

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

All dimensions are millimeters.

CAD:	TC	R
Review:	EC	à
Appr:	JL	
Page:	1/4	Date: August 01, 2022

Electrical Specifications:

Specification Title:

Microprocessor Crystal Unit Low Profile 6.0 x 3.5 millimeter Surface Mount - 4 Pad General Product Specification

Series Name: C6S Series

Frequency Range			8.000 to 133.000)	MHz	
Mode of Oscillation		Fundamental	8.000 to 52.000		NU 1-	
wode of Oscillation		Third Overtone	40.000 to 133.00)	MHz	
		Standard	±30			
			±25			
requency Tolerance at 25°C	Ontional	±20		PPM Max		
· ·		Optional	±15			
			±10			
		Standard	±50			
			±100			
Francisco Otabilita a			±30			
Frequency Stability or Temperature Range	ver	Ontional	±25		PPM Max	
remperature Range		Optional	±20			
			±15			
			±10*			
			-20 to +70			
Operating Temperatu	re Range	Extended	-40 to +85		°	
			-40 to +125		C	
Storage Temperature	Range		-55 to +125			
Aging			±3		PPM Max/Year	
Load Capacitance			6 to 47 and Series Resonance		pF	
Shunt Capacitance			7.0		μr	
Equivalent Series Resistance(ESR)			See ESR Table		Ohm	
Drive Level			100		uW Max	
Insulation Resistance			500 at 100 Vdc ± 15 Vdc M O		M Ohm	
Frequency Range	e and ESR \	/alues:				
Frequency Range in MHz	ESR Ohm Max	Mode of Operation	Frequency Range in MHz	ESR Ohm Max	Mode of Operation	
8.000 to 8.999	60	Fundamental	40.000 to 51.999	90	Third Overtone	

IVII 12			1411 12			
8.000 to 8.999	60	Fundamental	40.000 to 51.999	90	Third Overto	one
9.000 to 9.999	50	Fundamental	52.000 to 79.999	80	Third Overto	one
10.000 to 11.999	45	Fundamental	80.000 to 133.000	70	Third Overto	one
12.000 to 19.999	30	Fundamental				
20.000 to 24.999	25	Fundamental				
25.000 to 52.000	20	Fundamental				
		•	•		•	
	Ltr		Revisions		Date	Арр

