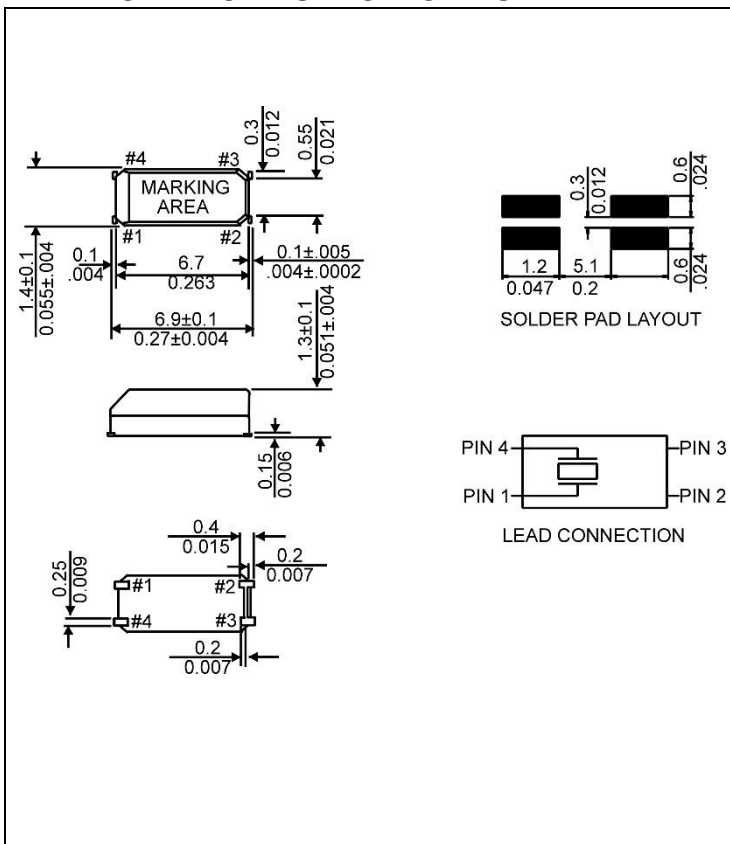


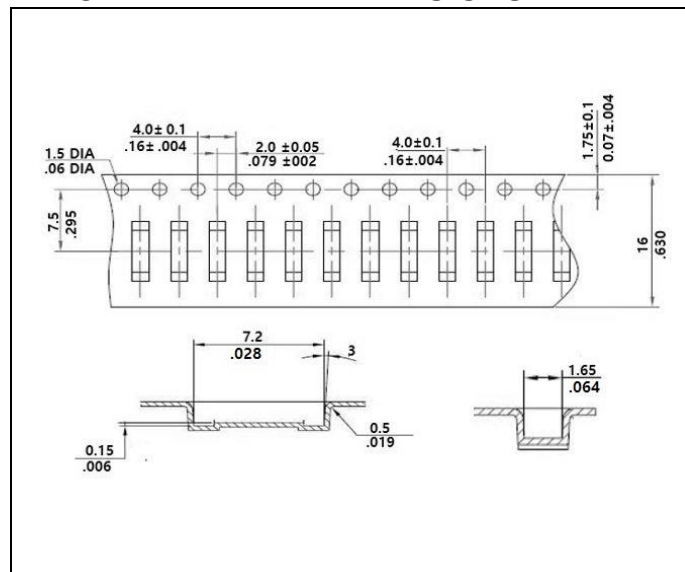
● SPECIFICATIONS

PARAMETER	VALUE
NOMINAL FREQUENCY	32.768 KHz
VIBRATION MODE	BT Cut
FREQUENCY TOLERANCE AT 25°C	±20 ppm max
TEMPERATURE COEFFICIENT	-0.035 ±0.008 ppm/°C ²
TURNOVER TEMPERATURE	25°C ±5°C
OPERATING TEMPERATURE RANGE	-40°C to +85°C
STORAGE TEMPERATURE RANGE	-40°C to +125°C
AGING	±3 ppm per year max
LOAD CAPACITANCE	12.5 pF
EQUIVALENT SERIES RESISTANCE	65 kΩ max
SHUNT CAPACITANCE	1.5 pF max
MOTIONAL CAPACITANCE	1.9 ~ 2.3 fF
DRIVE LEVEL	1.0 μW max
QUALITY FACTOR	50,000 min
INSULATION RESISTANCE	500 MΩ min @ DC 100V

