

**AEC**[®]

AEC Electronics Company Limited

PRODUCT SPECIFICATION**SMD CRYSTAL RESONATOR****AEC PART NUMBER / SPEC. NO:** 49S4HSMD20.000M-AF-30/30-35R-30P**CUSTOMER:** Schukat electronic Vertriebs GmbH (Schukat part no QSMD020)

This model is ROHS/PB-free compliance according to the ROHS directive 2002/95/EC

Customer's Name	Schukat electronic Vertriebs GmbH
Production Name	SMD Crystal Resonator
Frequency	20MHz
Model No	49S4HSMD20.000M-AF-30/30-35R-30P
Issue Date	14 th May, 2026

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Prepared	Inspection	Approved
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Product Specification (AEC Electronics Company Limited)	Original Date	07/02/2018
	PN:	49S4HSMD

1. GENERAL PROVISION

- 1-1 Production Name: SMD Crystal Resonator
- 1-2 Holder Type: 49S4HSMD
- 1-3 This specification relates to the crystal resonator to be supplied by AEC Electronics Company Limited. (AEC).

2. ELECTRICAL DATA

Items	Parameters	Condition
2-1	Frequency:	20MHz
2-2	Mode of Oscillation:	AT Fund.
2-3	Tolerance of Center Frequency:	+/- 30ppm at 25°C
2-4	Frequency Stability:	+/- 30ppm(-10°C to +60°C)
2-5	Operating Temperature Range:	-10°C to +60°C
2-6	Storage Temperature Range:	-40°C to +85°C
2-7	Equivalent Series Resistance:	35Ω max.
2-8	Load Capacitance (CL):	30pF
2-9	Drive Level:	0.1 mW
2-10	Shunt Capacitance (C ₀)	7pF max
2-11	Motional Capacitance(C ₁)	11~13fF
2-12	Aging: Less than	+/- 3 ppm per year
2-13	Insulation Resistance:	More than 500M ohms at DC 100V
2-14	Test: Measured in <u>S&A 250B: 6.07</u>	