	Ltr	Revisions	Date	Appr
RoHS Compliant				
Pb - Lead Free				



www.aker-usa.com



www.aker-usa.com

Series C Parameter Package 6S 6.0 x 3.5 mm - 4 Pad Frequency 8.000 to 133.000 MHz 10 10 pF 12 12 pF 16 16 pF 20 20 pF 32 32 pF 32 32 pF 33 Series 0ption 10 ±10PPM 10 ±10PPM 10 ±10PPM 10 ±10PPM 10 ±10PPM 10 ±10PPM 20 ±20PPM 10 ±10PPM 20 ±20PPM 10 ±10PPM 20 ±20PPM 10 ±10PPM 11 ±10PPM 12 ±10PPM 10	How to build a Part	t Number:					
Package 6S 6.0 x 3.5 mm - 4 Pad Frequency 8.000 to 133.000 MHz 10 10 pF 12 12 pF 16 16 pF 20 20 pF 32 32 pF S Series 20 ±30PPM 25 ±25PPM Option 15 ±15PPM 10 100 ±100PPM 30 ±30PPM 26 ±25PPM Option 15 ±15PPM 10 ±10PPM 30 ±30PPM 26 ±25PPM Option 15 ±15PPM 10 ±10PPM* 30 ±30PPM 26 ±25PPM Option 26 ±25PPM 10 ±10PPM* 10 ±100PD* 26 <td< td=""><td></td><td>Series</td><td>С</td><td>Parameter</td><td>]</td><td></td></td<>		Series	С	Parameter]		
Image: constraint of the second se							
Image: constraint of the second se	Frequency		8.000 to 133.000	- MHz			
1212 12 pF Load Capacitance1616 pF 2020 pF 2232 pF 3232 pF SSeriesFrequency Tolerance0130PPM0ption15115PPM101100PPM30130PPM0ption25125PPM0ption25125PPM0ption25125PPM0ption20120PPM15110PPM0ption20120PPM15115PPM10110PPM*0ption3Third OvertoneMode of Oscillation3Third Overtone0ptionX40 to +125 °C0ptionX140 to +125 °C0ptionX240 to +105 °C0ptionX240 to +105 °CPackagingM250pcs Reel0ptionX140 to +125 °C0ptionX240 to +105 °C0ption20130 PPM FrequencyStandardSeries Resonance300: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability3: Third Overtone Mode-10 to +70°C Temperature Range1: Fundamental mode does not need to be included in Part Number description.*10 PPM Frequency Stability is only available from -30 to +85° C.2: Standard Temperature Range does not need to be included in Part Number description.*10 PPM Temperature Range does not need to be included in Part Number description.*10 PPM Trequency St		- 1 7		-			
Image: Load Capacitance 16 16 16 17 18 17 17 18 18 17 18 18 17 18 18 18 17 18 18 18 17 18 12							
Load Capacitance 18 18 pF 20 20 pF 32 32 pF S Series Frequency Tolerance 20 ±30PPM 0ption 15 ±15PPM 100 ±10PPM 30 ±30PPM 100 ±10PPM 30 ±30PPM 25 ±25PPM 0ption 25 30 ±30PPM 100 ±10PPM 10 ±10PPM 0ption X1 <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td>		_					
20 20 pF 32 32 pF S Series							
32 32 pF Series Standard 30 ±30PPM 25 ±25PPM 20 ±20PPM 0ption 15 ±15PPM 100 ±10PPM Standard 50 ±50PPM 0ption 25 ±25PPM 0ption 20 ±20PPM 100 ±10PPM 0ption 25 ±25PPM 0ption 20 ±20PPM 100 ±10PPM* 0ption 20 ±20PPM 100 ±10PPM* 100 ±20 ±20 ±20 ±20 ±20 ±20 ±20 ±20 ±20 ±20 ±20 ±20 ±20	Load Ca	pacitance					
S Series Frequency Tolerance 25 ±30PPM 20 ±20PPM 0ption 15 ±15PPM 10 ±10PPM Standard 50 ±50PPM 0ption 25 ±25PPM 100 ±10PPM 30 ±30PPM 100 ±100PPM 15 ±15PPM 100 ±10PPM* 15 ±15PPM 100 ±10PPM* 10 ±10PPM* 11 40 to +155 °C Option X -40 to +105 °C Packaging M 250pcs Reel Packaging M 250pcs Reel R 1000pcs Reel 20000 MHz Nominal Frequency Si Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 30: t30 PPM Frequency Tolera					ł		
Standard 30 ±30PPM Frequency Tolerance 25 ±25PPM Option 15 ±15PPM 10 ±10PPM Standard 50 ±50PPM 100 ±10PPM Standard 50 ±50PPM 100 ±10PPM 25 ±25PPM 0ption 25 ±25PPM 20 ±20PPM 15 ±15PPM 10 ±10PPM* 10 ±10PPM 10 0ption X1 40 to ±125 °C 0ption X1 40 265 £0.200 MLS		F			ł		
Prequency Tolerance 25 ±25PPM Qption 15 ±15PPM 10 ±10PPM 10 ±10PPM Standard 50 ±50PPM 10 ±10PPM 30 ±30PPM 25 ±25PPM 0ption 20 ±20PPM 15 ±15PPM 10 ±10PPM* 15 ±15PPM 10 ±10PPM* 10 ±10PPM 10 ±10PPM* 10 ±10PPM* 10 ±10PPM* 10 ±10PPM* 11 0 110 ±10PPM* 111 ±00 to +125°C			3	- 361165			
Prequency Tolerance 25 ±25PPM Qption 15 ±15PPM 10 ±10PPM 10 ±10PPM Standard 50 ±50PPM 10 ±10PPM 30 ±30PPM 25 ±25PPM 0ption 20 ±20PPM 15 ±15PPM 10 ±10PPM* 15 ±15PPM 10 ±10PPM* 10 ±10PPM 10 ±10PPM* 10 ±10PPM* 10 ±10PPM* 10 ±10PPM* 11 0 110 ±10PPM* 111 ±00 to +125°C		Standard	30	±30PPM			
Frequency Tolerance Option 20 ±20PPM 15 ±13PPM 10 ±10PPM Standard 50 ±50PPM 100 ±100PPM 30 ±30PPM 0ption 20 ±20PPM 15 ±13PPM 10 ±10PPM* 15 ±13PPM 10 ±10PPM* 10 ±10PPM* 10 ±10PPM* 10 ±10PPM* 10 ±10PPM* 10 ±10PPM* 11 40 to +105 °C Option X1 -40 to +105 °C Option X1 -40 to +105 °C Option X1 -40 to +105 °C Packaging M 250pcs Reel Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: Third Overtone Mode -10 to +70°C Tem					+		
