

DESCRIPTION

The SMD0402 SMD crystal has an ultra small package and wide frequency range.

ELECTRICAL SPECIFICATION

Frequency Range	12.00 to 32.000 MHz
Load Capacitance	10pF to Series
Frequency Tolerance (at 25 °C)	±30ppM Maximum
Oscillation Mode	Fundamental
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

ESR TABLE (Ohms)

10.00 to 19.999 MHz	80
20.0 to 25.999 MHz	70
26.000 to 32.000 MHz	50

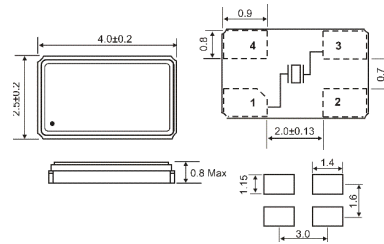
ENVIRONMENTAL SPECIFICATION

Conditions		Results
1. Temperature test		
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	
2. Aging test		
Temperature	+85 °C ±20 °C	Deviation of frequency must be less than ±3ppM
Length of test	96 hours	
3. Salt spray test		
Temperature	+35 °C ±2 °C	There should be no stain on surface of products
Length of test	48 hours	
NaCl %	5%	
4. Humidity test		
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	

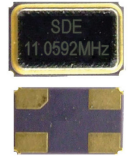
MECHANICAL SPECIFICATION

Conditions		Results
1. Vibration test		
Frequency	10 - 55Hz	Frequency and wave form of tested products must remain within specifications
Amplitude	0.762mm	
Sweep	1.0 minute	
Duration	2 hours	
2. Drop test		
Method of drop	Natural drop	Frequency and wave form of tested products must remain within specifications
Dropping floor	Hard wood board	
Height	30 cm	
Number of drops	3 times	

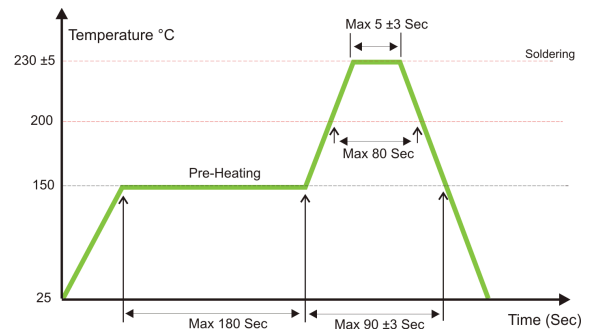
MECHANICAL DIMENSIONS (all in mm)



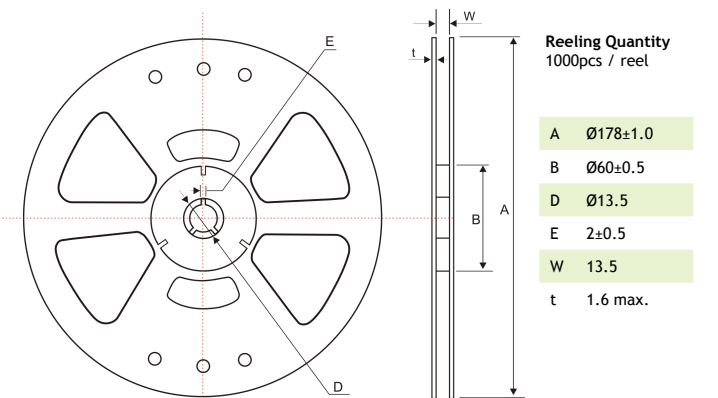
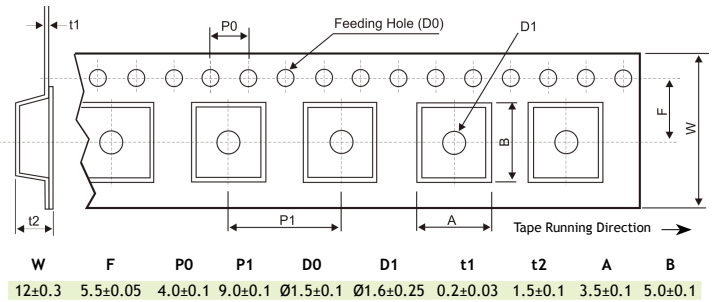
Pin	Connection
1	Input
2	Ground
3	Output
4	Ground



SOLDERING



TAPE SPECIFICATIONS (all in mm) - Carrier Tape Dimensions



PART NUMBERING SYSTEM (Example)

SMD0402-16.000-F-20-30-30-A-T