● MECHANICAL SPECIFICATION



● CARRIER TAPE DIMENSIONS



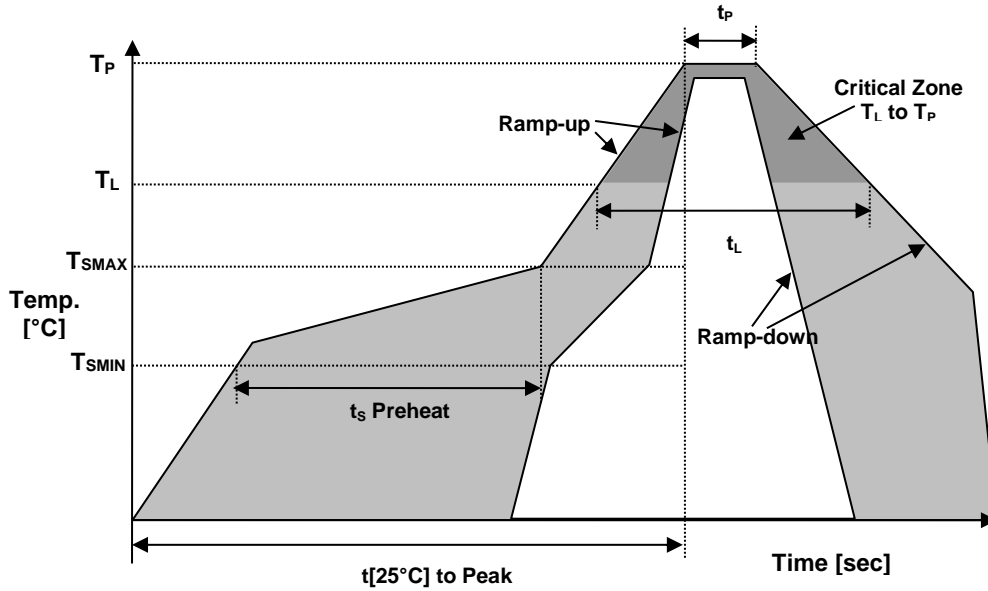
NOTE: REFER TO EIA-481 FOR DIMENSIONS

● PACKAGING

180 mm REEL DIAMETER
 16 mm TAPE WIDTH, 4 mm PITCH
 QUANTITY: 3000 PIECES PER REEL

IN ACCORDANCE WITH EIA-481

● REFLOW PROFILE



Reflow profile		
Temperature Min Preheat	T_{SMIN}	150°C
Temperature Max Preheat	T_{SMAX}	200°C
Time (T_{SMIN} to T_{SMAX})	t_s	60-180 sec.
Temperature	T_L	217°C
Peak Temperature	T_P	260°C
Ramp-up rate	R_{UP}	3°C/sec max.
Ramp-down rate	R_{DOWN}	6°C/sec max.
Time within 5°C of Peak Temperature	t_p	10 sec.
Time t[25°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t_L	60-150 sec.

● ENVIRONMENTAL

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
RoHS	Compliant
REACH SVHC	Compliant
HALOGEN-FREE	Compliant
ESD CLASSIFICATION LEVEL	N/A
TERMINATION FINISH	Au



● MARKINGS

- 1) 32.768
- 2) x3FmyR

x – Internal Production ID code
m – Month code
y – Year code

MONTH CODE	
MONTH	CODE
JANUARY	A
FEBRUARY	B
MARCH	C
APRIL	D
MAY	E
JUNE	F
JULY	G
AUGUST	H
SEPTEMBER	J
OCTOBER	K
NOVEMBER	L
DECEMBER	M

YEAR CODE	
Year	Code
2019	9
2020	0
2021	1
2022	2
2023	3
2024	4
2025	5
2026	6
2027	7
2029	8
2029	9

- 3) XXym

XX – PID
m – Month code
y – Year code

MONTH CODE	
MONTH	CODE
JANUARY	A
FEBRUARY	B
MARCH	C
APRIL	D
MAY	E
JUNE	F
JULY	G
AUGUST	H
SEPTEMBER	J
OCTOBER	K
NOVEMBER	L
DECEMBER	M

RSE-32.768-12.5-H14-TR

YEAR CODE	
Year	Code
2021	A or M
2022	B or N
2023	C or R
2024	D or S
2025	E or T
2026	F or U
2027	G or V
2028	H or W
2029	J or X
2030	K or Z

● APPROVAL

DRAWN BY	K. Jackson, June 19, 2016
APPROVED BY	J. Ivens, June 19, 2016
REVISION	A, Initial Release B, Updated to current spec levels, KJ, 3/7/17 C, Updated to current spec levels, JH 11/27/19 D, Remove marking, AG 6/19/20 E, Updated carrier tape dimensions & marking to current spec levels by XLiu, March 11, 2021 F, Added insulation resistance by XLiu, December 17, 2021 H, Updated to current spec levels by XLiu, April 21, 2022 I, Updated marking rule to current spec levels by XLiu, October 17, 2022

Raltron Electronics / RAMI Technology USA, LLC, including its affiliates, employees, agents and other persons acting on its behalf (collectively Raltron/RAMI Tech), disclaim any and all liability for any errors or inaccuracies contained in this data sheet. While Raltron/RAMI Tech has made every reasonable effort ensure the accuracy of all product information, specifications and data contained herein, Raltron/RAMI Tech does not guarantee that the information is accurate, reliable or current. The product information is provided only for reference purposes only and is subject to change, correction or revision, at any time without notice. Raltron/RAMI Tech does not assume any liability arising out of an application or use of any product described herein and disclaims any warranties expressed or implied. The user of products in such applications shall assume all risks of such use and will agree to hold Raltron/RAMI Tech, harmless against all damages.

Copyright © 2016, Raltron Electronics / RAMI Technology USA, LLC. All rights reserved. No part of this document may be reproduced in any form without the prior written permission of Raltron Electronics / RAMI Technology USA, LLC.

可靠度实验报告

RELIABILITY TEST REPORT

TYPE	RSE-H14
Frequency	32.768kHz
DATE	2020/12/26
FL tolerance	±20ppm
CL	12.5 pF
ESR	70k ohms

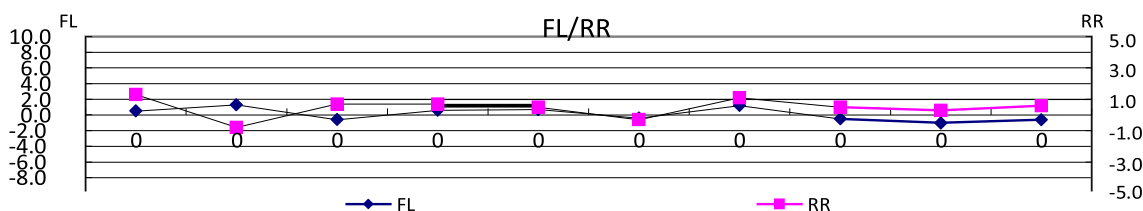
可靠度实验室
Reliability Laboratory

RAMI TECHNOLOGY USA

试验项目 Test Item	振动试验 Vibration	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/9/16
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/9/16
实验设备 EQUIPMENT	三向变频电磁振动试验机、S&A 250B网络分析仪 Three-phase electromagnetic vibration test bench S&A 250B test system.						
实验方法 Test Method	振动频率: 10Hz~55Hz; 振幅: 1.5mm; 振动方向: X.Y.Z; 周期: 1-2分钟 (10-55-10Hz); 振动时间: 每个方向2小时, 共6小时。 Frequency Range: 10Hz~55Hz; Amplitude: 1.5mm ; vibration direction: X.Y.Z Cycle Time 1-2min (10-55-10Hz) ; 2Hours in each direction, total 6Hours;						
判定标准 Accept level	n=10pcs、Ac=0、Re=1、 $\Delta F < 10 \text{ ppm}$ 、 $\Delta RR < 5 \text{ K}\Omega$						

