

产品规格书

PRODUCT SPECIFICATION

1. 特征 Features

①无铅免洗焊锡膏、无卤；

Lead-free no-clean solder paste、halogen-free；

②适应多种基材的焊接：在OSP、喷锡、ENIG上均有良好润湿；

Suitable for soldering on a variety of substrates: good wetting on OSP、tin spraying、ENIG；

③可靠性好、表面绝缘阻抗高；

Good reliability、high surface insulation resistance；

2. 焊料合金性能 Solder alloy properties

1) 焊料合金的物理特性 Physical properties of the solder alloy

合金成分 Alloy composition	合金粒径 Alloy particle size	测试标准 Test Standards
Sn96.5-Ag3.0-Cu0.5	Type3(25~45μm)	J-STD-006C
	Type4(20~38μm)	
	Type5(15~25μm)	
熔化温度 Melting temperature	217℃-221℃	ISO 8106
金属比重 Metal specific gravity	7.36g/cm ³	GB/T 2085
拉伸强度 Tensile strength	53.3Mpa(24℃)	GB/T 228-2002
	27.9 Mpa(105℃)	GB/T 228-2002

2) 焊料合金的化学成分 The chemical composition of the solder alloy (J-STD-006C)

合金Composition / 组成（mass%）									
Ag			Cu				Sn		
2.8~3.2			0.4~0.6				Balance / 剩余部分		
Impurities/不纯物									
Mass% or less/ 质量% 以下									
Cd	Pb	Al	As	Fe	Zn	In	Sb	Bi	Ni
0.002	0.07	0.005	0.03	0.02	0.003	0.10	0.20	0.10	0.01

3) 产品规格 Product Specifications

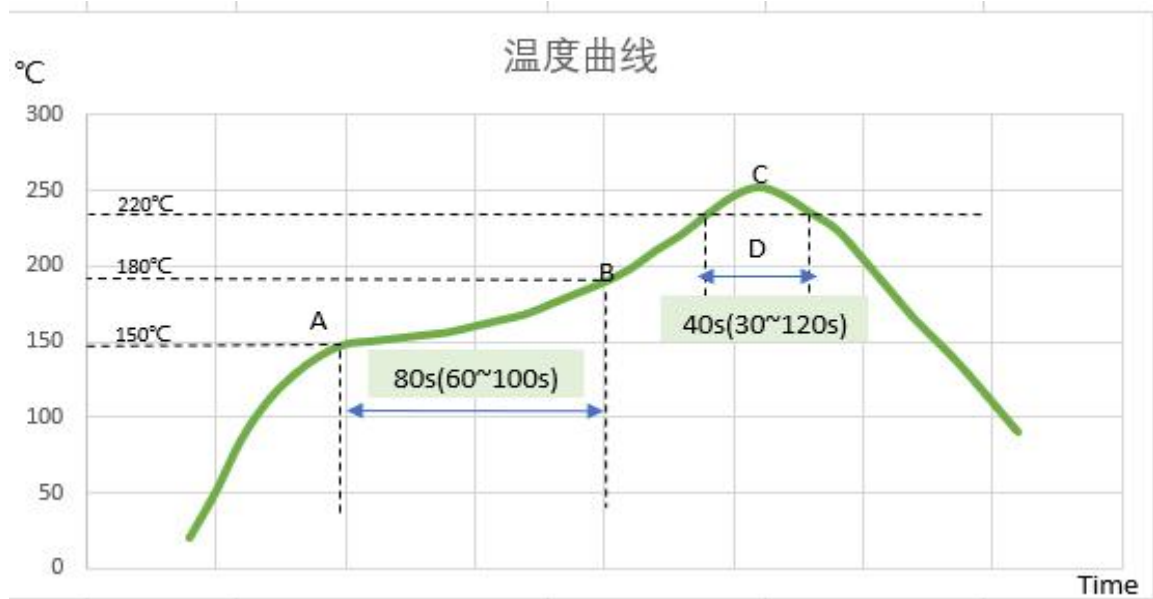
测试项目 Test item	结果 Result	测试标准 Standard reference/Notes
外观 Exterior	灰色膏状 Grey paste	目测
重量 Weight	500±5g	称重
粘度 Viscosity	170±30Pa·S或与客户商议	JIS-3284
助焊剂含量	11.5%±1%	JIS-3284
活性等级 Classification	ROL级	IPC J-STD-004B
卤素含量 Halogen content	Br≤900ppm Cl≤900ppm Br+Cl ≤1500ppm	EN 14582:2007
铜镜试验 Bronze mirror test	L级	IPC J-STD-004B
铜板腐蚀试验 Bronze board erode test	L级	IPC J-STD-004B
表面绝缘电阻 SIR (168H @40℃/90%RH)	PASS, >5.0E+11	IPC J-STD-004B
电迁移Electromigration	PASS, 无电子迁移	IPC J-STD-004B