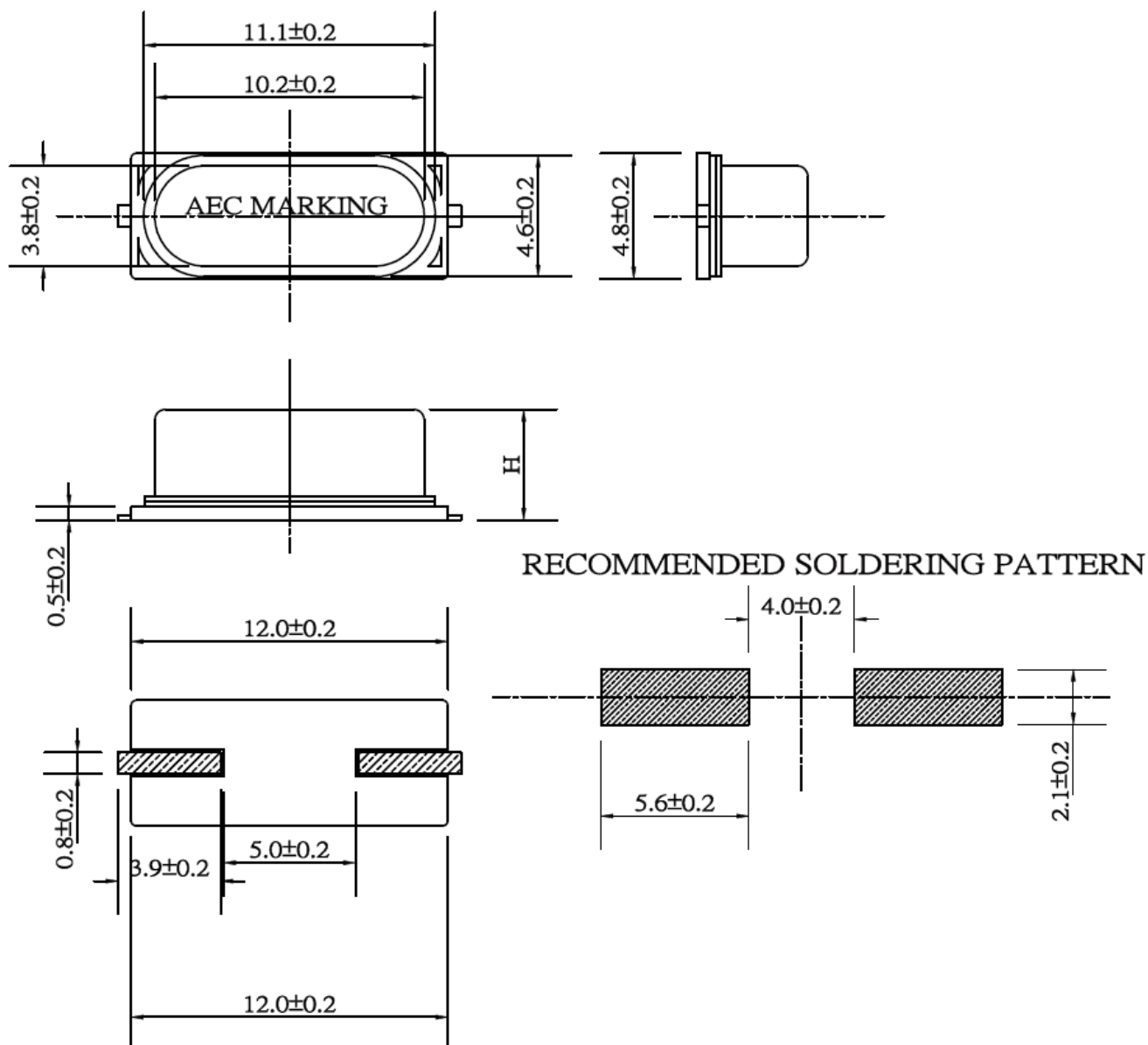
3. ENVIRONMENTAL TEST CONDITION

The following are our reliability test condition and criteria.

Items	Test Method and Criteria
3-1 Drop Test	Dropping from 20cm height 3 times on firm wood Variation: Frequency less than +/- 5ppm Resistance less than +/-15%
3-2 Leakage Test	No bubble in water at 90°C +/- 5°C for 3 minutes
3-3 Seal Strength	9 kgs force perpendicular to top & bottom
3-4 Lead Pull	1kg force along leads

Each test is independently examined.

4. DIMENSION & LAND PATTERN



H = 4.2max for 49S4HSMD

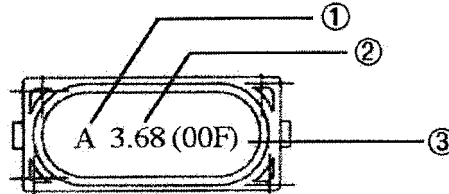
AEC[®] AEC Electronics Company Limited		NO.	Revised DATE	MODIFY CONTENTS		
		1	2018.2.7	NEW UPDATE		
DIMENSION	mm					
SCALE		MODEL		49S/SMD		
TOLERANCE	±0.2	PART NAME		2-D graph		
DRAWING NO.				APPV'D BY	CHECK BY	DRAWN BY
49S4HSMD-RES				Henkie	Andy	Teddy

