SAC高可靠性焊料FR-209

SAC High Reliability Solder FR-209

SnAgCu Series High Reliability Solder

优势

Advantage

良好的高低温度循环冲击可靠性
Excellent thermal cycling reliability

良好的剪切强度
High shear strength

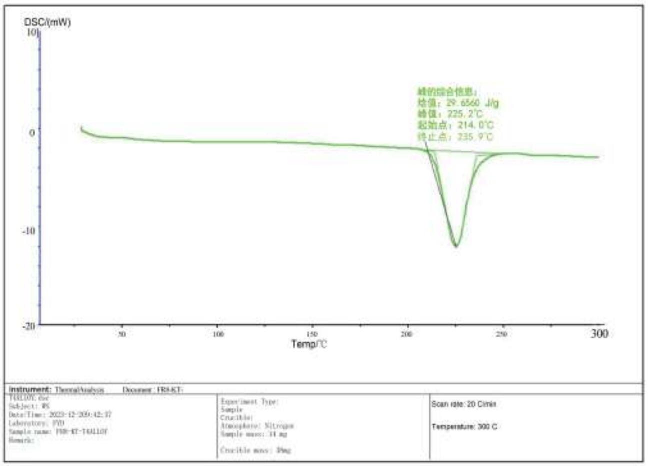
空洞率低
Low voiding rate

良好的润湿性能
Superior wetting performance

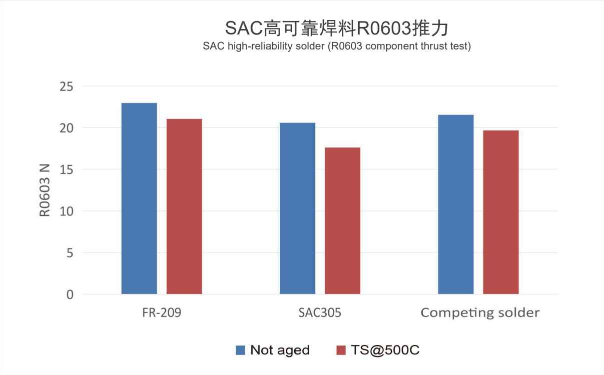
基 本 特 性 Basicfeatures

Excellent thermal cycling reliability

DSC



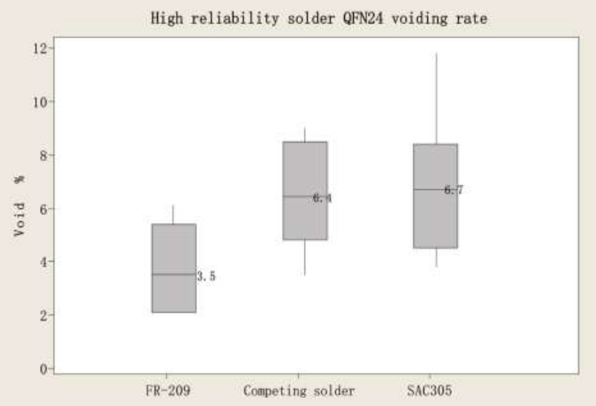
DSC 测试高可靠焊料熔点在214-225˚C与SAC305 熔点接近。
DSC test shows the melting point of the high-reliability solder is between 214-225° C, close to that of SAC305

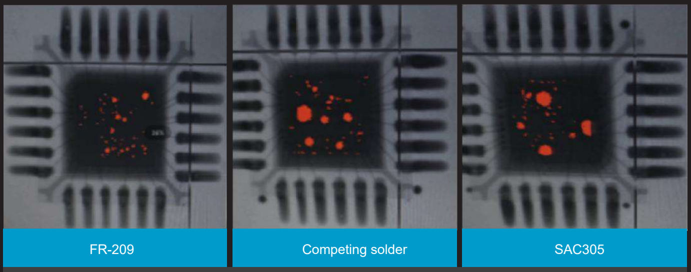


粘接推力

Bonding thrust strength

FR209 R0603
SAC305
The shear thrust of FR209 solder (R0603 resistor) is greater than that of SAC305, meeting the required welding strength.





