



3.2mmX2.5mm 7M Series Crystal Adding New Package Supplier Quality Evaluation Report

TXC CORPORATION
2021/12/17

Due to global materials supply shortage currently and value chain risk in coming several years, supply chain disruption risk management became one of the most important topics at this moment.

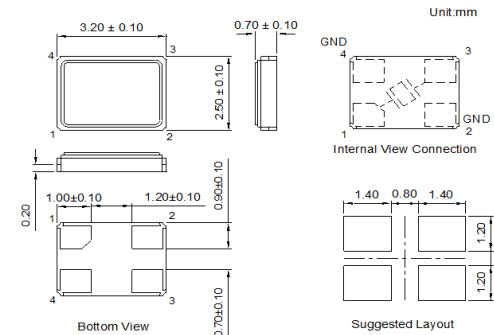
Under the circumstances, TXC have to source package from different supplier to ensure continuous supply and to reduce the shortage impact to the customer's business.

So, TXC has evaluated, tested, verified and approved another new source of package for our 3225 crystal products to meet your applications; TXC ensure the performance of new source package(C CORP.) is same as original(K CORP.) one.

1. Evaluation items of new supplier product and results

Size : 3.20mm×2.50 mm

Name : 3.2X2.5 XTAL PKG



<Evaluation contents / Results list>

No.	Evaluation content	Test conditions	Judgment criteria	Result
1	Dimensions test	Ambient temperature:25±5°C; Relative humidity : 40%~70%.	Specification For Approved ,No significant difference in dimensions.	Accept
2	Electrical characteristics	Ambient temperature:25±5°C; Relative humidity : 40%~70%.	Specification For Approved , No significant difference in dimensions.	Accept
3	Temperature characteristics test	Temperature : -30 ~ 105°C.	Specification For Approved , No significant difference in dimensions.	Accept
4	Drop Test	150 cm height,3 times on concrete floor .	Frequency and E.S.R changes are in accordance with the customer's specifications.	Accept
5	Mechanical Shock	Device are shocked to half sine wave (1000 G) three mutually, perpendicular axes each 3 times. 0.5 ms duration time.	Frequency and E.S.R changes are in accordance with the customer's specifications.	Accept
6	Vibration	20G, 10~2000Hz, 1.52mm, Sweep 20 Min,Perpendicular axes each test time 4Hrs,Total : 12Hrs.	Frequency and E.S.R changes are in accordance with the customer's specifications.	Accept
7	Solderability	Temperature : 245°C±5°C , 5±1 Sec. Immersing depth : 0.5 mm minimum ; Flux : Rosin resin methyl alcohol , solvent (1 : 4).	Check by Magnification 50 X At Least 95% Covered.	Accept
8	Resistance To Soldering Heat	Pre-heat temperature:125°C; Pre-heat time : 60 ~ 120 sec. Test temperature : 260 ± 5 °C;Test time : 10 ± 1 sec.	Frequency and E.S.R changes are in accordance with the customer's specifications.	Accept
9	High Temp. Storage	+125 °C ± 3 °C for 500 ± 12 Hrs.	Frequency and E.S.R changes are in accordance with the customer's specifications.	Accept
10	Low Temp. Storage	- 40 °C ± 3 °C for 500 ± 12 Hrs.	Frequency and E.S.R changes are in accordance with the customer's specifications.	Accept
11	Temperature cycle	Total 100 cycles, -40±3°C to 125°±3°C ,20min dwell time .	Frequency and E.S.R changes are in accordance with the customer's specifications.	Accept
12	High Temp.&Humidity	85°C ± 3°C , RH 85% , 500 Hrs.	Frequency and E.S.R changes are in accordance with the customer's specifications.	Accept

2 · Quality evaluation result

<No.1 Dimensions test>

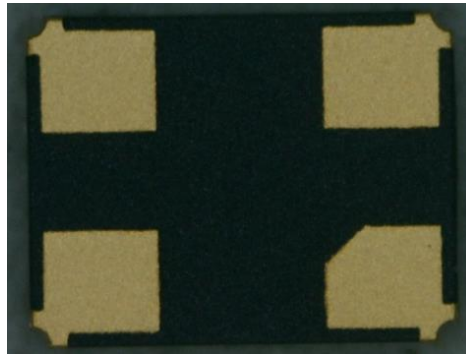
SPEC : Specification For Approved.

Method : Measurement DS-1,SZ7 Microscope.

Criteria : No significant difference in dimensions.

