Eco+PLUS® series
Lead free SOLUTIONS you can TRUST

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No.49005
2011.12.27

Contents

Koki no-clean LEAD FREE solder paste

HF
Halogen Free

Low Melting Point Lead Free Solder Paste

TB48-M742D

Product information

This Product Information contains product performance assessed strictly according to our own test procedures and may not be compatible with results at end-users

KOKI
CHALLENGING NEW TECHNOLOGIES

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Product Features

- Solder alloy composition is Sn58Bi
- Low melting point (138ºC)
- Stable dispensing performance
- Specially formulated flux chemistry **LOW VOIDING** with CSPs and broad contact area components
- High electrical reliability after reflow

TB48-M742D

Specification

Application		Dispensing
Product		TB48-M742D
Alloy	Alloy Composition (%)	Sn Bi58.0
	Melting point (°C)	138
	Particle size (um)	20 - 45
	Shape	Spherical
Flux	Halide Content (%)	0
	Flux type	ROL0*2
Product	Flux Content (%)	12.0±1.0
	Viscosity*1 (Pa.s)	100±20
	Cupper plate corrosion*3	Passed
	Tack Time	> 16 hours
	Shelf Life (below 10°C)	3 months

1. Viscosity : Malcom spiral type viscometer,PCU-205 at 25oC 10rpm
2. Flux type : According to IPC J-STD-004A
3. Copper plate corrosion : In accordance with IPC J-STD-004A

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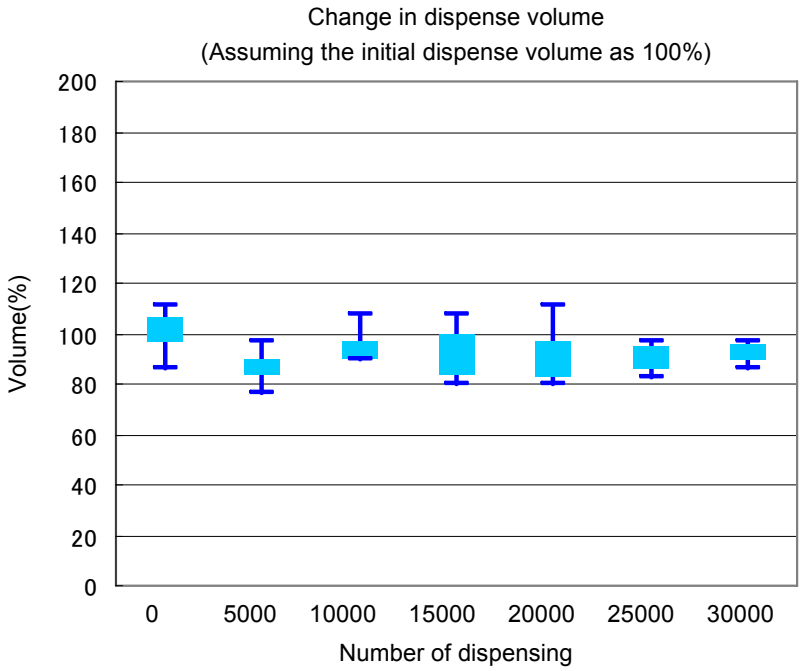
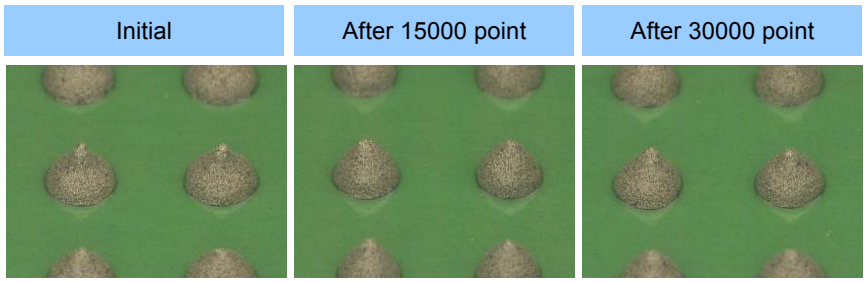
Dispensing performance

