



Data Sheet



Product Category: SMD Quartz Crystal

Series Number	Package	Description	Last Modified
203	HC-49U Gull Wing	SMD Quartz Crystal	Jan. 01 2002

## FEATURES

- 1.8 MHz to 85 MHz frequency range
- Small footprint for critical space applications
- Resistance weld enclosure
- Low profile
- Tape and Reel



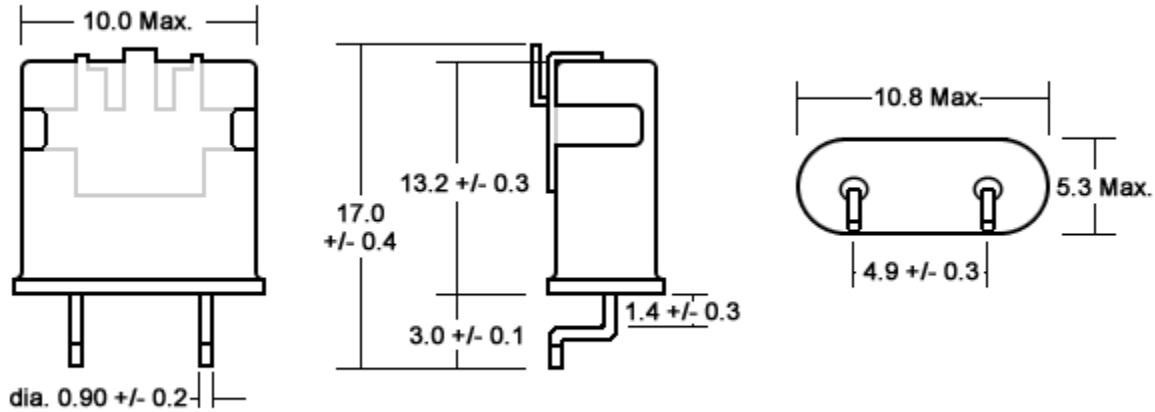
## OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS		CHARACTERISTICS	UNITS
Frequency Range	$f_o$	1.80 ~ 85.0	MHz
Frequency Tolerance	Ref @ +25°C	±10 ~ 50	PPM
Frequency Stability	Ref @ +25°C	±10 ~ 50	PPM
Operating Temperature	$T_{OPR}$	-10 ~ +60 (STD)	°C
Storage Temperature	$T_{STG}$	-40 ~ +85 (STD)	°C
Shunt Capacitance	$C_o$	7.0 max.	pF
Load Capacitance	$C_L$ (Customer Specified)	16, 20, 30, Series	pF
Drive Level	$D_L$	0.1 ~ 1000.0	μW
Insulation Resistance	@ 100 VDC	500 min.	MoHm

## MODE OF OSCILLATION AND EQUIVALENT SERIES RESISTANCE

FREQUENCY RANGE (MHz)	MODE	MAX ESR Ohm	FREQUENCY RANGE (MHz)	MODE	MAX ESR Ohm
1.8432.0 ~ 2.9	Fundamental	600	7.0 ~ 9.9	Fundamental	50
3.0 ~ 3.4	Fundamental	150	10.0 ~ 20.0	Fundamental	30
3.5 ~ 4.9	Fundamental	100	20.1 ~ 27.0	Fund. / 3rd O/T	30 / 60
5.0 ~ 6.9	Fundamental	60	27.1 ~ 75.0	3th Overtone	60

**PACKAGE DIMENSIONS (mm)**



**PART NUMBER GUIDE**

Series Number	Frequency	Load Capacitance	Tolerance @ +25oC	Tolerance Over Temp (oC)	Operating Temp (oC)
<b>203</b>	<b>- 10.0M</b>	<b>- SR</b>	<b>- 25</b>	<b>G</b>	<b>T</b>
Oscilent HC-49U Surface Mount Crystal	Enter desired frequency e.g. 12.0M for 12,000 MHz. See table below for standard frequencies.	See table below for standard load capacitances and enter your required load capacitance. e.g. 20 = 20pF Enter SR for Series	Blank * = ±30 PPM 50 = ±50 PPM 20 = ±20 PPM 15 = ±15 PPM 10 = ±10 PPM	Blank* = ±50 PPM G = ±30 PPM H = ±20 PPM K = ±15 PPM L = ±10 PPM	Blank* = -10~+60 S = -20~+70 T = -30~+80 W = -40~+85
<p><b>NOTE:</b> - Deviations on all parameters available. Please consult Oscilent for details.  <b>DEFINITIONS:</b> - Click on the characteristic names above, for definitions of the particular characteristic.  <b>*STANDARDS:</b> - "Blank" part number selections, indicate standard variables for the particular characteristic.  <b>**PACKAGING:</b> - Add -TR for Tape/Reel. Click <a href="#">here</a> for tape/reel specifications</p>					