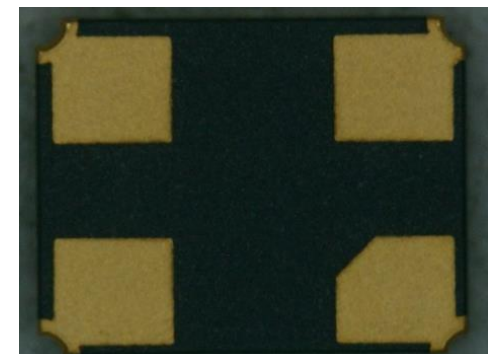
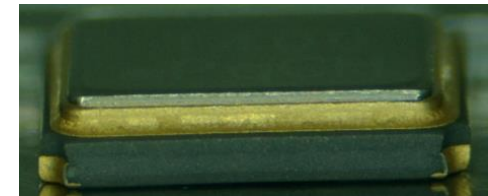
Sample Size	Judgement
10	Accept

項目	C CORP.		
	L	W	H
Spc. (mm)	3.2±0.1	2.5±0.1	0.7±0.1
1	3.198	2.489	0.662
2	3.181	2.496	0.665
3	3.183	2.486	0.656
4	3.182	2.472	0.664
5	3.181	2.48	0.661
6	3.18	2.468	0.662
7	3.203	2.486	0.652
8	3.184	2.483	0.657
9	3.186	2.479	0.654
10	3.178	2.487	0.654
MAX	3.203	2.496	0.665
MIN	3.178	2.468	0.652
AVG	3.186	2.483	0.659
STD	0.0082	0.0082	0.0046



C CORP.

IN	K CORP.		
	L	W	H
Spc. (mm)	3.2±0.1	2.5±0.1	0.7±0.1
1	3.174	2.481	0.641
2	3.172	2.483	0.649
3	3.176	2.479	0.651
4	3.174	2.481	0.659
5	3.17	2.482	0.653
6	3.173	2.479	0.648
7	3.176	2.479	0.642
8	3.181	2.483	0.653
9	3.174	2.479	0.653
10	3.175	2.478	0.649
MAX	3.181	2.483	0.659
MIN	3.17	2.478	0.641
AVG	3.175	2.480	0.650
STD	0.0029	0.0018	0.0054



K CORP.

Judgement : We confirmed no significant difference of major dimensions on package.

2 · Quality evaluation result

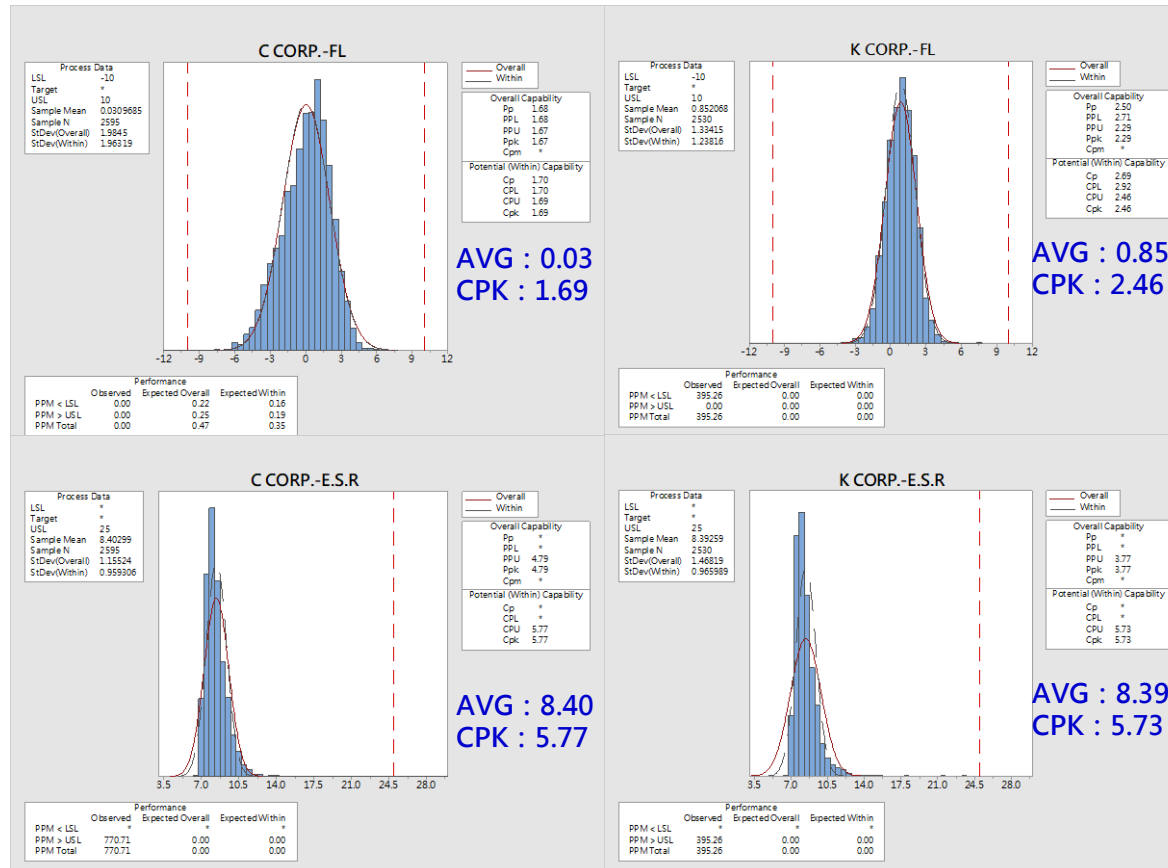
<No.2 Electrical characteristics>

SPEC : Specification For Approved.