Option 15 ±15PPM 10 ±10PPM Standard 50 90 100 ±100PPM 30 ±30PPM 25 ±25PPM 20 ±20PPM 15 ±15PPM 10 ±10PPM* 10 ±10PPM 10 ±10PPM* 110 ±10PPM* 10 ±10PPM* 110 ±10PPM* 100 ±10PPM* 100 ±10PPM* 10000rcs 20 0ption X1 -20 option X2 -40 to +125 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel 80.000 MHz Nominal Frequency Strict Resonance 3030: ±30 PPM Frequency Tolerance a	Frequency Tolerance				+		
Standard 50 ±50PPM 100 ±100PPM 30 ±30PPM 25 ±25PPM 0ption 20 ±20PPM 15 ±15PPM 10 ±10PPM* 10 ±10PPM* Mode of Oscillation See Notes Fundamental Mode of Oscillation See Notes -20 to +70 °C Option X -40 to +105 °C Option X1 -40 to +105 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel Packaging R 1000pcs Reel Packaging M 250pcs Reel Packaging R 1000pcs Reel Packaging R 1000pcs Reel Si Series Resonance 300 PM Frequency Tolerance and ±30 PPM Frequency Stability 3: Third Overtone Mode -10 to +70°C Temperature Range R: Tape and Reel Packaging - 1000pcs Reel Notes: Indeel Packaging - 1000pcs Reel Notes: 1 - Fundamental mode does not need to be included in Part Number description. * ±10 PPM Temperature Range does not need to be included in Part		Option					
Standard 50 ±50PPM 100 ±100PPM 30 ±30PPM 25 ±25PPM 0ption 20 ±20PPM 15 ±15PPM 10 ±10PPM* 10 ±10PPM* Mode of Oscillation See Notes Fundamental Mode of Oscillation See Notes -20 to +70 °C Option X -40 to +105 °C Option X1 -40 to +105 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel Packaging R 1000pcs Reel Packaging M 250pcs Reel Packaging R 1000pcs Reel Packaging R 1000pcs Reel Si Series Resonance 300 PM Frequency Tolerance and ±30 PPM Frequency Stability 3: Third Overtone Mode -10 to +70°C Temperature Range R: Tape and Reel Packaging - 1000pcs Reel Notes: Indeel Packaging - 1000pcs Reel Notes: 1 - Fundamental mode does not need to be included in Part Number description. * ±10 PPM Temperature Range does not need to be included in Part		F			t		
Image: Stability 100 ±100PPM 30 ±30PPM 25 ±25PPM 20 ±20PPM 15 ±15PPM 10 ±10PPM* 11 10 11 40 to +85 °C Option X1 40 to +125 °C Option X2 40 to +105 °C Option X2 - - Packaging M 250pcs Reel 1000pcs Reel Packaging R 1000pcs Reel 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. * 140 PPM Temperature Range <		Standard			1		
Frequency Stability Option 25 ±25PPM 20 ±20PPM 15 ±15PPM 10 ±10PPM* 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 - Option X1 -40 to +105 °C - Option X2 -40 to +105 °C - Packaging M 250pcs Reel Packaging 1000pcs Reel - Series Resonance 3030: ±30 PPM Frequency Stability 3: Third Overtone Mode - - -10 to +70°C Temperature Range R </td <td></td> <td></td> <td></td> <td></td> <td>ţ</td> <td></td>					ţ		
Option 20 ±20PPM 15 ±15PPM 10 ±10PPM* Mode of Oscillation See Notes Fundamental Mode of Oscillation 3 Third Overtone Image: Standard See Notes -20 to +70 °C Option X -40 to +85 °C Option X1 -40 to +125 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel Packaging No00pcs Reel 1000pcs Reel Portone Mode 1000pcs Reel 1000pcs 10 to +70°C Temperature Range R 11 to +70°C Temperature Range R 12 to +70°C Temperature Range R 13 Third Overtone Mode 1000pcs Ree			30	±30PPM			
20 ±20PM 15 ±15PPM 10 ±10PPM* Mode of Oscillation 3 Temperature Range Standard Standard See Notes	Frequency Stability	Ontion	25	±25PPM			
10 ±10PPM* Node of Oscillation See Notes Fundamental 3 Third Overtone Option X Option X Option X Option X1 - 40 to +105 °C Option X1 Packaging M 250pcs Reel Packaging M 250pcs Reel 0000pcs Reel Packaging Package - 4 Pad 80.000 MHz Nominal Frequency Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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 - 2		Option	20	±20PPM			
Mode of Oscillation See Notes Fundamental 3 Third Overtone			15	±15PPM			
Mode of Oscillation 3 Third Overtone - 20 to +70 °C Option X -40 to +85 °C Option X1 -40 to +125 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel Packaging R 1000pcs Reel Packaging M 250pcs Reel Packaging R 1000pcs Reel Packaging M 250pcs Reel Packaging M 250pcs Reel Packaging N 1000pcs Reel Packaging N 1000pcs Reel South Z Nominal Frequency Teregreency Siseries Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability Sin third Overtone Mode -10 to +70°C Temperature Range R R: Tape and Reel Packaging - 1000pcs Reel Notes: - 1- Fundamental mode does not need to be included in Part			10	±10PPM*			
