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Coilcraft SMD-A Test Fixture

Accurate and repeatable measurements of SMD chip inductors and other SMD components can be made using the Coilcraft SMD-A fixture with many impedance measurement instruments.

Fixture Characteristics

SMD Chip Size Range:	0603 to 1812
Frequency Range:	DC to 1.8 GHz
Connector:	Precision 7 mm (APC-7 compatible)
Electrical Length:	0.72 cm

Package Contents

SMD-A test fixture with standard placement mask

Low capacitance placement mask

Shorting bars

Sample chip inductors

General Measurement Procedure

Note: For instrument-specific procedures, follow the instructions supplied with the test instrument.

1. Determine the required test frequency or frequency range from the component data sheet or specification. Verify that the required test frequency is within the fixture frequency range.
2. Set the instrument for the required frequency range, measurement parameters (e.g. L, Q, Z, θ), number of measurement (frequency) points, and averaging parameters.
3. Calibrate the instrument using accurate reference standards.
4. Attach the appropriate size mask to the SMD-A test fixture. Different placement masks are provided to locate each SMD component in a repeatable position. See **Changing Placement Masks**.
5. Connect the SMD-A to the test instrument by sliding the fixture onto the test instrument binding posts until the SMD-A is level.

CAUTION: Do not over-tighten the connector. Over-tightening can damage the center conductor.

6. Fasten the 7 mm connector of the test instrument onto the SMD-A connector until snug (approx. 3 turns). Make sure the fixture is supported evenly so that uneven forces are not applied to the electrical connection.
7. Enter the electrical length to compensate for fixture phase delay.

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8. Make sure there is no component or shorting bar in the fixture, and perform OPEN fixture compensation.
9. Select a shorting bar that is closest in size to the test component.
10. Place the shorting bar into the fixture mask and center over the white ring. Lower the plunger and perform SHORT fixture compensation. Remove the shorting bar.
11. Place the test component into the fixture mask and center over the white ring. Lower the plunger.
12. Read the displayed value on the instrument.

Changing Placement Masks

Each placement mask has templates to accommodate different size components. The standard placement mask is initially installed in the fixture. A low capacitance mask is also included for low impedance measurements.

1. Carefully remove the four cap screws and the retaining ring from the top of the fixture.
2. Exchange the existing mask with the required mask.
3. Replace the retaining ring. Install, but do not tighten the four cap screws.
4. Rotate the placement mask so that the template is located directly under the plunger.
5. Tighten the four cap screws until they are just snug.

References

The following application notes are available on the Coilcraft website at www.coilcraft.com/appnotes.cfm

Test Fixture Compatibility Chart

Calibration, Compensation and Correlation

Testing Inductors at Application Frequencies

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