Method : Final Electrical characteristics test.

Criteria : No significant difference in dimensions.

Sample Size	Judgement
2K ~ 3Kpcs	Accept



Judgement : We confirmed no significant difference in Yield. The CPK capacity is greater than 1.67.

2 · Quality evaluation result

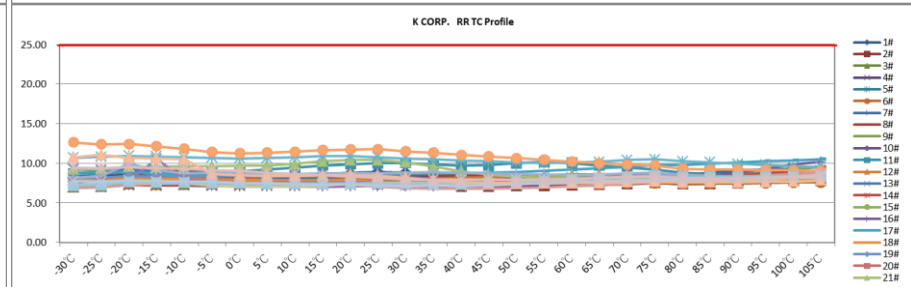
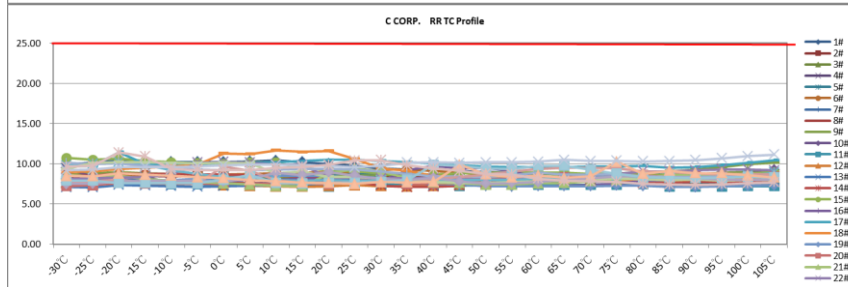
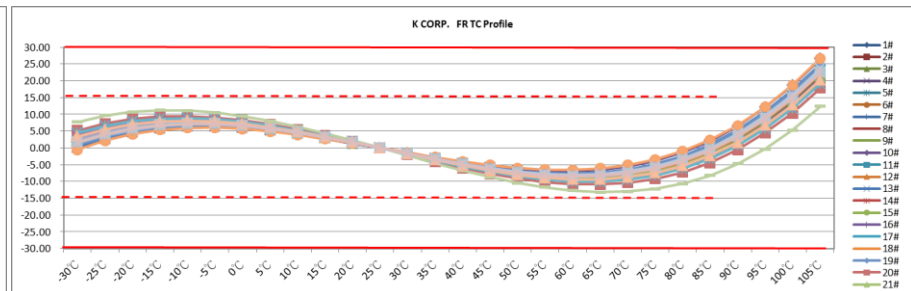
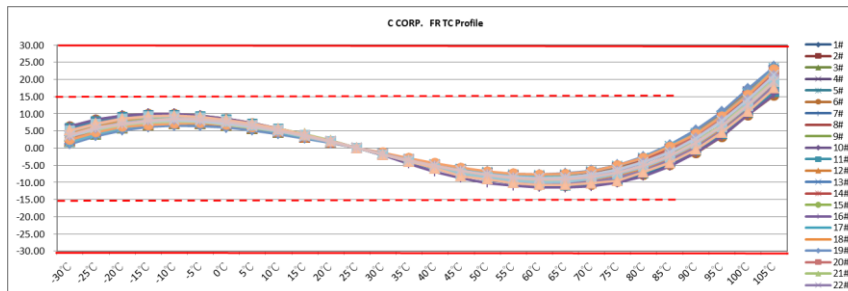
<No.3 Temperature characteristics test>

SPEC : Specification For Approved .

Method : Temperature: -30 ~ 105°C.

Criteria : No significant difference in dimensions.

Sample Size	Judgement
32pcs	Accept



Judgement : We confirmed no significant difference in temperature characteristics.

※ The results show that there is no significant difference between C CORP. and K CORP. The new packaging source for our 3225 crystal products can meet the application requirements.

Think of Frequency · Think of TXC