Dispensing parameters

Needle diameter:	0.46mm（Inside diameter）
Dispensing Device :	IMAGE MASTER 350PC Hi-speed dispenser
Dispensing interval :	2 points/sec
Pressure :	350kPa
Atmosphere :	24.0～26.0ºC

IMAGE MASTER 350PC(MUSASHI)



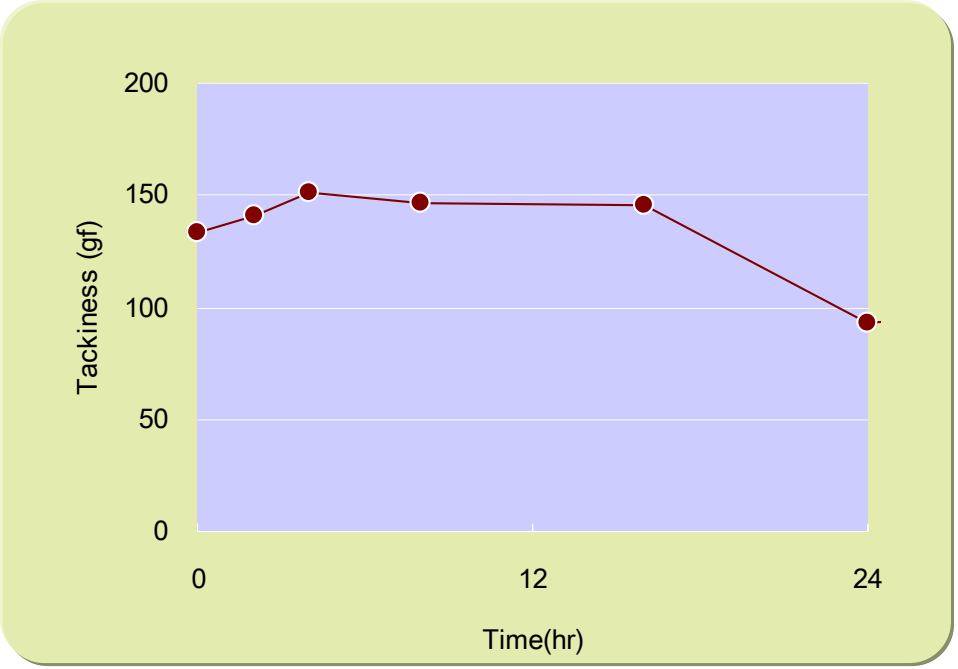


Stable dispensing at 0.46mm diameter needle.

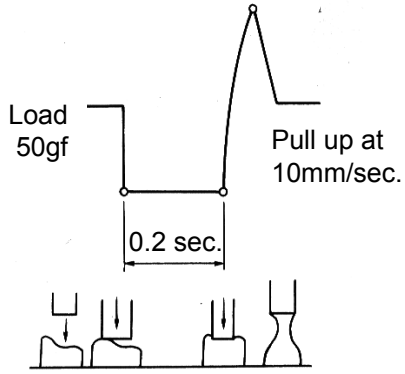
Contents

Tack time

- Stencil : 0.2mm thick, 6.5mm dia. aperture
- Measurement instrument : Malcom tackimeter TK-1
- Probe pressure : 50gf
- Pressurizing time : 0.2sec
- Pull speed : 10mm/sec.
- Test method : In accordance with JIS Z 3284
- Test environment : 25+/-1° C, 50+/-10%RH



Tensile strength = Tack force



Unique solvent system successfully assures sufficient tack time.

