Acknowledgement Book

NO. ECAB2008043

Customer :	
Production name:	HC-498 X'TAL 11.50×4.70×3.68
Nominal Freq. :	8.000000MHz
Customer P/N :	
P/N :	B08000J065
	Receiver
Please	e return one after acknowledgement

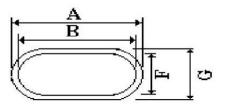
Approved By	MFG	QA	PE/RD
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BOOK OF MODIFICATION

No.	DATE	CONTENT OF MODIFICATION	REASON OF MODIFICATION	PAGE	ITEM	APPROVE
0	2020-8-25	INTIAL RELEASED				
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
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			No:	P: 2/8 ECAB200804
QUARTZ CRYSTAL UN	115		Date:	2020-8-25
SPECIFICATION OF QUARTZ CRYSTAL UNITS				
1.HOLDER TYPE HC-49S X'TAL 11.50×4.70×3.68				
2.GENERAL				
2-1 FREQUENCY (F0)	8.00000	OMHz		
2-2 MODE OF OSCILLATION (Mn)	FUNDA	MENTAL		
2-3 OPERATION TEMPERATURE RANGE (T_0)	-20°C ~	+70℃		
2-4 STORAGE TEMPERATURE RANGE (Ts)	-50°C/-	-125℃		
2-5 TEST SET	S&A 25	0B ANAL	YSIS SYST	EM
2-6 DRIVE LEVEL (DL)	100µw	TYP	E (500µw]	MAX)
2-7 LOADING CAPACITANCE (CL)	20PF			
3.ELECTRICAL CHARACTERISTICS				
(This test shall be performed under the condition of t	temperature	e at 25±3°C	C.)	
3-1 FREQUENCY TOLERANCE ($\triangle f$)	±20 ppr	nMAX		
3-2 EQUIVALENT RESISTANCE (Rr)	40ΩMax	/Series		
3-3 TEMPERATURE DRIFT (Tc)	±20ppm	/MAX -20	°C+70°C	
3-4 SHUNT CAPACITANCE (Co)	<7.0PF			
3-5 INSULATION RESISTANCE	500MΩ	min/DC 10	00V±15V	
	(Lead to	lead ,case	to lead)	
4.DIMENSIONS AND MARKING				
4-1 HOLDER TYPE	HC-49S	X'TAL 11	.50×4.70×3.	68

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	DESIGN	INSPECTION
JinHua East Crystal Electronic Co.,Ltd.	陈振辉	王晓东
CO.,Liu.		

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4-2 DIM	1ENSI	ON (n	nm)											
			H	C-49U	J/S									
	A	1	1	11.50N	ЛАХ									
	E	3]	10.30N	ЛАХ									
	(C		4.88 ±	:0.2									
	I)		0.45±										
	ŀ	E		13.2±										
	ŀ			3.80M										
	(4.70M										
	H	1		3.68M	нал									
			Frequ	uency	. 8.()00JH	IO Month c	Year c code	code					
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		P: 4/8
QUARTZ CRYSTAL UNITS	No:	ECAB2008043
QUARIZ CRISIAL UNITS	Date:	2020-8-25
4-4 PACKING		
Put 200pcs crystals into a plastic bags with bubbly sheet sur	rounded	
into inner-box, put 20 inner-boxes with foam sheet surrounded in		
then write HOLD.FREQ.QTY in inner-box and paper case.		
1.INNER BOX : (Unit : mm) 5bag×200pcs		
=1000pcs/box		
200pcs/bag		
2.LOGO STICKER(CARTON and INNER BOX) : (Unit : mm)		
Label a CRYSTAL UNITS CUST P/N ECEC P/N P/O FREQUNCY QTY MARKING MADE IN CHINA	*10	
Label h L/N 10+/-5	PUT IN	
Box type	size (L×W×H) m	m
Atype (Box 1~3K)	200×200×165	
Btype (Box 4~6K)	205×205×290	
CBtype (Box 7~10k	(X) 400×205×290	
DBtype (Box 11~20)	K) 420×320×250	
EnHue Fest Constal Flaster	DESIGN	INSPECTION
JinHua East Crystal Electronic Co.,Ltd.	陈振辉	王晓东

