

SEMI G75.10-0698 (Reapproved 0615) TEST METHOD FOR MEASUREMENT OF VOLUME AND SURFACE RESISTIVITY OF THE LEADFRAME TAPE

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1 Summary of Method

1.1 A resistance is measured across the thickness and along the surface of the adhesive of tape between electrodes deposited on the tape. Volume and surface resistivity are calculated from these resistances and the dimensions electrodes.

2 Equipment

- 2.1 *Power Source* — 500 volts DC battery or 500 volts rectified voltage supply.
- 2.2 Amplified galvanometer should be used for measuring insulating resistance no less than $10^6 \Omega$.
- 2.3 Electrostatically and electromagnetically shielded box.
- 2.4 Humidity-controlled storage box.
- 2.5 *Micrometer* — 0.001 mm accuracy.

3 Sampling

- 3.1 The sampling is one sample per one lot. The vendor must report the definition of lot, if the customer requires it.

4 Preparation of Specimens

- 4.1 The specimen shall be punched out from tape, the diameter of which has to be no less than that of the opposite electrode.
- 4.2 Place the specimens in the constant humidity box $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ RH for 90 ± 2 hours. This may also be done after the electrodes are formed.

5 Test Conditions

- 5.1 *Temperature* — $23 \pm 2^\circ\text{C}$.
- 5.2 *Relative Humidity* — $50 \pm 5\%$ RH.
- 5.3 *Applied Voltage* — 500 volts.

6 Procedure

- 6.1 Measure the thickness of specimen with the micrometer. Attach the electrodes to the specimen. Electrodes are formed by conductive epoxy printing or aluminum evaporation shown in Figure 1.

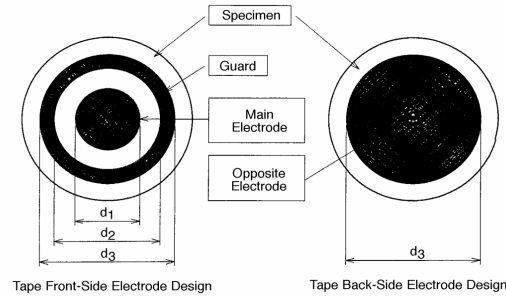


Figure 1
Electrodes Formed on the Leadframe Tape

NOTE 1: The electrodes shall be formed on both sides of the tape.

NOTE 2: Suggested dimensions for the electrodes as shown in Table 1 (d_1 – d_2) should be at least 10 times the tape thickness.

Table 1 Suggested Dimension of the Electrodes

<i>Suggested Dimension (for tape thickness 0.063–0.077 mm)</i>	<i>Value</i>
d1	18 mm
d2	20 mm
d3	30 mm

NOTE 3: At surface resistivity measurement, main electrode and guard electrode is attached to the adhesive surface.

6.2 Place the specimens in the electrode system as shown in Figure 2.

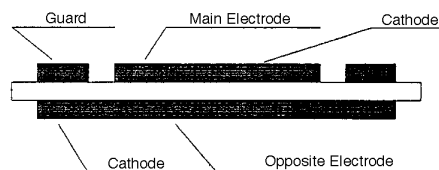


Figure 2
Volume Resistivity Electrode Connection

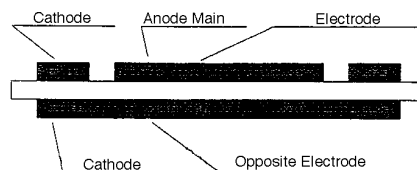


Figure 3
Surface Resistivity Electrode Connection