试验数据 Test Data

NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (K Ω)	FL	RR (K Ω)	ΔFL	ΔRR (K Ω)		
1	-3.7	39.6	-3.2	40.9	0.5	1.3	PASS	
2	-2.5	44.3	-1.2	43.5	1.3	-0.8	PASS	
3	-7.8	39.6	-8.4	40.3	-0.6	0.7	PASS	
4	1.2	35.4	1.8	36.1	0.6	0.7	PASS	
5	3.5	34.1	4.2	34.6	0.7	0.5	PASS	
6	-4.8	34.8	-5.2	34.5	-0.4	-0.3	PASS	
7	-6.3	32.1	-5.1	33.2	1.2	1.1	PASS	
8	1.2	35.5	0.7	36.0	-0.5	0.5	PASS	
9	3.7	37.4	2.7	37.7	-1.0	0.3	PASS	
10	0.8	34.5	0.2	35.1	-0.6	0.6	PASS	
MAX	3.7	44.3	4.2	43.5	1.3	1.3	MIL-STD-202 F-201A, Method 204D, Test condition D	
MIN	-7.8	32.1	-8.4	33.2	-1.0	-0.8		
AVE	-1.5	36.7	-1.4	37.2	0.1	0.5		
STD	4.1	3.6	4.0	3.3	0.8	0.6		



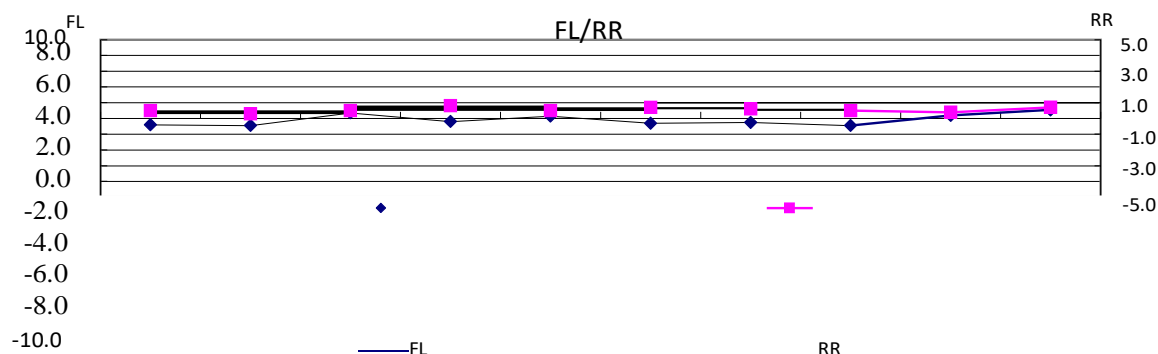
RESULT	PASS	APPROVA L	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	--------------	------	-------	----	---------	---------

RAMI TECHNOLOGY USA

试验项目 Test Item	跌落试验 Drop Test	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/9/15
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/9/15
实验设备 EQUIPMENT	BF-LD-TF震动台、CIM200和TTC-5组成的测试系统或 S&A 250B测试仪。 BF-LD-TFvibration test bench、CIM200 & TTC-5Composed of test systems、 S&A 250B test system.						
实验方法 Test Method	从75cm高的跌落台自由跌落3次到3cm厚的硬木板上，静置30分钟后，测其频率相对变化值。3 Times Free Fall from 75cm height table to 3cm thickness hard wood board, After 30 minutes, the relative change value of frequency was measured.						
判定标准 Accept level	n=10pcs、Ac=0、Re=1、 $\Delta F < 10$ ppm、 $\Delta RR < 5$ K Ω						

试验数据 Test Data

NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (K Ω)	FL	RR (K Ω)	ΔFL	ΔRR (K Ω)		
1	4.5	36.2	3.7	36.7	-0.8	0.5	PASS	MIL-STD-202 F-203B
2	2.1	38.1	1.2	38.4	-0.9	0.3	PASS	
3	-3.5	36.2	-2.8	36.7	0.7	0.5	PASS	
4	4.1	34.5	3.7	35.3	-0.4	0.8	PASS	
5	2.5	38.2	2.8	38.7	0.3	0.5	PASS	
6	-1.5	35.1	-2.1	35.8	-0.6	0.7	PASS	
7	-3.7	33.6	-4.2	34.2	-0.5	0.6	PASS	
8	-1.2	36.2	-2.1	36.7	-0.9	0.5	PASS	
9	0.9	39.7	1.3	40.1	0.4	0.4	PASS	
10	-3.8	34.5	-2.7	35.2	1.1	0.7	PASS	
MAX	4.5	39.7	3.7	40.1	1.1	0.8		
MIN	-3.8	33.6	-4.2	34.2	-0.9	0.3		
AVE	0.0	36.2	-0.1	36.8	-0.2	0.5		
STD	3.2	1.9	3.0	1.8	0.7	0.2		



RESULT	PASS	APPROVA	John	CHECK	YG	PREPARE	Mr.Zhou
		L					

RAMI TECHNOLOGY USA

试验项目 Test Item	可焊性 Solderability	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/9/22
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	20 PCS	结束日期 Finished Time	2020/9/22
实验设备 EQUIPMENT	JF-107A微电脑融锡炉、焊锡、助焊剂 JF-107AMicrocomputer tin melting furnace、Solder、Flux.						
实验方法 Test Method	将引线浸入完全熔化的焊锡炉内3-5s, 焊锡温度260℃±5℃ Dip in flux 3~5 seconds;Temperature: 260°C±5°C						
判定标准 Accept level	n=20pcs、Ac=0、Re=1 焊锡附着良好, 锡附着95%以上						
试验数据 Test Data							
NO.	沾锡量					RESULT	REMARK
1	沾锡量 95% 以上					PASS	
2	沾锡量 95% 以上					PASS	
3	沾锡量 95% 以上					PASS	
4	沾锡量 95% 以上					PASS	
5	沾锡量 95% 以上					PASS	
6	沾锡量 95% 以上					PASS	
7	沾锡量 95% 以上					PASS	
8	沾锡量 95% 以上					PASS	
9	沾锡量 95% 以上					PASS	
10	沾锡量 95% 以上					PASS	
11	沾锡量 95% 以上					PASS	
12	沾锡量 95% 以上					PASS	
13	沾锡量 95% 以上					PASS	
14	沾锡量 95% 以上					PASS	
15	沾锡量 95% 以上					PASS	
16	沾锡量 95% 以上					PASS	
17	沾锡量 95% 以上					PASS	
18	沾锡量 95% 以上					PASS	
19	沾锡量 95% 以上					PASS	
20	沾锡量 95% 以上					PASS	
MIL-STD-883 E 方法2003							

