RHESCA

SOLDER CHECKER

## SAT-5100

For fine Materials & Accurate Analysis

Solder Checker SAT-5100 is designed to test and evaluate solderability of soldering materials for electronic parts. SAT-5100 is also good for the evaluation of Pb-free soldering materials, which have been the focus of attention these days.

- Compliant with both National and International Standards.
  (EIAJ ET-7404, ET-7401, IPC/EIA J-STD-002B, JIS C 60068-2-54, JIS Z 3198-4, IEC 60068-2-69)

- Wetting test and evaluation of solder paste for electronic chips using the temperature profile similar to that used for reflow soldering.

- Quick wetting test and evaluation of solder paste for electronic chips by rapid heating method.

- Wetting test and evaluation of solder paste for electronic chips and through-holes using an aluminum block and soldering globule.

- Wetting test and evaluation in N_2 atmosphere.

- PC-based analysis including wetting time, wetting force, wetting angle and surface tension as well as multiple display of measured data.

- Applicability to dipping test and solder spread test. (option)
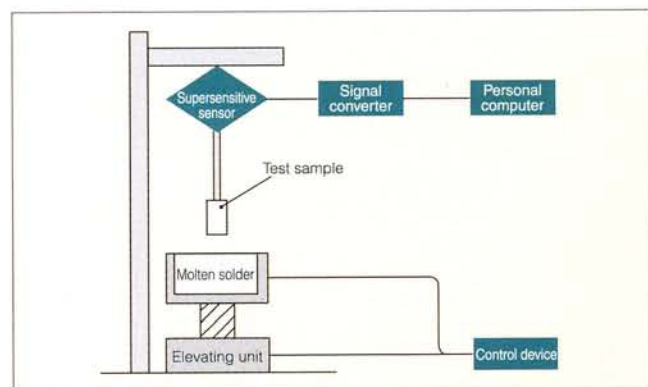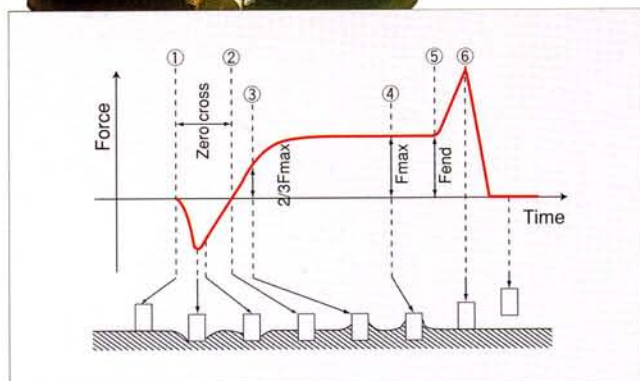
OPERATION

Wetting Balance Method
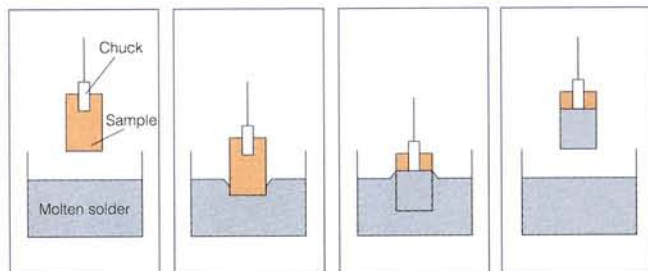
The wetting balance method, primarily aimed at inspecting solderability of flow soldering, has been used over 20 years. An optional N_2 chamber and a preheating block are also available.
Compliant with IPC/EIA J-STD-002B, JIS C 60068-2-54, JIS Z 3198-4
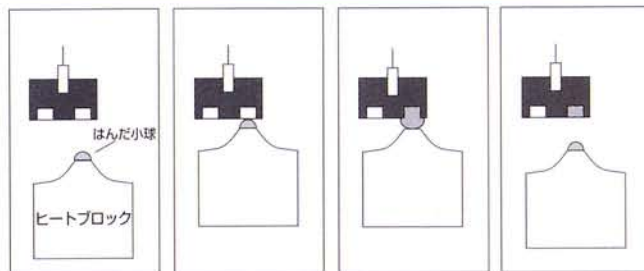