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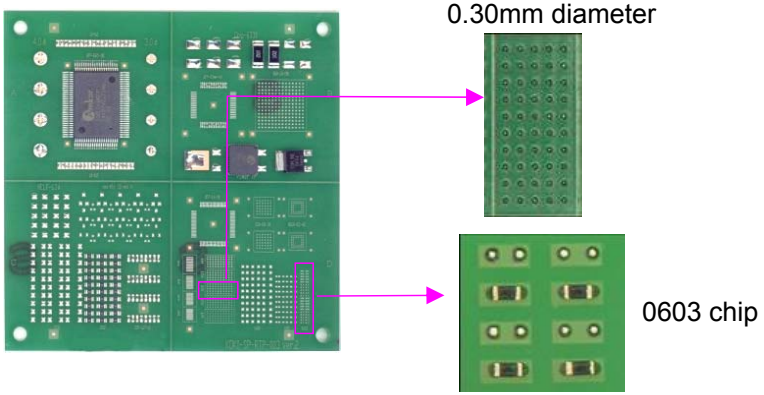
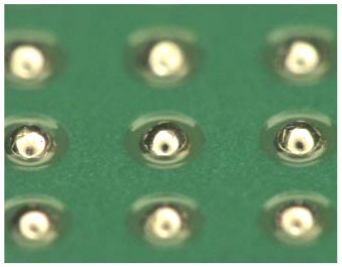
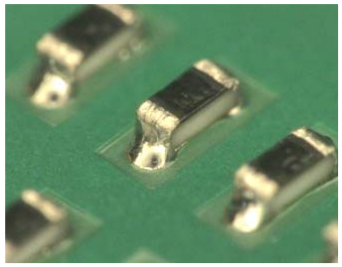
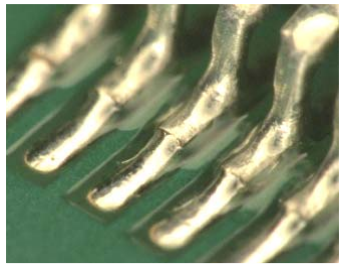
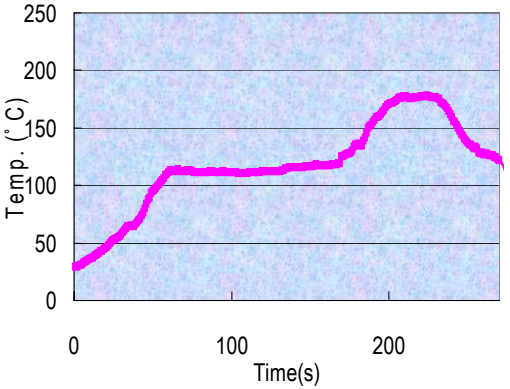
Super fine pattern wetting *by print method

- Material : Glass epoxy FR-4
- Surface treatment : OSP
- Stencil thickness : 0.12mm (laser cut)
- Pad size : 0.30mm diameter
- Component: 0603 chip,
- Stencil aperture : 100% aperture opening to pad
- Heat source : Hot air convection
- Zone structure : 5 pre-heat zones +2 peak zones
- Atmosphere : Air
- Reflow profile : See below



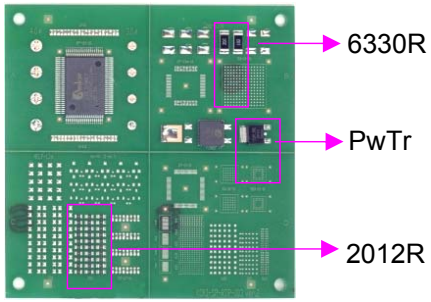
	0.30mm dia.	0603R	0.5pQFP
TB48-M742D			

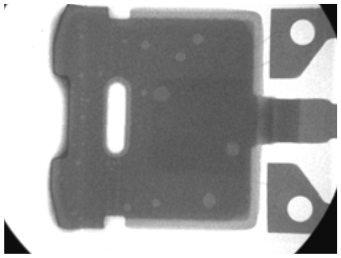
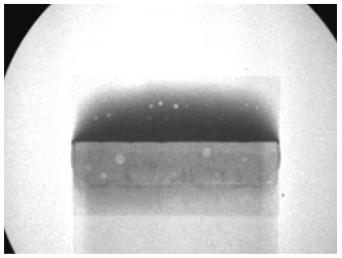
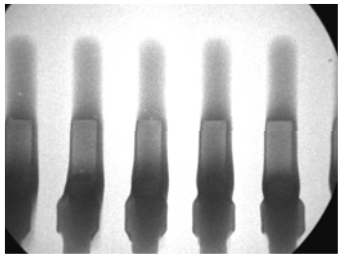


Larger relative surface areas of solder paste exposed due to miniaturization of components (CSP, 0603 chips), often cause incomplete melting due to excess oxidation during the reflow. An improved flux formula ensures complete coalescence by minimum deterioration of barrier performances .

