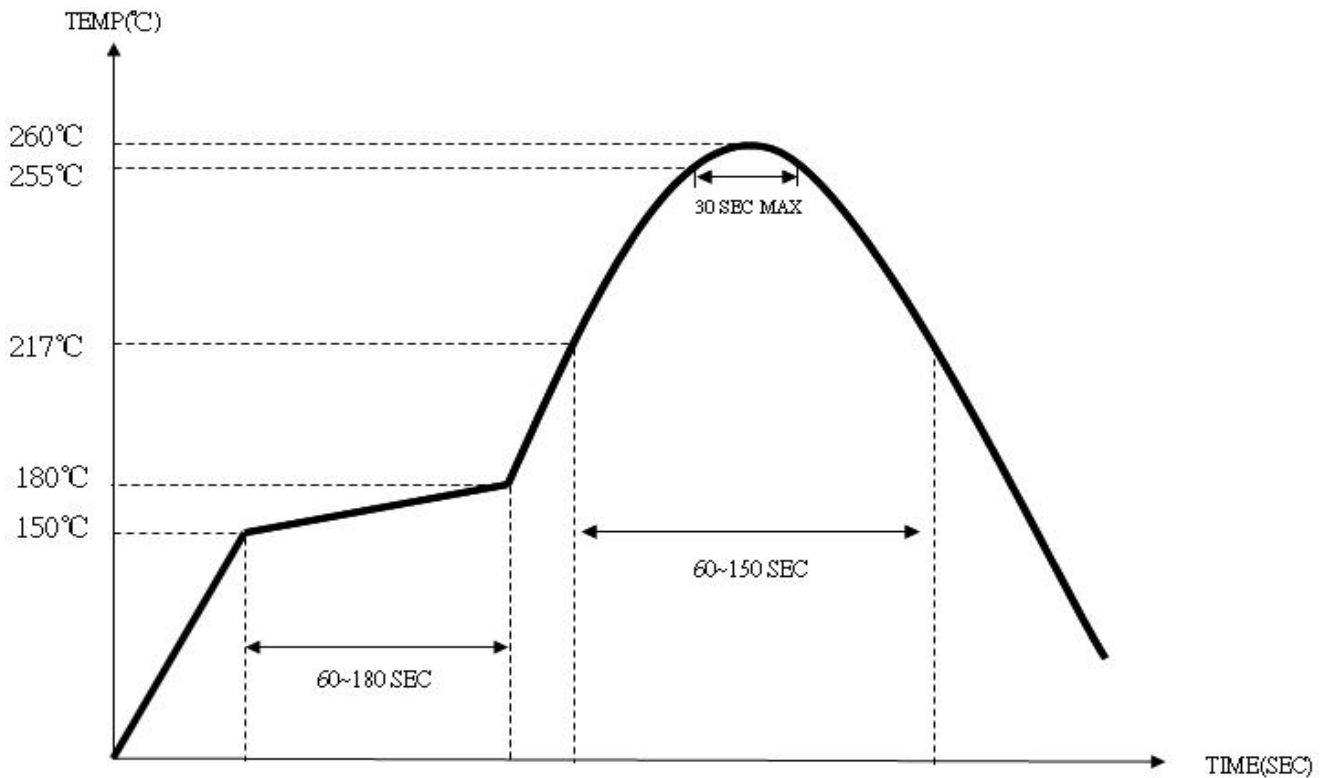
**Package is Seam Sealed Ceramic-Metal.  
Dimensions are millimeters.**

**Carrier Tape Dimensions:**



**Dimensions are millimeters.**

**Solder Reflow Characteristics:**



**How to build a Part Number:**

<b>Series</b>		<b>C</b>	<b>Parameter</b>
<b>Package</b>		<b>7S</b>	<b>5.0 x 7.0 mm 4 Pad</b>
		-	
<b>Frequency</b>		<b>6.000 to 133.000</b>	<b>MHz</b>
		-	
<b>Load Capacitance</b>		<b>10</b>	<b>10 pF</b>
		<b>12</b>	<b>12 pF</b>
		<b>16</b>	<b>16 pF</b>
		<b>18</b>	<b>18 pF</b>
		<b>20</b>	<b>20 pF</b>
		<b>32</b>	<b>32 pF</b>
		<b>S</b>	<b>Series</b>
		-	
<b>Frequency Tolerance</b>	<b>Standard</b>	<b>30</b>	<b>±30 PPM</b>
	<b>Option</b>	<b>25</b>	<b>±25 PPM</b>
		<b>20</b>	<b>±20 PPM</b>
		<b>15</b>	<b>± 15 PPM</b>
		<b>10</b>	<b>±10 PPM</b>
<b>Frequency Stability</b>	<b>Standard</b>	<b>50</b>	<b>±50 PPM</b>
	<b>Option</b>	<b>30</b>	<b>±30 PPM</b>
		<b>25</b>	<b>±25 PPM</b>
		<b>20</b>	<b>±20 PPM</b>
		<b>15</b>	<b>±15 PPM</b>
		<b>10</b>	<b>±10 PPM*</b>
		-	
<b>Mode of Oscillation</b>		<b>See Notes</b>	<b>Fundamental</b>
		<b>3</b>	<b>Third Overtone</b>
		-	
<b>Temperature Range</b>	<b>Standard</b>	<b>See Notes</b>	<b>-10 to +70 °C</b>
	<b>Option</b>	<b>X</b>	<b>-40 to +85 °C</b>
		-	
<b>Packaging</b>		<b>M</b>	<b>250pcs Reel</b>
		<b>R</b>	<b>1000pcs Reel</b>

**Part Number Example:**

**C7S-64.000-18-3050-3-R**

**C7S- 5 x 7 mm SMD Seam Seal Package - 4 pad**

**64.000 MHz Nominal Frequency**

**18 pF Load Capacitance**

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

**Third Overtone Mode**

**-10 to +70° C Temperature Range**

**R: Tape and Reel Packaging - 1000pcs Reel**

**Notes:**

**1- Fundamental mode does not need to be included in Part Number description.**

**\* ±10 PPM Temperature Stability is only available from -30 to +85° C.**

**2- Standard Temperature Range does not need to be included in Part Number description.**

**3- Product is shipped in Tape and Reel configuration**