Block diagram of wetting balance method


Analyzed parameters

Following parameters are calculated from measured results.
○Zero-crossing (time between ① and ②)
○Rise time (time between ② and ③)
○Wetting force (force at ④)
○Wetting stability (stress ratio at ④ and ⑤)

Wetting Balance Method with Solder Globule

In this method, a solder globule is used to cope with the difficulty involved in the wetting evaluation between molten solder and surface-mounted devices. Two kinds of globule heating blocks are prepared for sample size adjustment. Wetting test and evaluation concerning through-holes are also possible.
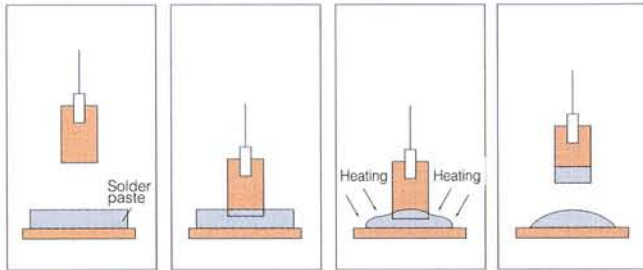Compliant with EIAJ ET-7401, IEC 60068-2-69
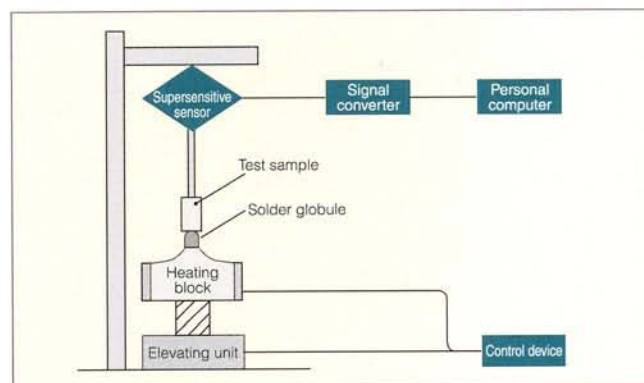
Block diagram of wetting balance method with solder globule
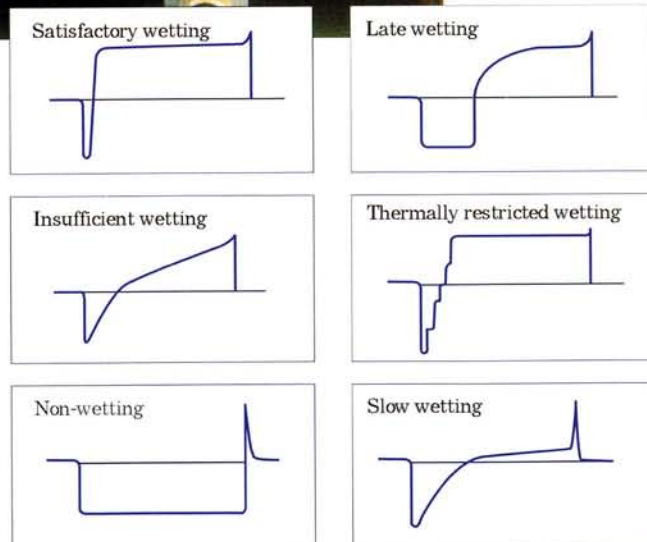
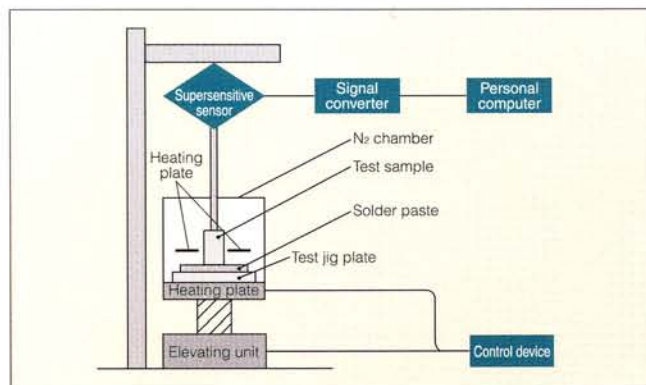Typical curves of wetting force vs. time