Voiding *by print method

- Material : Glass epoxy FR-4
- Surface treatment : OSP
- Stencil thickness : 0.12mm (laser cut)
- Stencil aperture : 100% aperture opening to pad
- Components : PwTr, 6330R, 2012R, 100% Sn plated
  1.0mm pitch BGA: SAC305
- Heat source : Hot air convection
- Zone structure : 5 pre-heat zones +2 peak zones
- Atmosphere : Air
- Reflow profile : Same as *"Super fine pattern wetting"*

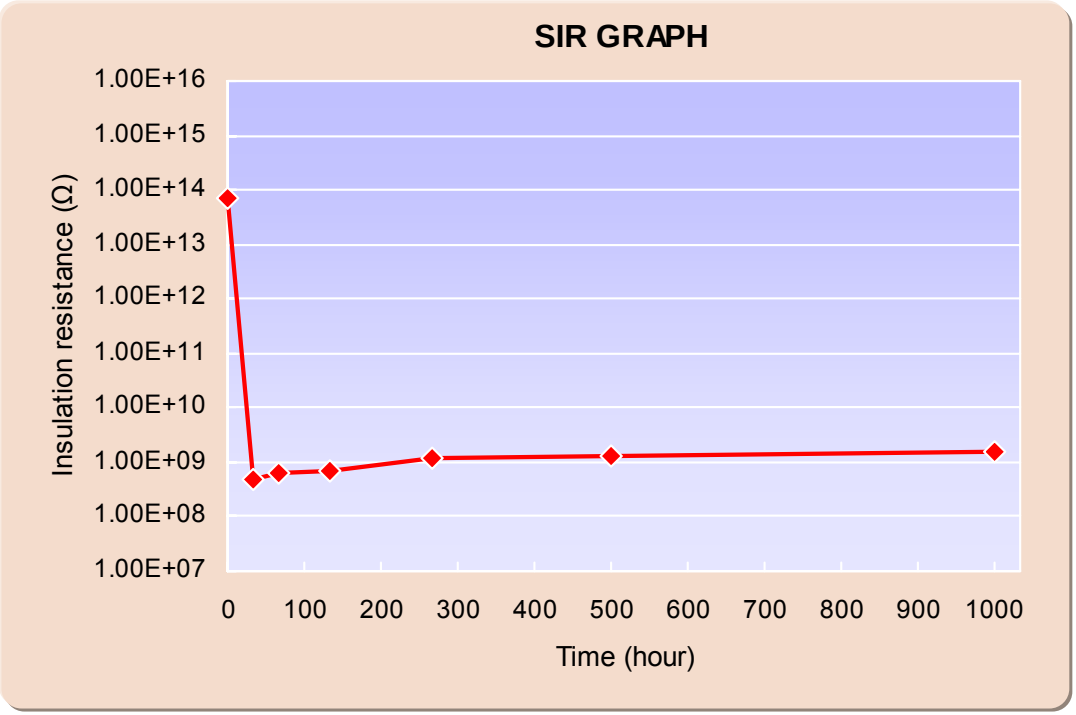


	Pwtr.	6330R	0.5pQFP
TB48-M742D			

Low voiding with broad contact area components.

Voltage applied surface insulation resistance

- Test conditions : 85±2oC × 85%RH for 1000 hours
- Stencil thickness : 100 micron
- Comb type electrode : JIS type-II
- Measurement voltage : DC100V
- Voltage applied : DC50V
- Test method : JIS Z 3197



No evidence of electromigration can be observed.

