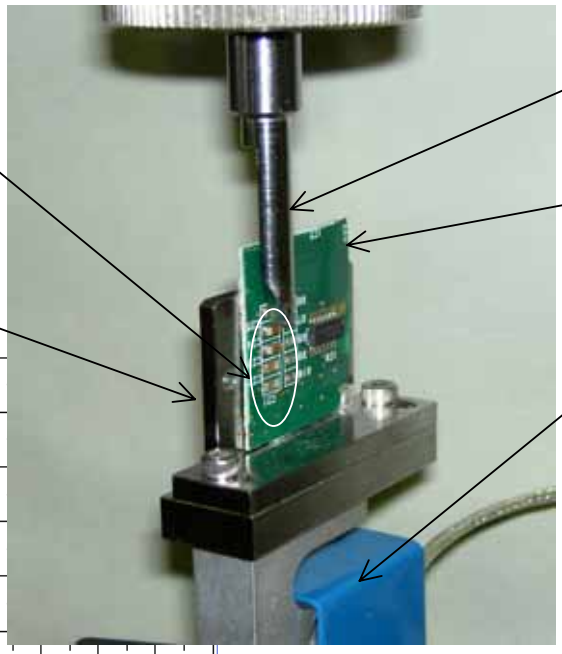
SHIMADZU

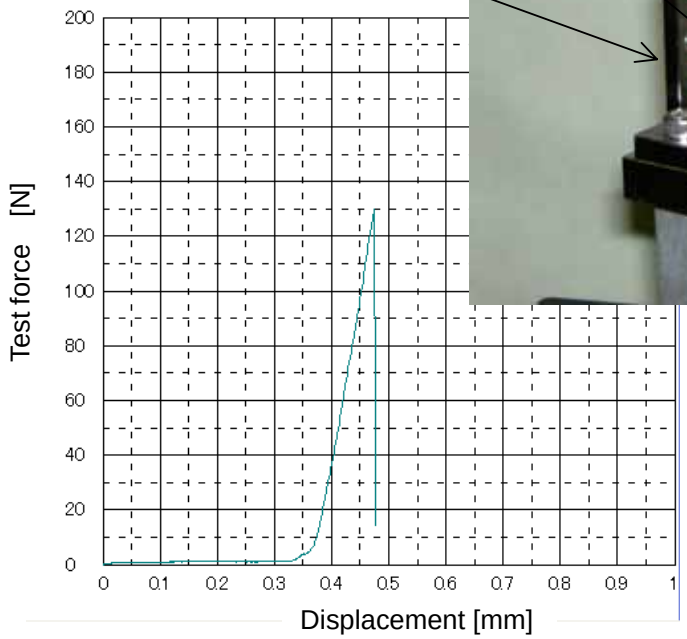
MST-I Application Information

Shear Peeling Tests of Surface Mounted Devices

Shear peeling tests of surface mounted devices (SMD) can be carried out. This test is applicable to not only conventional soldered joints, but also to the evaluation of lead-free solder which is increasingly being used recently.

Applicable standards: JIS Z3198-7
IEC (The International Electrotechnical Commission) and JEITA (Japan Electronics and Information Technology Industries Association) are also intending to issue standards



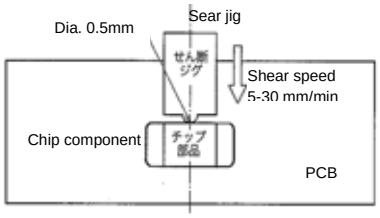


Test speed: 1 mm/min
Shear strength: 130.2 mN

Optional Jigs
1. 45° peeling test jig
2. XY stage
3. Stereomicroscope (useful when the test piece is difficult to see visually)

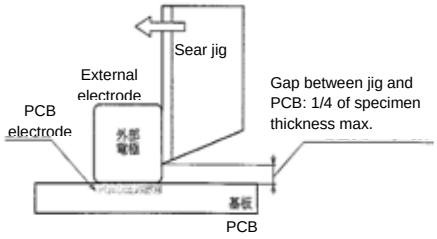
Test Standard Summary

JIS Z 3198-7 Test methods for lead-free solders -- Part 7: Method for shear strength of solder joints on chip components



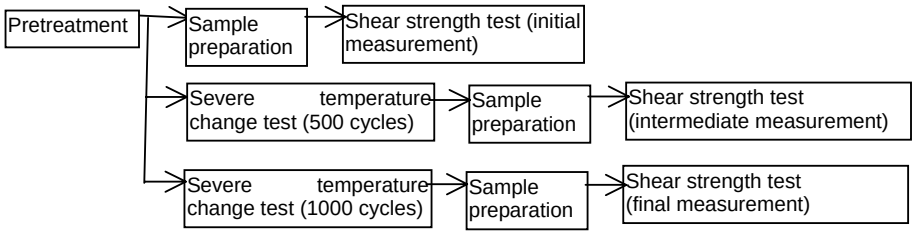
Test for evaluating the strength of soldered connections of chip components

Test conditions
- Measurement accuracy of test force not specified
- Test speed 5 - 30 mm/min

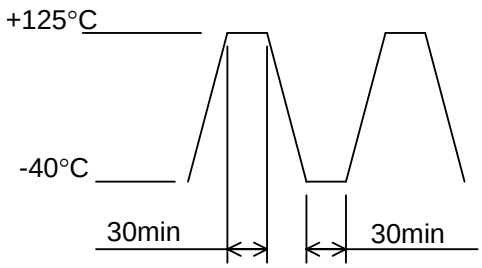


Measurement item
- Maximum test force

IEC/JEITA Standard
(Provisional title) Method for testing the side push shear strength of soldered connections of surface mounted devices using lead-free solder
Side push shear strengths before and after the severe temperature change test (cyclic) are compared to evaluate the durability of the connection.



Test Flow

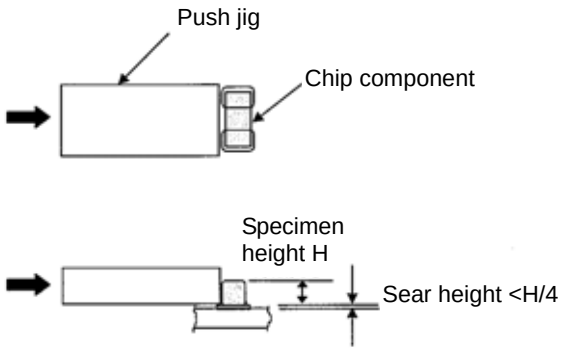


Temperature Cycle

Side Push Shear Strength Test

Test conditions
- Test force measurement accuracy
  ≤ ±1% of indicated value
- Test speed 0.5 - 9 mm/min

Measurement item
- Maximum test force



Side Push Shear Strength Test

Similar Standards
SEMI G63-95 Test Method for Measurement of Die Shear Strength
JEITA ET-7403 Test methods of mechanical strength of surface mounting devices
JIS C0051 Environmental test methods – electrical, electronic – method of testing terminal strength