Temperature Profile Method

With a test sample heated from above and bottom, a temperature raising process similar to that used in reflow soldering is realized for practtical wetting test and evaluation.
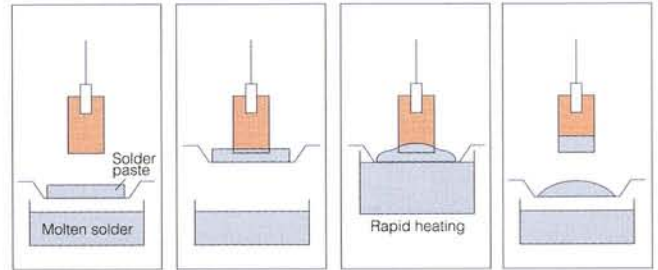
Testing in N_2 atmosphere is also possible.

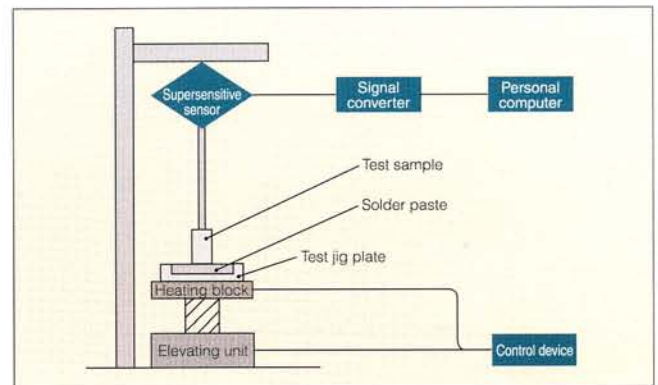Compliant with EIAJ ET-7404, JIS C 0099

Block diagram of temperature profile method

Analyzed parameters

Following parameters are calculated from measured results.
- Zero-crossing (time between ① and ②)
- Rise time (time between ② and ③)
- Wetting force (force at ④)
- Wetting stability (stress ratio at ④ and ⑤)
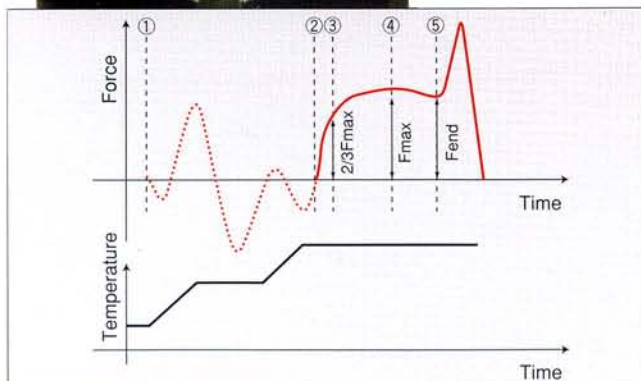
Rapid Heating Method