**STANDARD FREQUENCIES / LOAD CAPACITANCE - FOR GUIDE ONLY / OTHER FREQ/LOADS AVAILABLE**

FREQUENCY (MHz)	LOAD (pF)							
	Series	12	13	16	17	18	20	30
1.8432	Std.	-	-	-	-	-	-	Std.
2.000	Std.	-	-	-	-	-	Std.	Std.
2.048	-	-	-	-	-	-	-	-
2.4576	-	-	-	-	-	-	Std.	Std.
2.500	Std.	-	-	-	-	-	-	-
3.000	Std.	-	-	-	-	-	-	-
3.2768	-	-	-	-	-	-	-	-
3.579545	Std.	-	-	-	-	-	-	-
3.6864	Std.	-	-	-	-	-	-	-
3.93216	-	-	-	-	-	-	-	-
4.000	Std.	-	-	-	-	-	Std.	-
4.032	Std.	-	-	-	-	-	Std.	-
4.096	-	-	-	-	-	-	Std.	-

4.194304	-	-	-	-	-	-	-	-
4.433618	-	-	-	-	-	-	Std.	-
4.9152	Std.	-	-	-	-	-	Std.	-
5.000	Std.	-	-	-	-	-	Std.	-
5.0688	Std.	-	-	-	-	-	Std.	-
5.185	Std.	-	-	-	-	-	-	Std.
5.9904	Std.	-	-	-	-	-	Std.	-
6.000	Std.	-	-	-	-	-	-	Std.
6.144	-	-	-	-	-	-	-	Std.
6.5536	-	-	-	-	-	-	-	-
7.3728	Std.	-	-	-	-	-	Std.	-
7.680	-	-	-	-	-	-	Std.	-
8.000	Std.	-	-	-	-	-	Std.	Std.
8.192	Std.	-	-	-	-	-	-	-
9.216	Std.	-	-	-	-	-	Std.	-
9.8304	Std.	-	-	-	-	-	Std.	-
10.000	Std.	-	-	-	-	-	-	-
10.738635	Std.	-	-	-	-	-	-	-
11.000	Std.	-	-	-	-	-	-	-
11.046	Std.	-	-	-	-	-	-	-
11.0592	Std.	-	-	-	-	-	Std.	Std.
11.228	Std.	-	-	-	-	-	-	-
11.520	Std.	-	-	-	-	-	-	-
11.98135	Std.	-	-	-	-	-	-	-
12.000	Std.	-	-	-	-	-	Std.	Std.
12.000393	-	-	-	-	-	-	-	-
12.096	Std.	-	-	-	-	-	-	-
12.288	Std.	-	-	-	-	-	Std.	-
13.5168	Std.	-	-	-	-	-	-	-
14.31818	Std.	-	-	-	-	-	Std.	-
14.690	Std.	-	-	-	-	-	-	-
14.7456	Std.	-	-	-	-	-	Std.	-
15.000	Std.	-	-	-	-	-	-	-
16.000	Std.	-	-	-	-	-	Std.	-
16.000312	-	-	-	-	-	-	-	-
18.000	Std.	-	-	-	-	-	Std.	-
18.432	Std.	-	-	-	-	-	Std.	-
19.6608	Std.	-	-	-	-	-	Std.	-

20.000	Std.	-	-	-	-	-	Std.	-
22.1184	Std.	-	-	-	-	-	-	-
24.000(F)	Std.	-	-	-	-	-	Std.	-
24.00014 (F)	-	-	-	-	-	-	-	-
35.2512 (OT)	-	-	-	-	-	-	-	-
38.00053 (OT)	-	-	-	-	-	-	-	-
40.32 (OT)	-	-	-	-	-	-	-	-
48.00 (OT)	Std.	-	-	-	-	-	-	-
49.86 (OT)	-	-	-	-	-	-	Std.	-
FREQUENCY (MHz)	Series	12	13	16	17	18	20	30
	LOAD (pF)							
<b>F = Fundamental   OT = 3RD Overtone</b>								
<b>NOTE: Other frequencies and load capacitance available. Please consult Oscilent for part numbers.</b>								

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