5. MARKING

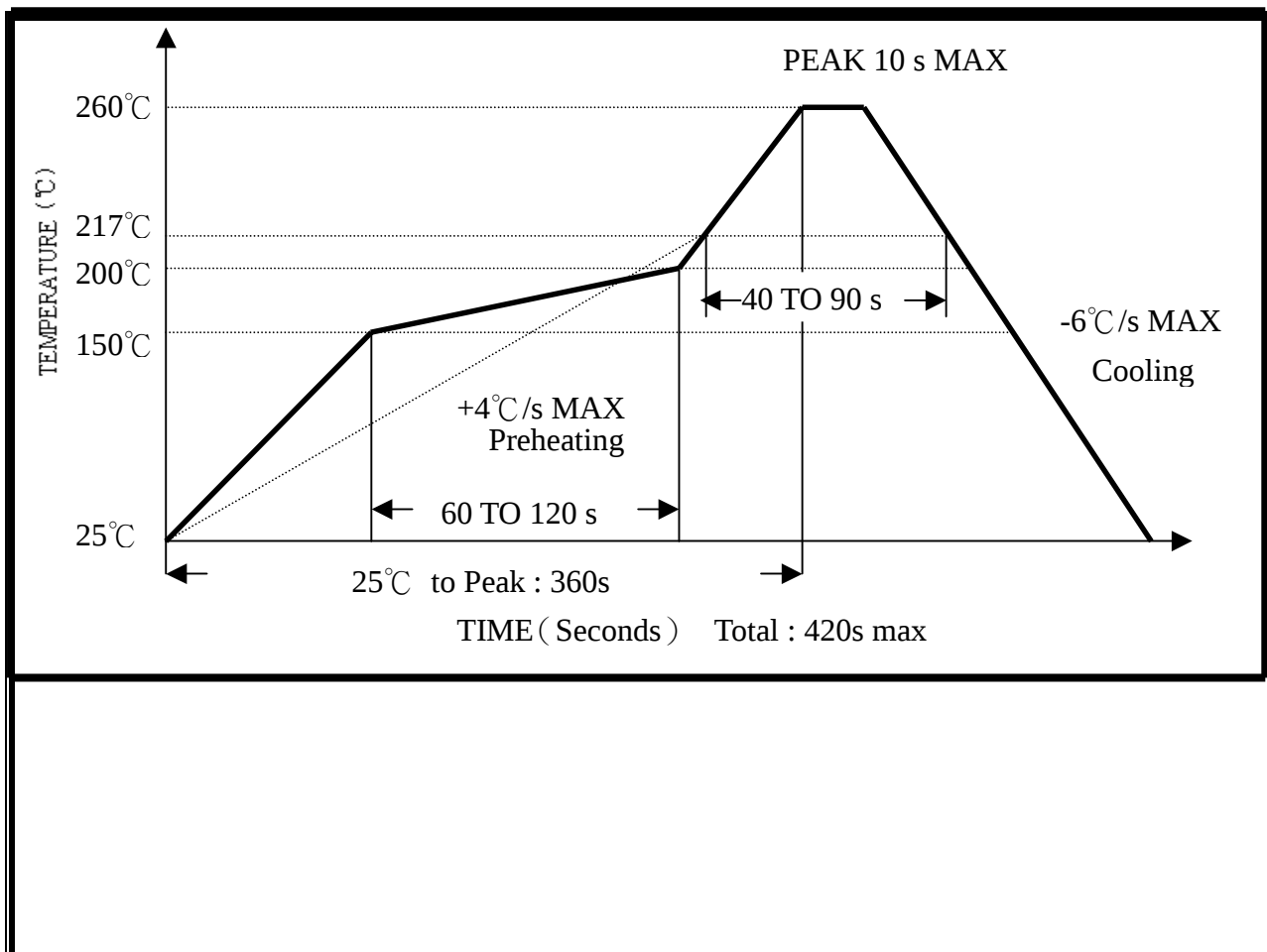
Example

Remarks:

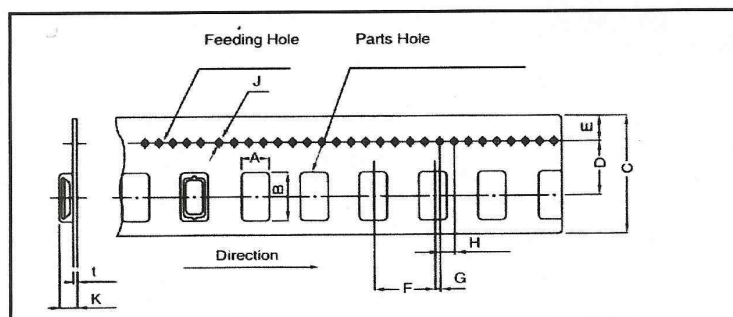
- ① Company Code
- ② Frequency
- ③ YEAR & Month Code



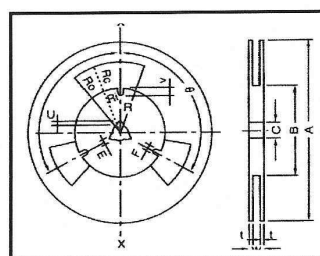
6. SOLDER REFLOW DIAGRAM



7. PACKAGE



Symol	Size
A	5.0±0.1
B	15.0±0.2
C	24.0±0.3
D	11.5±0.1
E	1.75±0.1
F	8.0±0.1
G	12.0±0.1
H	2.0±0.1
H	4.0±0.1
J	Ø1.5 ^{+0.1} ₋₀
K	3.5±0.1
K	4.5±0.1
T	0.4±0.05
H	20.5±0.5



Symol	Size
A1 X A2	11.1X3.5
T	5.0max.
d	Ø0.43 ^{+0.05} _{-0.02}
P	12.7±1.0
Po	12.7±1.0
P1	3.85±0.7
P2	6.35±1.0
F	5.0 ^{+0.5} _{-0.02}
Δh	0±1.0
W	18.2±0.2
W0	13.0 ^{+0.8} _{-0.2}
W1	9.0±0.5
W2	2.0max.
H	20.5±0.5
H1	24.0max.
D0	Ø4.0±0.2
t	0.7±0.1
Δh1	0±1.0

Unit : mm

You would like to select on tape package : ☐

8. NOTES

8-1. HANDLING

(ELECTROSTATIC DISCHARGES)

Please take precautionary measures against ESD damage.

(SHOCK RELIABILITY)

This device contains a quartz crystal, so please do not give too much shock or vibration.

Surface mounters can be used for assembling, but be sure to check your machine conditions before using them.

(ULTRASONIC CLEANING)

Also be sure to check your cleaning condition of ultrasonic cleaning apparatus.

(TEMPERATURE AND HUMIDITY)

We recommend user to store and use device under normal temperature and humidity for frequency stability. Condensation may cause this device damages.