For quick test and evaluation, solder paste and a surface-mounted device, which are brought together, are dipped and rapidly heated in molten solder.
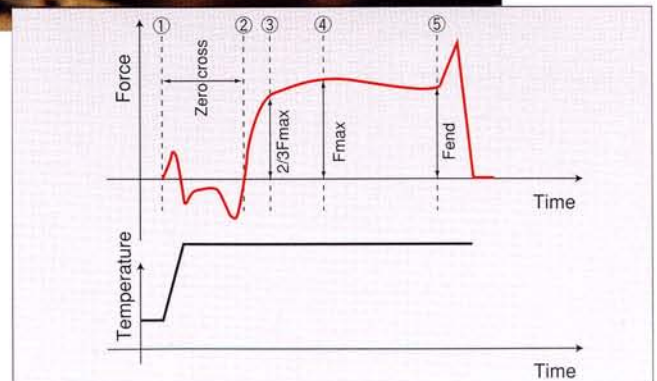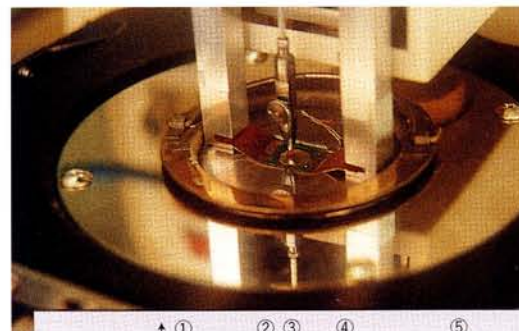
Compliant with EIAJ ET-7404, JIS C 0099