3. 应用 Applications

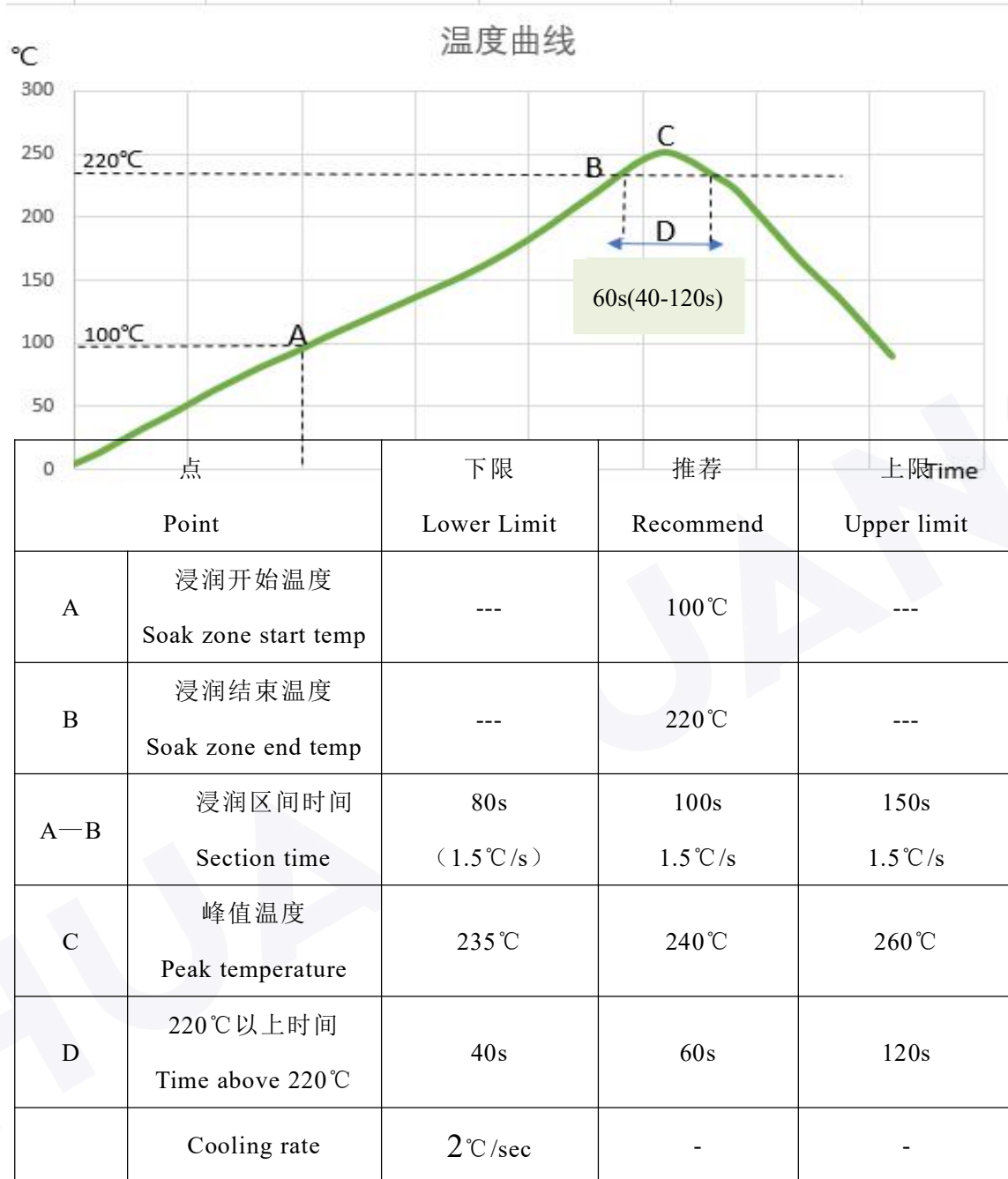
印刷及回流（推荐）Printing & Reflow (Recommended)