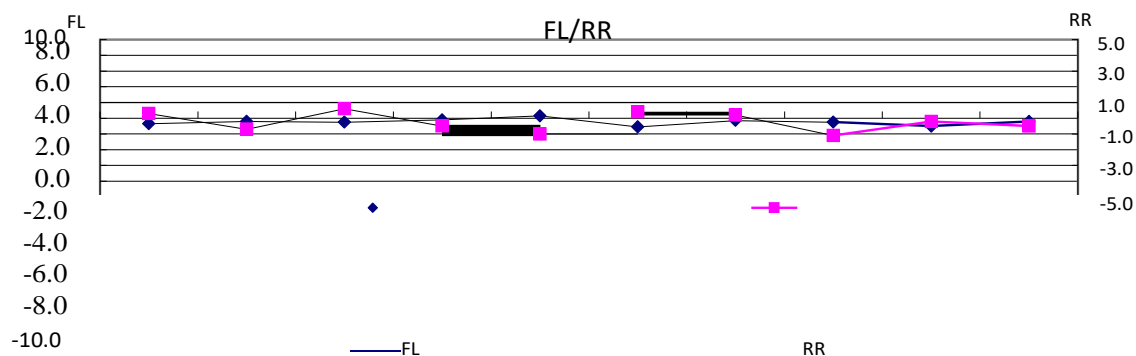
RESULT	PASS	APPROVAL	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	----------	------	-------	----	---------	---------

RAMI TECHNOLOGY USA

试验项目 Test Item	高温储存 High Temp.storage	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/9/18
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/9/21
实验设备 EQUIPMENT	BTH-80C可程式恒温恒湿试验箱、S&A 250B网络分析仪 BTH-80C Humidity Chamber、S&A 250B test system						
实验方法 Test Method	晶体放置于125°C±5°C环境中72小时后,常温静置1~2小时后测其频率相对变化量 Temperature: 125°C ±5°C for 72 H, and the relative change in frequency was measured after 1 ~ 2 hours at room temperature						
判定标准 Accept level	n=10pcs、Ac=0、Re=1、ΔF < 10 ppm、ΔRR < 5 KΩ						

试验数据 Test Data

NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (KΩ)	FL	RR (KΩ)	ΔFL	ΔRR (KΩ)		
1	-5.6	41.9	-6.3	42.2	-0.7	0.3	PASS	
2	-4.8	39.3	-5.2	38.6	-0.4	-0.7	PASS	
3	-1.3	38.6	-1.8	39.2	-0.5	0.6	PASS	
4	1.4	44.0	1.2	43.5	-0.2	-0.5	PASS	
5	3.2	38.4	3.5	37.4	0.3	-1.0	PASS	
6	7.8	41.2	6.7	41.6	-1.1	0.4	PASS	
7	-10.5	43.6	-10.8	43.8	-0.3	0.2	PASS	
8	-9.7	42.8	-10.2	41.7	-0.5	-1.1	PASS	
9	5.3	40.7	4.3	40.5	-1.0	-0.2	PASS	
10	-2.4	44.6	-2.8	44.1	-0.4	-0.5	PASS	
MAX	7.8	44.6	6.7	44.1	0.3	0.6	MIL-STD-883 E-1016	
MIN	-10.5	38.4	-10.8	37.4	-1.1	-1.1		
AVE	-1.7	41.5	-2.1	41.3	-0.5	-0.2		
STD	6.1	2.3	6.1	2.3	0.4	0.6		



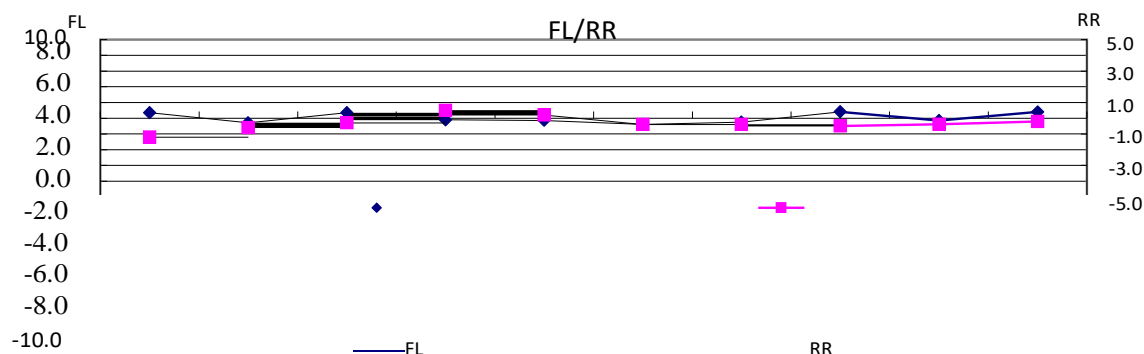
RESULT	PASS	APPROVA L	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	--------------	------	-------	----	---------	---------