		No:	ECAB200804
QUARTZ CRYSTAL UNITS		Date:	2020-8-25
5.MECHANICAL ENDURANCE			
Provided that measurement shall be carried out after letting it a temperature for 1 hour.	lone in the ro	oom	
5-1.SHOCK			
Electrical charateristics shall be satisfied after dropping three tin height of 75cm onto the board of the 3cm thickness.	mes from the		
5-2.VIBRATION			
Electrical charateristics shall be satisfied after supplying follows	ing vibration		
a).ENTIRE FREQUENCY RANGE	10~55Hz		
b).REPEATED PERIOD	1~2min		
c).AMPLITUDE	1.5mm		
d).DIRECTION	X.Y.Z		
e).PERIOD	2hours/Each 1	Direction	
5-3.STRENGTH OF TERMINALS/LEAD-WIRES			
(1) TENSILE			
a).Body of specimen shall be fixed, and 900g of tension v	weight shall b	be supplied	
gradually to axial direction of terminals/lead-wires for	: 30 sec.		
b).After above test a),there is no distinct damage or dama	age to sealing	5.	
②BENDING			
a).Body of specimen shall be fixed, and 90 degree bendin	ng shall be gi	ven,being supplie	ed
225g tension weight.After that,terminals/lead-wires shall	-		
Then the same bending and straightening shall be supplied	ed to the opp	osite direction in	the
same axial.	al damagaa a	n the encoimen	
b).After above test a),there is no observation of any visua	al damages o	n the specimen.	
5-4.SEALING TIGHTNESS			
Put the specimens in C ₂ H ₅ OH,raise pressure it with 0.5Mpa for	or 10 min,		
test the insulation resistance at DC.100V, the result shall be ov	ver 500M Ω .		
Electrical characteristics shall be satisfied and no sealing dam	lage.		
nHua Fast Crystal Flastran		DESIGN	INSPECTIO
nHua East Crystal Electroni			
Co.,Ltd.		陈振辉	王晓东

OLIADTZ COVETAL LINUTE	No:	ECAB2008043
QUARTZ CRYSTAL UNITS	Date:	2020-8-25

5-5.SOLDERING HEAT RESISTANCE

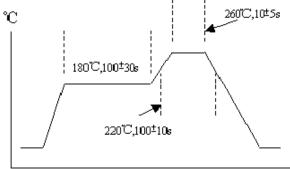
Electrical characteristics shall be satisfied .Without distinct looseness of terminals.

(1).FLOW(WAVE)SOLDERING

Following profile of heat stress is applied to resonator, then being place in the natural

condition for 1 hour, resonator shall be measured.

Recommendation of flow condition for Lead-Free solder



Peak temperature	260°C
Dipping time	10±5 sec
Soldering	1 time
Dipping to the lead joint of co	mponent

P: 6/8

Time (seconds)

②.SOLDERING DIP

Terminals/lead-wires of specimen shall be dipped into solder melter tank at $+230^{\circ}C \pm 5^{\circ}C$ for 3 sec. Dipping depth shall be 2mm from the bottom of specimens body.(After applying ROSIN FLUX) soldering portion shall be covered in over 95% of Terminals/lead-wires dipped.

5-6.BEND STRENGTH PCB

- Resonator is soldered into the ceater of PCB which is laid on the 2 small supporters spaced 90cm. PCB deflected to 1mm below from horizontal level by the pressing force with 20 x10.R10 stick. The force is supplied for 1 second,5 times repeatedly.
- ②.After above test ①.there is no observation of any visual damages on specimen and the electical characteristic shall be satisfied.

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Co.,Ltd.		

	No:	P: 7/8 ECAB2008
QUARTZ CRYSTAL UNITS	Date:	2020-8-25
5-7.ENVIRONMENTAL ENDURANCE		
Provided that measurement shall be carried out after letting it alone in the room temperature for 1 hour.		
(I)HUMIDITY		
Electrical characteristics shall be satisfied after letting it alone at 65 ± 2 in humidity of 90~95% for 250 hours.	°C	
②.STORAGE IN LOW TEMPRATURE		
Electrical characteristics shall be satisfied after letting it alone at -45± for 250 hours.	-2℃	
③.STORAGE IN HIGH TEMPRATURE		
Electrical characteristics shall be satisfied after letting it alone at 85 ± 2 for 250 hours.	2°C	
④.TEMPERATURE CYCLE		
Electrical characteristics shall be satisfied after supplying the followin cycle(3cycle). Temperature shift from low to high, high to low shall be 1°C/sec. (refer to Fig-3)	•	
25 <u>±5°C</u> 30min '-30 ±3 °C		
1 cycle		
(Fig-3)		
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	ARTZ CRYS	STAL UNI	18	No: Date:	ECAB200804 2020-8-25
6. Struc					2020-0-23
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No.		M VIEW) Materials	Manut	facture's name	1
<u>No.</u>	Items	Materials		f <mark>acture's name</mark> EIKO CHINA]
No. 1 2	Items Metal Can(Cap)	Materials Ni Alloy	TOGAWA S	EIKO CHINA	
1	Items Metal Can(Cap) Substrate(Base)	Materials Ni Alloy Kovar (Pb free)	TOGAWA S	EIKO CHINA . CHINA	
1 2	Items Metal Can(Cap)	Materials Ni Alloy	TOGAWA S	EIKO CHINA 2. CHINA JAPAN	