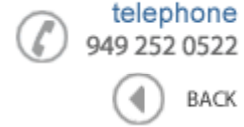




**Data Sheet**



Product Category: SMD Quartz Crystal

Series Number	Package	Description	Last Modified
250 ~ 251	HC-49SM	SMD Quartz Crystal	Sept. 01 2004

**FEATURES**

- Cost effective
- Low profile
- Space saving design
- Tape and Reel
- RoHs / Lead Free compliant



**OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS**

PARAMETERS	CONDITIONS	CHARACTERISTICS	UNITS
Frequency Range	$f_0$	3.000 ~ 85.00	MHz
Frequency Tolerance	Ref @ +25°C	±30 std. (±5 ~ ±100 avail.)	PPM
Temperature Tolerance	$T_L$	±50 std. (See Table 2)	PPM
Operating Temperature	$T_{OPR}$	-10 ~ +60 std. (See Table 2)	°C
Storage Temperature	$T_{STG}$	-55 ~ +125	°C
Shunt Capacitance	$C_O$	7.0 max.	pF
Load Capacitance	$C_L$	20.0 std. (8 ~ 50 and Series avail.)	pF
Drive Level	$D_L$	0.1 ~ 1.0	mW
Aging (First Year)	@ +25°C	±5.0	PPM/Y
Insulation Resistance	$I_R$	500 (DC100 ±10V) min.	Mohm

**TABLE 1 - OPERATION MODE AND MOTIONAL RESISTANCE (RS)**

FREQUENCY RANGE (MHz)	MODE	ohm max.	FREQUENCY RANGE (MHz)	MODE	ohm max.
3.000 ~ 3.500	Fundamental	300	8.000 ~ 10.000	Fundamental	60
3.500 ~ 3.800	Fundamental	150	10.000 ~ 12.000	Fundamental	50
3.800 ~ 4.100	Fundamental	120	12.000 ~ 28.000	Fundamental	40
4.100 ~ 5.000	Fundamental	100	28.000 ~ 33.500	Fundamental	50
5.000 ~ 6.000	Fundamental	80	26.000 ~ 40.000	3rd OT	100
6.000 ~ 8.000	Fundamental	70	40.000 ~ 75.000	3rd OT	80

**TABLE 2 - FREQUENCY - TEMPERATURE TOLERANCE**

Cutting	Temperature Range	Tolerance (PPM)					
		±5.00	±10.0	±15.0	±20.0	±30.0	±50.0
AT	0 ~ +50°C	x	x	x	x	x	x
	-10 ~ +60°C		x	x	x	O	x
	-20 ~ +70°C			x	x	x	O
	-30 ~ +80°C				x	x	x

x	available
O	recommended





24.000(F)	Std.	-	-	Std.	-	Std.	Std.	-
24.00014 (F)	-	-	-	-	-	Std.	-	-
40.00 (OT)	-	-	-	-	-	Std.	-	-
40.32 (OT)	-	-	-	-	-	-	Std.	-
<b>FREQUENCY (MHz)</b>	<b>Series</b>	<b>12</b>	<b>13</b>	<b>16</b>	<b>17</b>	<b>18</b>	20	<b>32</b>
	<b>LOAD (pF)</b>							
<b>F = Fundamental   OT = 3RD Overtone</b>								
<b>NOTE:</b> Other frequencies and load capacitance available. Please consult Oscilent for part numbers.								

**Oscilent Corporation** - CALL **949.252.0522**

**Series No.:** [250 to 251](#)

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