RAMI TECHNOLOGY USA

试验项目 Test Item	低温储存 Low Temp.storage	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/9/26
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/9/29
实验设备 EQUIPMENT	BST-50B冷热冲击试验箱、CIM200和TTC-5组成的测试系统、S&A 250B测试仪。 BST-50B Cold thermal shock experiment box、CIM200 & TTC-5 Composed of test systems、S&A 250B test system						
实验方法 Test Method	晶体放置于-45°C±5°C环境中72 H小时后,常温静置1~2小时后测其频率相对变化量 Temperature: -45°C±5°C for 72 H, and the relative change in frequency was measured after 1 ~ 2 hours at room temperature						
判定标准 Accept level	n=10pcs、Ac=0、Re=1、ΔF < 10 ppm、ΔRR < 5 KΩ						

试验数据 Test Data

NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (KΩ)	FL	RR (KΩ)	ΔFL	ΔRR (KΩ)		
1	-11.2	42.7	-10.5	41.5	0.7	-1.2	PASS	
2	-7.8	38.4	-8.4	37.8	-0.6	-0.6	PASS	
3	3.1	37.4	3.8	37.1	0.7	-0.3	PASS	
4	4.5	42.1	4.3	42.6	-0.2	0.5	PASS	
5	-3.5	36.1	-3.8	36.3	-0.3	0.2	PASS	
6	-2.8	35.8	-3.6	35.4	-0.8	-0.4	PASS	
7	-4.1	37.6	-4.6	37.2	-0.5	-0.4	PASS	
8	2.7	41.8	3.5	41.3	0.8	-0.5	PASS	
9	1.6	39.1	1.3	38.7	-0.3	-0.4	PASS	
10	1.3	40.3	2.1	40.1	0.8	-0.2	PASS	
MAX	4.5	42.7	4.3	42.6	0.8	0.5	MIL-STD-883 C-1008.2B TJR-2-06-505	
MIN	-11.2	35.8	-10.5	35.4	-0.8	-1.2		
AVE	-1.6	39.1	-1.6	38.8	0.0	-0.3		
STD	5.1	2.5	5.3	2.4	0.6	0.5		



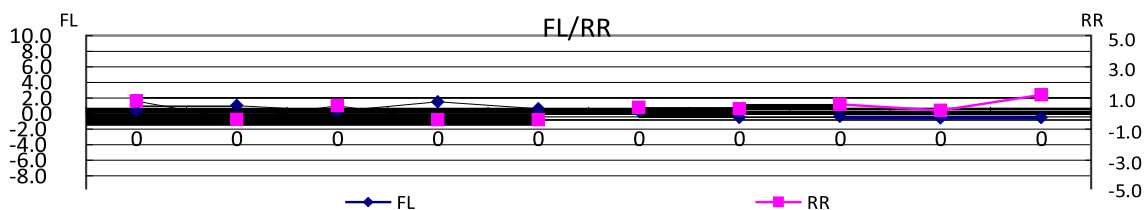
RESULT	PASS	APPROVA L	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	--------------	------	-------	----	---------	---------

RAMI TECHNOLOGY USA

试验项目 Test Item	恒温恒湿 Humidity Storage	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/10/8
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/10/11
实验设备 Equipment	BTH-80C可程式恒温恒湿试验箱; CIM200和TTC-5组成的测试系统、S&A 250B网络分析仪 BTH-80C Humidity Chamber 、CIM200 & TTC-5 Composed of test systems 、S&A 250B test system						
实验方法 Test Method	晶体放置于80°C±5°C、相对湿度90-95%的环境中72小时后，测其频率相对变化量 Temperature: 80°C±5°C , Relative Humidity:90-95% for 72 hours, and then the relative change in frequency was measured						
判定标准 Accept level	n=10pcs、Ac=0、Re=1、ΔF < 10 ppm、ΔRR < 5 KΩ						

试验数据 Test Data

NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (KΩ)	FL	RR (KΩ)	ΔFL	ΔRR (KΩ)		
1	4.8	36.4	5.1	37.2	0.3	0.8	PASS	
2	2.4	40.5	3.4	40.1	1.0	-0.4	PASS	
3	-1.5	31.8	-1.2	32.3	0.3	0.5	PASS	
4	-7.9	36.6	-6.4	36.2	1.5	-0.4	PASS	
5	5.3	33.9	5.9	33.5	0.6	-0.4	PASS	
6	2.4	35.4	2.7	35.8	0.3	0.4	PASS	
7	-1.8	33.1	-2.3	33.4	-0.5	0.3	PASS	
8	-3.8	34.5	-4.2	35.1	-0.4	0.6	PASS	
9	-4.1	41.3	-4.7	41.5	-0.6	0.2	PASS	
10	8.4	38.0	7.9	39.2	-0.5	1.2	PASS	
MAX	8.4	41.3	7.9	41.5	1.5	1.2	MIL-STD-202 F-103B 方法 D	
MIN	-7.9	31.8	-6.4	32.3	-0.6	-0.4		
AVE	0.4	36.1	0.6	36.4	0.2	0.3		
STD	5.1	3.1	5.0	3.1	0.7	0.5		



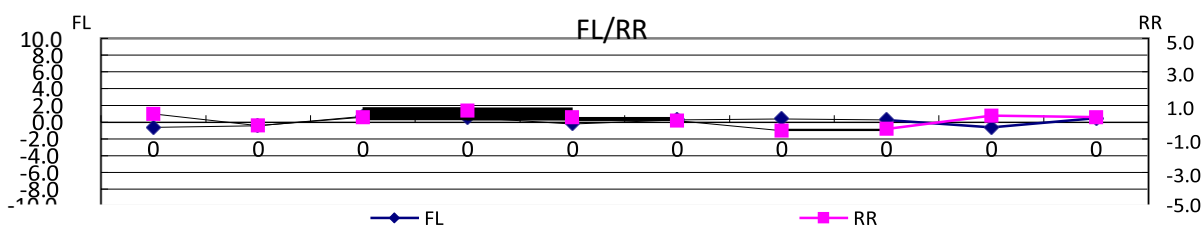
RESULT	PASS	APPROVA L	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	--------------	------	-------	----	---------	---------

