

APPROVAL SHEET

Customer Name : _____
Customer P/N : _____
Frequency : 32.768000 KHz
Aker Approved P/N : D31N-032768-B-AL-02
Aker MPN : D31N-032768-B-AL-02
REVISION : A0
ISSUED DATE : 2022/8/25

APPROVED	CHECKED	PREPARED
<i>Earnest</i>		<i>Kika</i>
APPROVED BY CUSTOMER		

AKER TECHNOLOGY CO., LTD.

ADDRESS : NO 11-3, Jianguo Rd., Tanzi Dist., Taichung City 427, Taiwan.

TEL : 886-4-25335978

FAX : 886-4-25336011

Web: www.aker.com.tw

MSL:Level 1

RoHS compliant



Aker Approved P/N : D31N-032768-B-AL-02	
APPROVED : Earnest	SHEET : 1 of 4
PREPARED : Kiku	REV . : A0
Confidential	

Rev.	Date	Reviser	Revise contents
A0	2022/8/25	Kiku	Initial Released

Please kindly be noted that AKER DO NOT guarantee parts quality which involves human security application.



Aker Approved P/N : D31N-032768-B-AL-02

APPROVED : Earnest SHEET : 2 of 4

PREPARED : Kiku REV. : A0

Confidential

TUNING FORK CRYSTAL SPECIFICATION

1. ELECTRICAL CHARACTERISTICS

Measurement temperature: 25±2°C

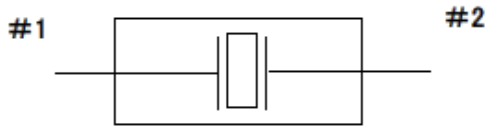
Item	Symbol	Rating	Note
Storage temperature range	T_stg	-55~+125°C	
Maximum drive level	DL max.	1.0 μW max.	

Operating temperature range	T_use	-40~+85°C	
Drive level	DL	0.1 μW typ.	

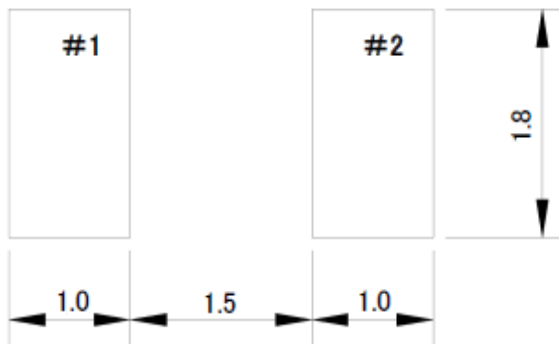
	Item	Symbol	Specification	Condition
1	Nominal frequency	f_nom	32.768 kHz	
2	Frequency tolerance	f_tol	± 20 × 10 ⁻⁶	
3	Load capacitance	C _L	6.0 pF	
4	Motional resistance	R ₁	70 kΩ max.	Measured with ATI 4192A Impedance analyzer OSC LEVEL = 0.1V
5	Motional capacitance	C ₁	3 fF typ.	
6	Shunt capacitance	C ₀	1 pF typ.	Measured with ATI 4192A Impedance analyzer OSC LEVEL = 0.1V
7	Turnover temperature	T _i	25 ± 5°C	Measure this coefficient at 5 points of -40°C, -20°C, 25°C, 60°C, 85°C using C-MOS circuit.
8	Parabolic coefficient	B	(-0.03±10%) × 10 ⁻⁶ /°C ²	
9	Frequency aging	f_age	± 3 × 10 ⁻⁶ /year	25±3°C, First year
10	Insulation resistance	IR	500 MΩ min.	Measured with ATI 4329A Insulation Resistance Meter Apply DC100V

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2 . INTERNAL CONNECTION:

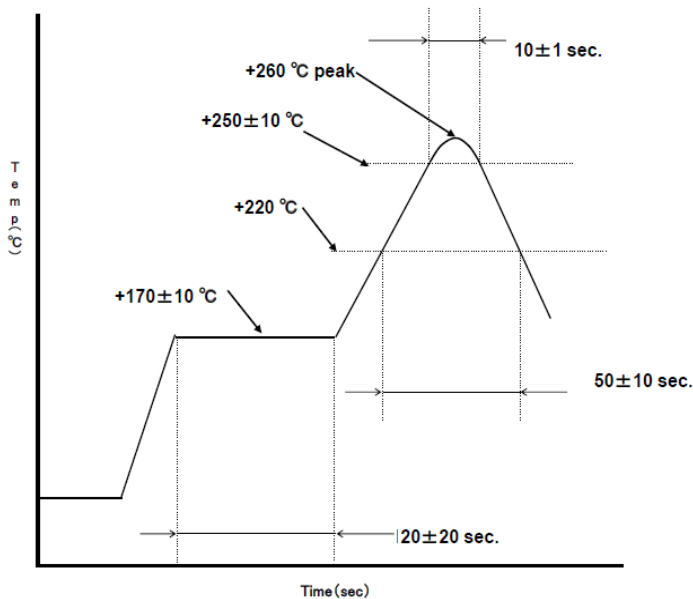


3 . RECOMMENDED SOLDERING PATTERN:(Unit : mm)

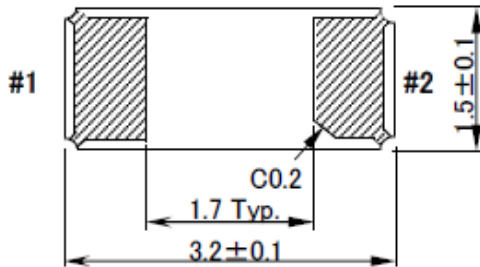
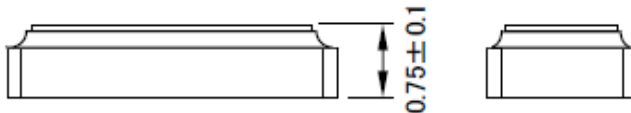
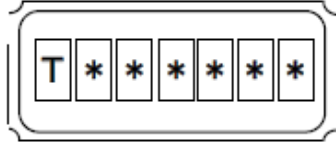


4. SOLDERING REFLOW PROFILE :

Pre-heating temperature : +170°C Pre-heating time : 120sec
Heating temperature : +220°C Heating time : 50sec



5. DIMENSIONS : (Unit : mm)



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*1 *2 *3 *4 *5 *6 *7

- *1 Product name
- *2 Type of product
- *3 Specification
- *4 CL (6pF:A, 7pF:B, 9pF:J, 12.5pF:F)
- *5 Year of production (Last digit of year)
- *6,7 Week of production (01 ~ 52)

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