焊点空洞

Solder joint voids

FR209空洞率<10%

FR209 voiding rate<10%

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FR-209 可靠性试验数据 FR-209 reliability testing data

焊料与焊盘OSP界面IMC数据

The IMC data of OSP interface between pad and solders

试验条件： Test condition：

-40~150

20min, 500,1000 R0603 SEM

Samples subjected to a thermal shock (-40°c+150°c,20min/cycle,500/1000 cycles), are sent for R0603 shear force test and SEM cross-section.

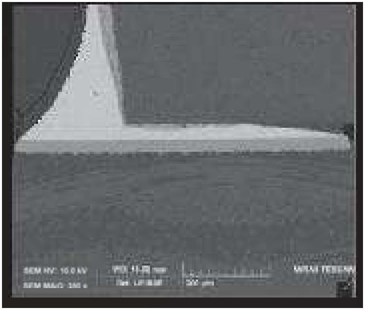
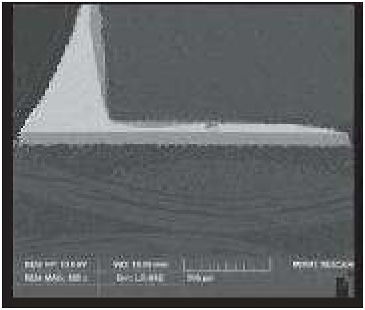
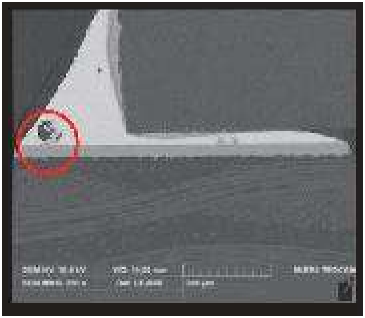
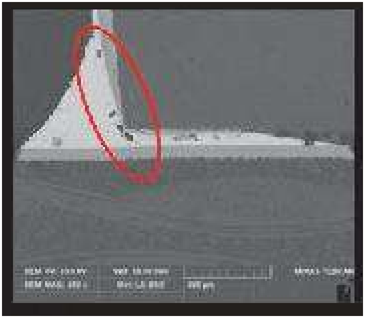
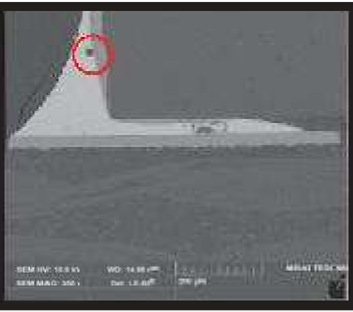
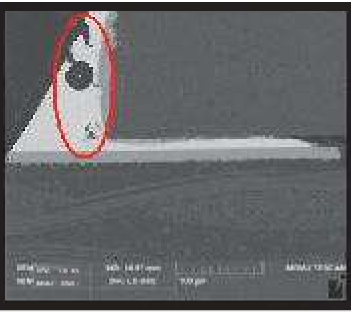
试验结果： Test Result：

TS@500 OSP FR209 IMC TS@500

IMC I SAC305

The Peak Shear Force of FR209 on the OSP interface is greater than that 500 cycles, the IMC growth rate is lower than that of Competing Solder #l and SAC305.

焊点微观形貌对比 Comparison of microscopic morphology of solder joints

Alloy Type	Reflow	TS@500C	Conclusion
FR-209 FR209 alloy			FR-209 合金焊料经过TS@500 次循环后，焊点正常，未出现裂纹。 No cracks after ＴＳ＠５００ cycles were found in the test of FR209 solder。
SAC305 SAC305 alloy			SAC305合金焊料经过TS@500次循环后，焊点内部出现裂纹，边缘开裂。 SAC 305 Solder: Internal cracks and edge fractures observed after TS@500 cycles。
1 Market solder #1			市场主流高可靠焊料1 经过TS@500次循环后，焊点出现开裂。 Crack observed after TS@500 cycles。

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