RAMI TECHNOLOGY USA

试验项目 Test Item	温度循环 Temp. cycle	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/10/17
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/10/17
实验设备 EQUIPMENT	BTS-50B冷热冲击试验箱、S&A 250B网络分析仪 Cold thermal shock experiment box、S&A 250B test system						
实验方法 Test Method	温度从-55℃±5℃(保持30分钟)升高到125℃±5℃(保持30分钟),再降-55℃±5℃(保持30分钟),完成一个循环;共计5个循环,常温静置1~2小时后测其频率相对变化量 Temperature 1:-55℃±5℃, Temperature 2:125℃±5℃, Temperature change between from T1 to T2 to T1 ,Run 5 cycles,maintain T1 and T2 30minutes each in one cycle. and the relative change in frequency was measured after 1 ~ 2 hours at room temperature						
判定标准 Accept level	n=10pcs、Ac=0、Re=1、ΔF < 10 ppm、ΔRR < 5 KΩ						

试验数据 Test Data

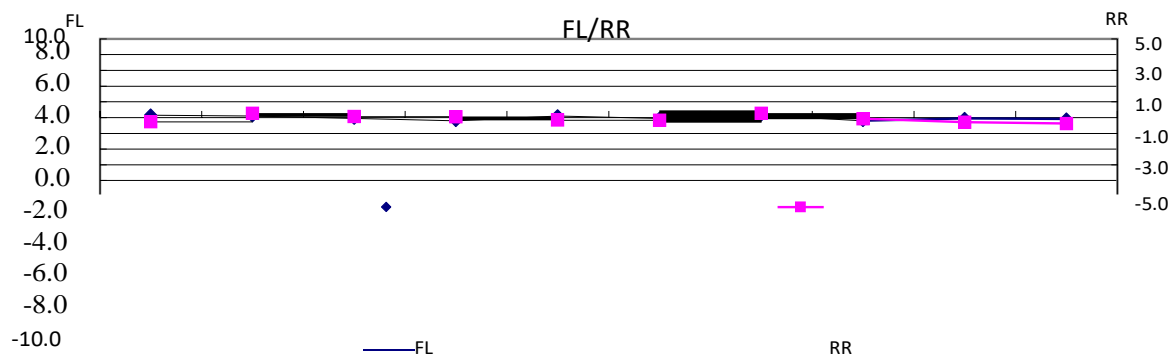
NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (KΩ)	FL	RR (KΩ)	ΔFL	ΔRR (KΩ)		
1	-4.8	38.4	-5.4	38.9	-0.6	0.5	PASS	
2	-3.2	33.7	-3.6	33.5	-0.4	-0.2	PASS	
3	-5.5	38.1	-4.8	38.4	0.7	0.3	PASS	
4	4.2	41.4	4.8	42.1	0.6	0.7	PASS	
5	1.7	40.5	1.5	40.8	-0.2	0.3	PASS	
6	2.5	38.3	2.8	38.4	0.3	0.1	PASS	
7	-3.8	35.8	-3.4	35.3	0.4	-0.5	PASS	
8	4.2	39.8	4.5	39.4	0.3	-0.4	PASS	
9	-7.6	40.3	-8.2	40.7	-0.6	0.4	PASS	
10	-2.8	43.6	-2.3	43.9	0.5	0.3	PASS	
MAX	4.2	43.6	4.8	43.9	0.7	0.7	MIL-STD-883 E-1011.9B	
MIN	-7.6	33.7	-8.2	33.5	-0.6	-0.5		
AVE	-1.5	39.0	-1.4	39.1	0.1	0.2		
STD	4.3	2.8	4.5	3.1	0.5	0.4		



RESULT	PASS	APPROVAL	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	----------	------	-------	----	---------	---------

RAMI TECHNOLOGY USA

试验项目 Test Item	盐雾实验 Salt Fog Test	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/10/9	
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/10/13	
实验设备 EQUIPMENT	BE-CS-60盐水喷雾试验机、S&A 250B网络分析仪							
实验方法 Test Method	将晶体置于盐雾浓度为5%，温度35℃的盐雾室中96小时，用水洗净擦干表面。 Put the crystal units in the salt spray room(salt density:5%)at the temperature of 35°C for 96 hours.Then clean it with water and dry its surface.							
判定标准 Accept level	n=10pcs、Ac=0、Re=1、 $\Delta F < 10$ ppm、 $\Delta RR < 5$ K Ω 外观良好，可焊性良好。 The appearance shall has no abnormality and soldering is good.							
试验数据 Test Data								
NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (K Ω)	FL	RR (K Ω)	ΔFL	ΔRR (K Ω)		
1	2.8	36.0	3.1	35.7	0.3	-0.3	PASS	
2	4.3	31.8	4.5	32.1	0.2	0.3	PASS	
3	-3.1	38.1	-3.2	38.2	-0.1	0.1	PASS	
4	-1.4	36.3	-1.8	36.4	-0.4	0.1	PASS	
5	2.4	34.7	2.6	34.5	0.2	-0.2	PASS	
6	7.6	35.9	7.5	35.7	-0.1	-0.2	PASS	
7	2.6	38.2	2.9	38.5	0.3	0.3	PASS	
8	-4.2	31.2	-4.6	31.1	-0.4	-0.1	PASS	
9	-6.3	35.6	-6.4	35.3	-0.1	-0.3	PASS	
10	-1.8	39.0	-2.0	38.6	-0.2	-0.4	PASS	
MAX	7.6	39.0	7.5	38.6	0.3	0.3	MIL-STD-883E Method 1009.822	
MIN	-6.3	31.2	-6.4	31.1	-0.4	-0.4		
AVE	0.3	35.7	0.3	35.6	0.0	-0.1		
STD	4.3	2.6	4.5	2.6	0.3	0.2		



