

Reliability Requirements for 20 μ m Pitch CARRIERFLEX[®]



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Summary

In recent years, as the definition of LCD televisions has increased and prices have dropped, there have been demands for circuit boards with integrated LCD driver ICs with a finer pitch and higher dimension accuracy. In order to satisfy such demands, we utilized fine pitch circuit formation technology using the semi-additive method and production processes utilizing metal substrates to develop our new COF CARRIERFLEX[®], which we then used to penetrate new markets. This trend toward finer pitch circuitry is expected to continue in the future, which will make insulation reliability an even more important factor than it has been in the past.

In this paper I will report on our investigations regarding the insulation reliability of CARRIERFLEX[®], which allowed us to clarify the following points:

- 1) It is possible to maintain insulation reliability even on fine-pitch circuits with a pitch of 16 μ m (L/S=8 μ m/8 μ m).
- 2) At a pitch of less than 20 μ m, residue from the seed layer between the circuits causes a deterioration in insulation characteristics. It is extremely important to develop a process that can reliably remove such seed layer residue.
- 3) With existing technology it is difficult to maintain insulation reliability for the 10 μ m ultra fine pitch circuits that are expected in the future, making it necessary to introduce new technology and materials that are outstanding in terms of their insulation properties.