Contents

Handling guide

1. Dispensing

1) Recommended dispensing parameters

(1) Needle

1. Gauge	: ≧ 0.4mm dia.
2. Pressure	: ≧ 300MPa
3. Shapes	: Blunt point / Taper point

※ Dispensing time and pressure shall be carefully adjusted based on the dispensing conditions, including the machine settings to obtain the optimal results.

(2) Ambiance

1. Temperature	: 23~27ºC
2. Humidity	: 40~60%RH

※ Temperatures of dispensing machines and solder paste itself shall be strictly controlled constant since dispensing volume easily fluctuates by temperature change.

2. Shelf life

At 0~10ºC : 3 months from manufacturing date

* Manufacturing date can be obtained from the lot number

ex. **Lot No. 2 01 16 3**

No. of lot	**:**	**3rd**
Date	**:**	**16st**
Month	**:**	**Jan.**
Year	**:**	**2012**

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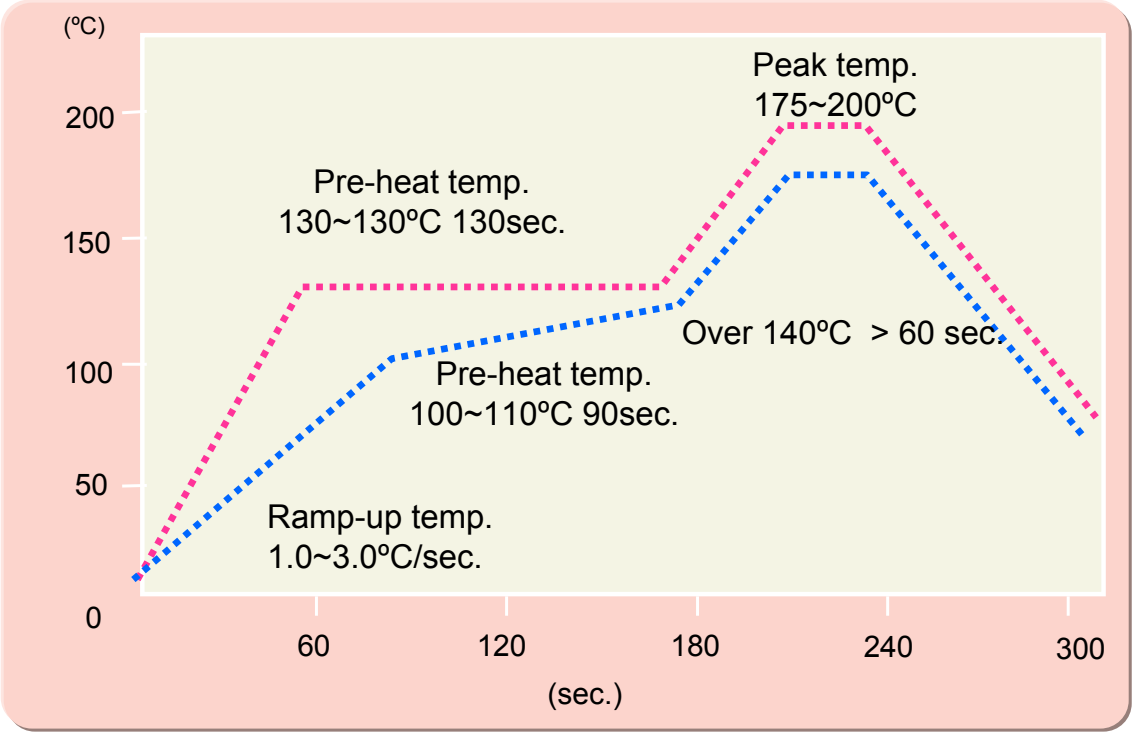
Recommended reflow profile



	Pre-heat zone	Peak zone
····· Lower limit:	100～110ºC 90sec	175ºC
····· Upper limit:	130～130ºC 130sec	200ºC

Lowering the pre-heat and peak temperatures could lead to a drop in electrical reliability