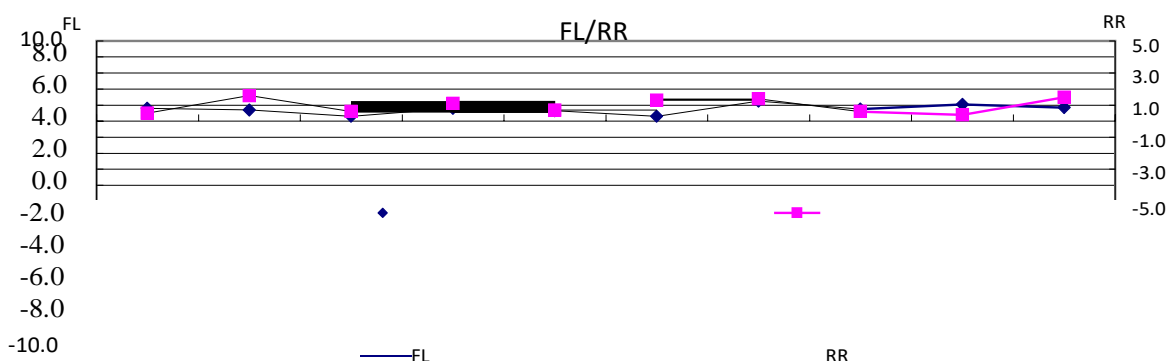
RESULT	PASS	APPROVA L	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	--------------	------	-------	----	---------	---------

RAMI TECHNOLOGY USA

试验项目 Test Item	回流焊 Reflow	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/10/23
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/10/23
实验设备 EQUIPMENT	GSD-M6N回流焊机、S&A 250B网络分析仪 GSD-M6NReflow equipment、S&A 250B test system						
实验方法 Test Method	预热 Preheating, 150°C~180°C:60s≤t≤120s; T≥183°C:90s≤t≤120s; T≥230°C:20s≤t≤40s; T=260°C±10°C: 5s≤t≤20s; T(max)=270°C						
判定标准 Accept level	n=10pcs、Ac=0、Re=1、ΔF < 10 ppm、ΔRR < 5 KΩ						

试验数据 Test Data

NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (KΩ)	FL	RR (KΩ)	ΔFL	ΔRR (KΩ)		
1	5.1	39.6	6.7	40.1	1.6	0.5	PASS	
2	-3.5	34.9	-2.1	36.5	1.4	1.6	PASS	
3	-1.8	36.8	-1.2	37.4	0.6	0.6	PASS	
4	0.8	33.1	2.4	34.2	1.6	1.1	PASS	
5	2.3	35.7	3.6	36.4	1.3	0.7	PASS	
6	4.5	32.5	5.1	33.8	0.6	1.3	PASS	
7	-6.7	34.0	-4.2	35.4	2.5	1.4	PASS	
8	-8.2	37.8	-6.7	38.4	1.5	0.6	PASS	
9	-4.2	33.2	-2.1	33.6	2.1	0.4	PASS	
10	3.6	32.4	5.3	33.9	1.7	1.5	PASS	
MAX	5.1	39.6	6.7	40.1	2.5	1.6	MIL-STD-202F 方法 210E	
MIN	-8.2	32.4	-6.7	33.6	0.6	0.4		
AVE	-0.8	35.0	0.7	36.0	1.5	1.0		
STD	4.8	2.4	4.5	2.2	0.6	0.5		



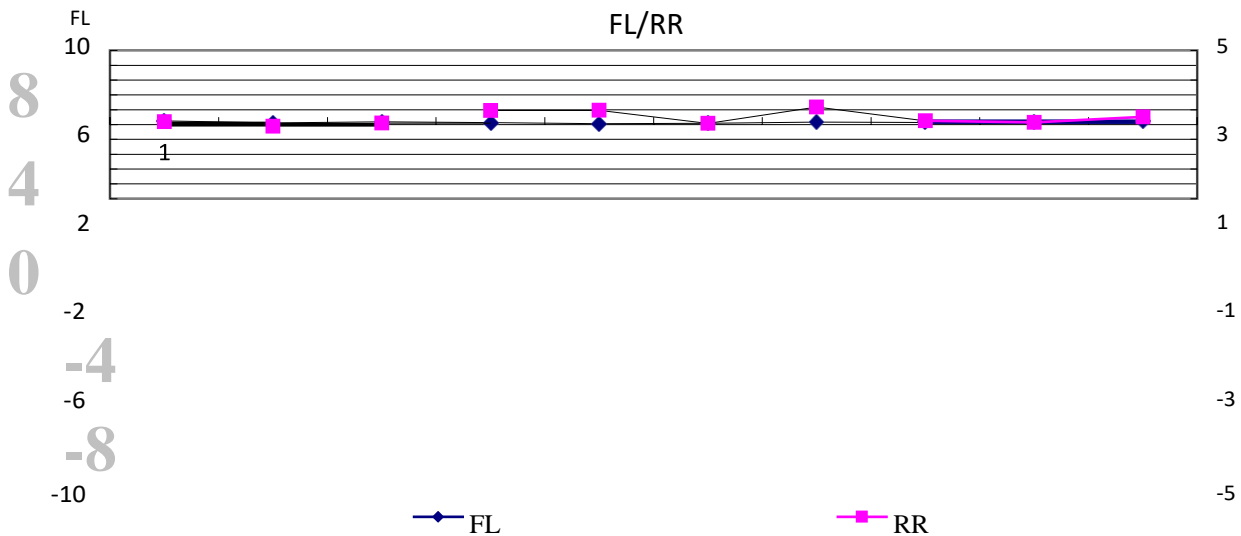
RESULT	PASS	APPROVA	John	CHECK	YG	PREPARE	Mr.Zhou
		L					

RAMI TECHNOLOGY USA LLC

试验项目 Test Item	老化试验 Aging	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/9/9
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/10/21
实验设备 EQUIPMENT	BTH-80C可程式恒温恒湿试验箱、CIM200和TTC-5组成的测试系统、S&A 250B测试仪 BTH-80C Humidity Chamber、CIM200 & TTC-5 Composed of test systems、S&A 250B test system						
实验方法 Test Method	晶体放置于85℃±5℃环境中1000H小时后,常温静置1~2小时后测其频率相对变化量 Temperature:85℃±5℃ for 1000H hours, then stood at room temperature for 1~2 hours, and the relative change in frequency was measured						
判定标准 Accept level	n=10pcs、Ac=0、Re=1、 $\Delta FL \leq \pm 10 \text{ ppm}$ 、 $\Delta RR \leq \pm 15\% RrMax$						