印刷速度 Printing speed	20-170mm/s
印刷压力 Printing pressure	0.015-0.029Kg/mm(以刮刀长度计算) 0.015-0.029Kg/mm (calculated based on the length of the scraper)
刮刀角度 Scraper angle	同钢网夹角为45° 至60° The angle between the same steel mesh is 45 ° to 60 °
脱模速度 Demoulding speed	0.5-25mm/s
擦拭频率 Frequency of wiping	不大于14片/次（QFP:0.5Pitch 焊盘0.25*1.3） Not more than 14 pieces per time (QFP: 0.5Pitch pad 0.25 * 1.3)
在网印刷时间 In the screen printing time	大于8小时（30%-60%RH, 22-28℃） More than 12 hours (30% -60% RH, 22-28 °C)
回流气氛 Reflux atmosphere	空气或氮气 Air or nitrogen

推荐的回流曲线 Recommended Reflow Profile



点 Point		下限 Lower Limit	推荐 Recommend	上限 Upper limit
室温 -A	升温速率 Ramp up rate1	1°C/sec	2°C/sec	4°C/sec
A	浸润开始温度 Soak zone start temp	140°C	150°C	160°C
B	浸润结束温度 Soak zone end temp	160°C	180°C	200°C
A—B	浸润区间时间 Section time	60s	80s	100s
B—C	坡道2 Ramp up rate2	1°C/sec	2°C/sec	4°C/sec
C	峰值温度 Peak temperature	235°C	240°C	260°C
D	220°C 以上时间 Time above 220°C	40s	60s	120s
	Cooling rate	2°C/sec	-	-



注：以上温度曲线为推荐工艺曲线，仅供参考，客户可根据本身的回流炉使用情况以及实际工艺需求做适当调整。

NOTE: The above temperature curve is considered to be a recommended technology one for reference. It can be adjusted due to actual technology demand.

4. 安全和清洗 Safety and Cleaning

Tin Mate-X100A无毒性,但在回流焊过程中会产生一些反应性或化合物分解导致的气体。因此建议工作区域内应有良好的通风条件。

Tin Mate-X100A has no toxicity, but it will produce some reacting or compound broken down gas in the process of solder reflowing. Therefore, It's suggested that there are good atmospheric conditions in the work area.

Tin Mate-X100A专为免洗应用设计。如果需要清洗,一般的清洗剂就可以完全清除助焊剂残留。

Tin Mate-X100A is designed for no-clean applications, however the flux can be removed if necessary by using a commercially available flux residue remover.

5. 贮存和使用

5.1 保质期: 未开封,在冷藏(0~10℃)条件下,自生产日起保存6个月;

Shelf life: unopened, stored for 6 months from the date of production under refrigerated (0~10 °C) conditions;

5.2 使用: 请在25±3℃的环境中使用;

Use: Please use in an environment of 25±3° C;

5.3 回温: 请不要在冷藏环境下取出后马上使用,至少在室温下存放4小时,使其恢复到室温后方可使用;

Warming: Do not use immediately after taking it out in a refrigerated environment, store it at room temperature for at least 4 hours to allow it to return to room temperature before use;

5.4 使用前搅拌: 请使用锡膏搅拌机,机器搅拌90-180(秒)请在开封后立即使用;

Stir before use: Please use a solder paste mixer, machine stir for 90-180 (seconds) Please use immediately after opening;

5.5 请勿直接接触皮肤,接触到皮肤时,请立即使用酒精清洗。

Do not come into direct contact with the skin, and if it comes into contact with the skin, wash it immediately with alcohol.

5.6 不建议在室温下进行存储超过8小时。

It is not recommended to store at room temperature for more than 8 hours.