

**DESCRIPTION**

The 49S(2) SMD crystal is a miniature AT cut strip crystal units packaged for surface mounting.

**ELECTRICAL SPECIFICATION**

Frequency Range	3.579545 to 80.000 MHz
Load Capacitance	10pF to Series
Frequency Tolerance (at 25 °C)	±30ppm Maximum
Frequency Stability in Temperature	±30ppm Maximum
Operating Temperature Range	-20 °C to +70 °C Standard (or Optional)
Storage Temperature Range	-40 °C to +85 °C
Equivalent Series Resistance (ESR)	See ESR Table
Drive Level	1.0mW Maximum
Shunt Capacitance	7pF Maximum
Aging (at 25 °C)	±3ppm per year
Insulation Resistance	500 MOhm Minimum

**FREQUENCY RANGE AND OSCILLATION MODE**

Fundamental (F)	Third Overtone (3OT)	Fifth Overtone (5OT)
3.579545 to 30.000MHz	24.000 to 70.000MHz	60.000 to 80.000MHz

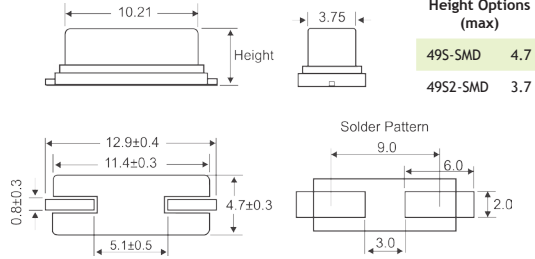
**ENVIRONMENTAL SPECIFICATION**

Conditions		Results
<b>1. Temperature test</b>		
Temperature cycling test	Steps of cycle	1) at -55 °C, 30 minutes 2) at +25 °C, 10-15 min. 3) at +85 °C, 30 minutes 4) at +25 °C, 10-15 min.
	Number of cycles	3 times
Frequency and wave form of tested products must remain within specifications		
<b>2. Aging test</b>		
Temperature	+85 °C ±20 °C	Deviation of frequency must be less than ±3ppm
Length of test	96 hours	
<b>3. Salt spray test</b>		
Temperature	+35 °C ±2 °C	There should be no stain on surface of products
Length of test	48 hours	
NaCl %	5%	
<b>4. Humidity test</b>		
Temperature	+40 °C ±2 °C	a) Insulation resistance must be 500 MOhms/100 Vac minimum. b) Resistance and wave form must remain within specifications
Relative humidity	90 - 95%	
Length of test	96 hours	

**MECHANICAL SPECIFICATION**

Conditions		Results
<b>1. Vibration test</b>		
Frequency	10 - 55Hz	Frequency and wave form of tested products must remain within specifications
Amplitude	0.762mm	
Sweep	1.0 minute	
Duration	2 hours	
<b>2. Drop test</b>		
Method of drop	Natural drop	Frequency and wave form of tested products must remain within specifications
Dropping floor	Hard wood board	
Height	75 cm	
Number of drops	3 times	

**MECHANICAL DIMENSIONS (all in mm)**



**Height Options (max)**

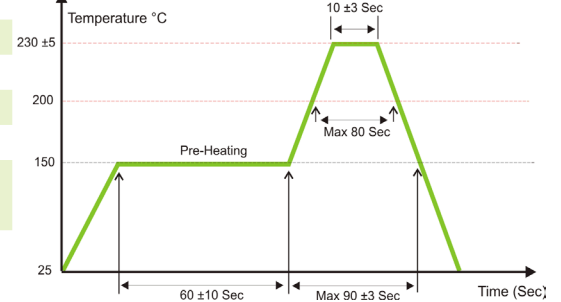
49S-SMD	4.7
49S2-SMD	3.7



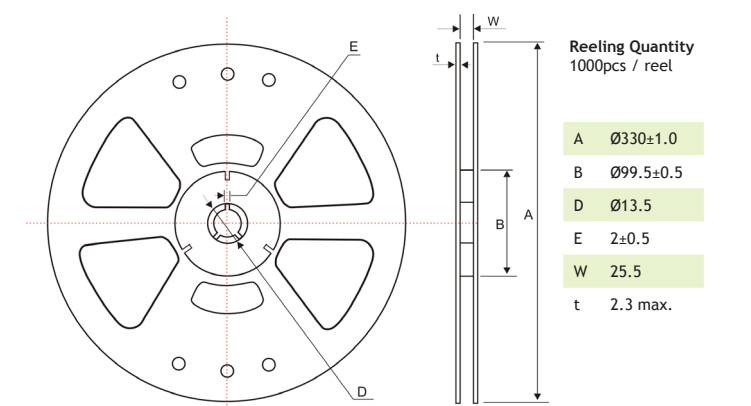
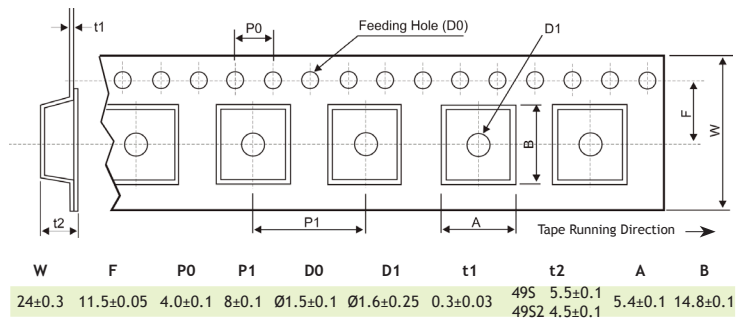
**ESR TABLE (Ohms)**

3.5 to 4.0 MHz	150
4.0 to 8.0 MHz	100
8.0 to 14 MHz	60
14 to 24 MHz	40
>24 MHz	40 (F) 80 (3OT)

**SOLDERING**



**TAPE SPECIFICATIONS (all in mm) - Carrier Tape Dimensions**



**PART NUMBERING SYSTEM (Example)**