试验数据 Test Data

NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (Ω)	FL	RR (Ω)	ΔFL	ΔRR (Ω)		
1	8.1	49.6	8.7	50.1	0.6	0.5	PASS	
2	-5.5	34.9	-5.6	35.5	-0.1	0.6	PASS	
3	-1.8	36.8	-2.2	37.4	-0.4	0.6	PASS	
4	2.8	33.1	3.4	34.2	0.6	1.1	PASS	
5	3.3	45.7	3.6	46.1	0.3	0.4	PASS	
6	4.7	33.5	5.4	33.8	0.7	0.3	PASS	
7	-5.5	34.0	-4.9	34.2	0.6	0.2	PASS	
8	-5.2	47.8	-4.7	48.2	0.5	0.4	PASS	
9	-4.2	33.2	-3.6	33.5	0.6	0.3	PASS	
10	6.6	42.4	5.3	43.9	-1.3	1.5	PASS	
MAX	8.1	49.6	8.7	50.1	0.7	1.5		
MIN	-5.5	33.1	-5.6	33.5	-1.3	0.2		
AVE	0.3	39.1	0.5	39.7	0.2	0.6		
STD	5.3	6.6	5.3	6.6	0.6	0.4		



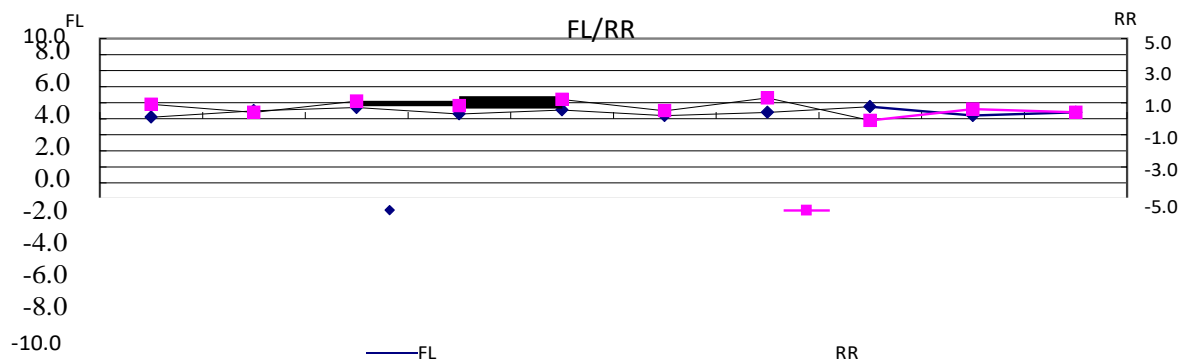
RESULT	PASS	APPROVA L	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	--------------	------	-------	----	---------	---------

RAMI TECHNOLOGY USA LLC

试验项目 Test Item	耐焊接热 Solder Heat Resistance	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/10/10
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	10 PCS	结束日期 Finished Date	2020/10/10
实验设备 EQUIPMENT	融锡炉、S&A 250B网络分析仪 Tin melting furnace、S&A 250B test system						
实验方法 Test Method	预热: 125°C 60~120秒, 焊接温度: 260°C ±10°C; 焊接时间: 5秒 Pre-heat: 125°C 60~120 Seconds; Solder Temperature: 260°C ±10°C; Time: 5 Seconds						
判定标准 Accept level	n=10pcs、Ac=0、Re=1、 $\Delta F < 10$ ppm、 $\Delta RR < 5$ K Ω						

试验数据 Test Data

NO.	BEFORE		AFTER		CHANGE		RESULT	REMARK
	FL	RR (K Ω)	FL	RR (K Ω)	ΔFL	ΔRR (K Ω)		
1	5.6	34.5	5.8	35.4	0.2	0.9	PASS	
2	-4.2	37.7	-3.2	38.1	1.0	0.4	PASS	
3	-3.8	35.6	-2.4	36.7	1.4	1.1	PASS	
4	1.2	32.8	1.8	33.6	0.6	0.8	PASS	
5	-4.6	32.2	-3.5	33.4	1.1	1.2	PASS	
6	3.5	38.6	3.9	39.1	0.4	0.5	PASS	
7	-1.5	41.0	-0.7	42.3	0.8	1.3	PASS	
8	0.6	36.6	2.1	36.5	1.5	-0.1	PASS	
9	5.3	35.1	5.7	35.7	0.4	0.6	PASS	
10	-2.1	32.7	-1.3	33.1	0.8	0.4	PASS	
MAX	5.6	41.0	5.8	42.3	1.5	1.3	MIL-STD-202F 方法 210E	
MIN	-4.6	32.2	-3.5	33.1	0.2	-0.1		
AVE	0.0	35.7	0.8	36.4	0.8	0.7		
STD	3.8	2.8	3.5	2.9	0.4	0.4		



RESULT	PASS	APPROVA L	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	--------------	------	-------	----	---------	---------

RAMI TECHNOLOGY USA LLC

试验项目 Test Item	绝缘性能 Insulation Resistanc e	规格 Type	RSE-H14	批号 Lot NO.	200908-01	开始日期 Begin Date	2020/10/23
料号 Part NO.	RSE-32.768-12.5-H14-TR			数量 Quantity	20 PCS	结束日期 Finished Date	2020/10/23
实验设备 EQUIPMENT	TH2681A型绝缘阻抗机 TH2681A Insulation Resistance machine						
实验方法 Test Method	DC/100V±15V						
判定标准 Accept level	n=20pcs、Ac=0、Re=1、绝缘阻抗Insulation Resistance \geq 500M Ω						
试验数据 Test Data							
NO.	绝缘阻抗 Insulation Impedance					RESULT	REMARK
1	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
2	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
3	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
4	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
5	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
6	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
7	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
8	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
9	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
10	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
11	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
12	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
13	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
14	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
15	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
16	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
17	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
18	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
19	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	
20	绝缘阻抗 Insulation Resistance \geq 500M Ω					PASS	

RESULT	PASS	APPROVA L	John	CHECK	YG	PREPARE	Mr.Zhou
--------	------	--------------	------	-------	----	---------	---------