Block diagram of rapid heating method

Analyzed parameters

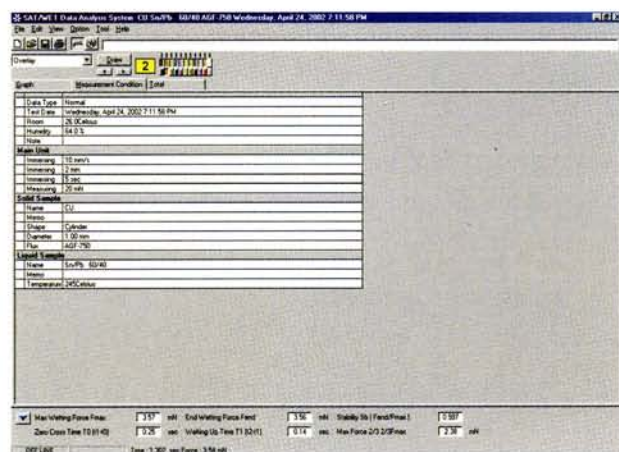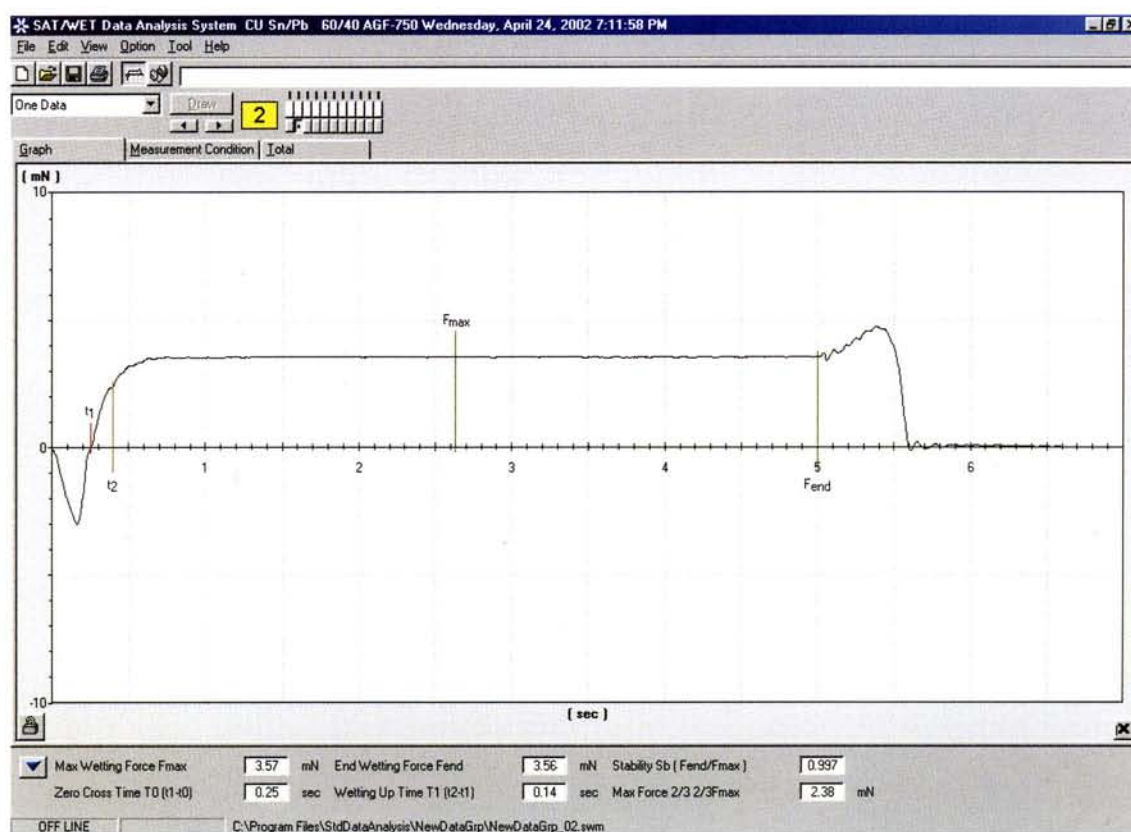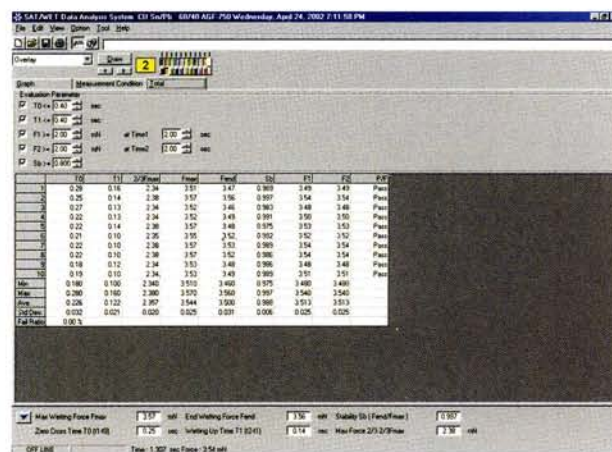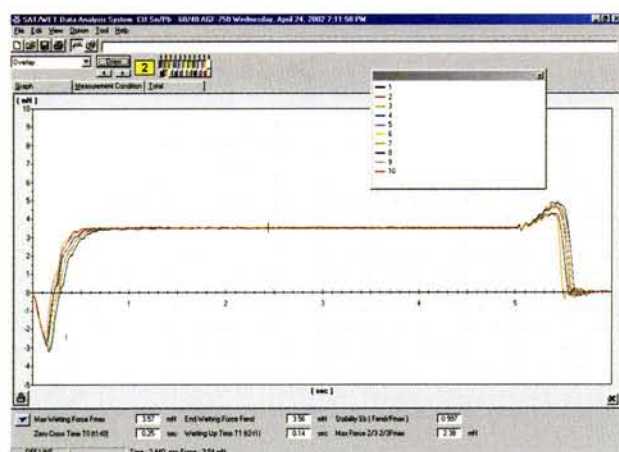Following parameters are calculated from measured results.
- Zero-crossing (time between ① and ②)
- Rise time (time between ② and ③)
- Wetting force (force at ④)
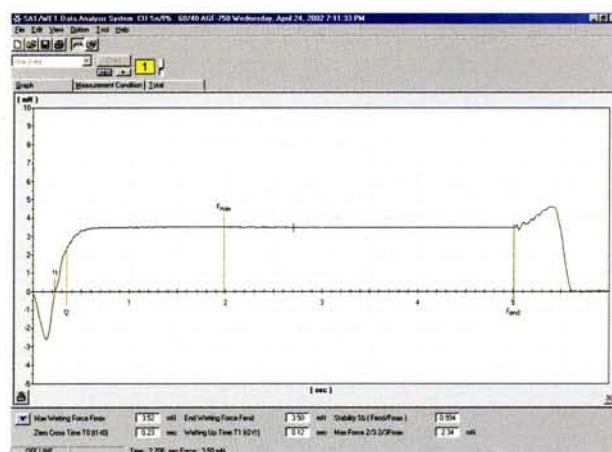- Wetting stability (stress ratio at ④ and ⑤)