3 Third Overtone Image: Temperature Range Standard See Notes -20 to +70 °C Option X -40 to +85 °C Option X1 -40 to +125 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel Packaging R 1000pcs Reel Packaging N 250pcs Reel Standard Tengeuency Tolerance and ±30 PPM Frequency Stability Standard Overtone Mode -10 to +70°C Temperature Range R: Tape and Reel Packaging - 1000pcs Reel Notes: -10 to +70°C 1- Fundamental mode does not need to be included in Part Number description. * ±10 PPM Temperature Stability is onl	Mada at 6		See Notes	- Fundamental			
Temperature Range Option X -40 to +85 °C Option X1 -40 to +125 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel Packaging R 1000pcs Reel Part Number Example: C6S-80.000-S-3030-3-R C6S: 6.0 x 3.5 mm SMD Seam Seal Package - 4 Pad 80.000 MHz Nominal Frequency Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. * ±10 PPM Temperature Range does not need to be included in Part Number description. * ±10 PPM Temperature Range does not need to be included in Part Number description. * ±10 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.		Scillation -	3	Third Overtone			
Temperature Range Option X -40 to +85 °C Option X1 -40 to +125 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel Packaging R 1000pcs Reel Part Number Example: C6S-80.000-S-3030-3-R C6S: 6.0 x 3.5 mm SMD Seam Seal Package - 4 Pad 80.000 MHz Nominal Frequency Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. * ±10 PPM Temperature Range does not need to be included in Part Number description. * ±10 PPM Temperature Range does not need to be included in Part Number description. * ±10 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.				-			
Temperature Range Option X1 -40 to +125 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel Packaging R 1000pcs Reel Part Number Example: C6S-80.000-S-3030-3-R C6S: 6.0 x 3.5 mm SMD Seam Seal Package - 4 Pad 80.000 MHz Nominal Frequency S: Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. * ±10 PPM Temperature Range does not need to be included in Part Number description. * ±10 PPM Temperature Range does not need to be included in Part Number description. * ±10 PPM Temperature Range does not need to be included in Part Number description. * ±10 PPM Temperature Range does not need to be included in Part Number description. * ±10 PPM Temperature Range does not need to be included in Part Number description. 5 Specification subject to change without notice.							
Option X1 -40 to +125 °C Option X2 -40 to +105 °C Packaging M 250pcs Reel Packaging R 1000pcs Reel Scies Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. Each reel contains 1000 pieces. 4- Quantities less than 1000 are shipped bulk in ESD pouches. 5- Specification subject to change without notice.	Temperature Range	-					
Packaging M 250pcs Reel Part Number Example: C6S-80.000-S-3030-3-R 1000pcs Reel C6S: 6.0 x 3.5 mm SMD Seam Seal Package - 4 Pad 80.000 MHz Nominal Frequency Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. 30 to +85° C. 2- Standard Temperature Range does not need to be included in Part Number description. 5 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.	,	-					
Packaging R 1000pcs Reel Part Number Example: C6S-80.000-S-3030-3-R C6S: 6.0 x 3.5 mm SMD Seam Seal Package - 4 Pad 80.000 MHz Nominal Frequency S: Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. * ±10 PPM Temperature Range does not need to be included in Part Number description. 5- Specification subject to change without notice.		Option	X2	-40 to +105 ℃			
Packaging R 1000pcs Reel Part Number Example: C6S-80.000-S-3030-3-R C6S: 6.0 x 3.5 mm SMD Seam Seal Package - 4 Pad 80.000 MHz Nominal Frequency S: Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. * ±10 PPM Temperature Range does not need to be included in Part Number description. 5- Specification subject to change without notice.		[М	250pcs Reel			
C6S-80.000-S-3030-3-R C6S: 6.0 x 3.5 mm SMD Seam Seal Package - 4 Pad 80.000 MHz Nominal Frequency S: Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. Each reel contains 1000 pieces. 4- Quantities less than 1000 are shipped bulk in ESD pouches. 5- Specification subject to change without notice.	F	Packaging					
	C6S-80.000-S-3030-3-R C6S: 6.0 x 3.5 mm SMD Seam Seal Package - 4 Pad 80.000 MHz Nominal Frequency S: Series Resonance 3030: ±30 PPM Frequency Tolerance and ±30 PPM Frequency Stability 3: 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. Each reel contains 1000 pieces. 4- Quantities less than 1000 are shipped bulk in ESD pouches.						
					es		