APPLICATION

Measuring conditions

Collective output

Superimpose display

Average data curve

SPECIFICATION

Specifications

Specifications / Tyoe	Type SAT-5100
Dip time	1 - 999sec 1 - 999min
Immersion depth	0.01 - 1mm Step : 0.01mm 1 - 20mm Step : 0.1mm
Dip speed	0.1 0.2 0.3 0.4 0.5 1 1.5 2 3 4 5 10 15 20 25mm/sec
Stress sensitivity	±2 5 10 20 50mN Selectable
Stress measurement accuracy	±0.5%
Sample weight adjustment	0 - 10g
Data output	Analog output 100mVFS
	RS-232C (need PC-based application software)
	Portable desktop printer (for zero-cross and Fmax printout)
Electric power supply	AC100V
Dimension of main unit, weight	W350×D500×H470 Approx. 26kg
Option	
· Solder bath	φ60 60mm in depth
Temperature setting range	Room temperature to 400℃
Temperature controlling accuracy	235℃±2℃
Temperature controlling method	PID control
Thermal sensor	Type K thermo-couple (standard)
N₂ chamber (oxygen density)	500ppm
Front heating device	Room temperature to 400℃
· Solder globule jig	φ2 φ4mm (Position is adjustable)
(for both globule and through-hole)	
· Solder globule mounting jig	
Moving range	Moving step : 0.05mm
· Temperature profile jig	Heating from above and bottom
Temperature setting range	Room temperature to 350℃
Temperature raising speed	0.1～4℃/sec
Cooling method	Cooling fan
N₂ chamber (oxygen density)	500ppm
· Rapid heating jig	
Temperature setting range	Room temperature to 350℃
Temperature raising speed	70℃/sec or faster
· Solder spread test jig	
· Data processing software	Windows version 95, 98

Configuration

Measuring method	Wetting balance method	Wetting balance method with solder globule	Temperature profile method	Rapid heating method
Main unit	○	○	○	○
Solder bath	○	○	—	○
Solder globule jig	—	○	—	—
Solder globule mounting jig	—	○	—	—
Temperature profile jig	—	—	○	—
Rapid heating jig	—	—	—	○
N₂ chamber	△	△	Standard	△ *1
Preheating device	△	△	×	×

○ : Necessary   △ : Option   × : Unavailable   *1 : Custom-order

※Specifications and appearance may be changed without previous notice

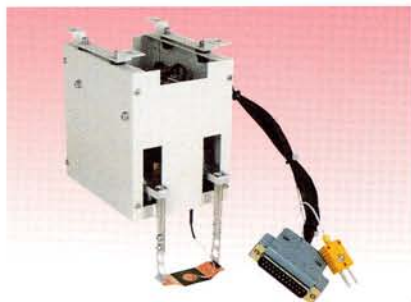# OPTION

Chuck A

Chuck B

Chuck C

Chuck F

45° chuck

IC chuck

Rapid heating jig
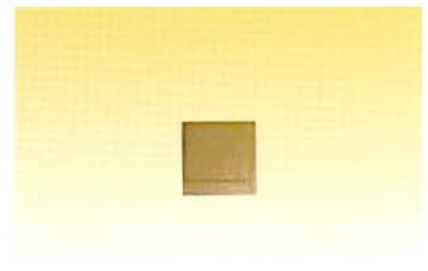

Temperature profile jig

Solder globule jig

Preheating device and N2 chamber

EIAJ ET-7404 compatible copper plate
for rapid heating

EIAJ ET-7404 compatible copper plate
for temperature profile control

ООО "Евроинтех"
109387, Россия, Москва,
ул. Летняя, д. 6
Телефон/факс: +7-(495)-749-45-78
E-mail: sales@eurointech.ru
http://www.eurointech.ru

S-PTR03041M