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Reliability Testing of Micro and Nanostructured Epoxy/Rubber Blends

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Abstract
The reliability testing of epoxy / rubber blends used in micro / nanotechnologies is discussed. The necessary specific tests are described; then the reliability of epoxy / rubber blends studied by accelerated tests, in the main applications, is detailed.

References:

[1] Mc Adams, L.V. and Gannon, J.A. (1986) Encyclopedia of Polymer Science and Engineering, Vol. 6, 2nd Edition., Wiley Interscience.
[2] Ratna, D. and Banthia, A.K. (2004) Rubber Toughened Epoxy Macromolecular Research, 12 (1), 11-21.
[3] Băjenescu, T.-M. and Bâzu, M. (2010) Component Reliability for Electronic Systems, Artech House, Boston and London.
[4] Hamill, A.T. (1968) Westinghouse Goldilox Integrate Circuits Offer Military Meeting in Plastic Packages. Proc. of the DOD/NASA Industry Meeting on Plastic Encapsulated Semiconductor Devices, May 15, 1968, Washington D. C., USA.
[5] Flood, J. L. (1968) Reliability of Plastic Integrated Circuits, in Proc. of the DOD/NASA Industry Meeting on Plastic Encapsulated Semiconductor Devices, May 15, 1968, Washington D.C., USA.
[6] McCoog, J.R. (1997) Commercial Component Integration Plan For Military Equipment Programs: Reliability Predictions and Part Procurement. Proc. of the Annual Reliability and Maintainability Symp., Jan. 13-16, 1997, Philadelphia, Pennsylvania, USA.
[7] Chandrasekaran, A. (2003) Effect of Encapsulant on High- Temperature Reliability of the Gold Wirebond – Aluminum Bondpad Interface. Master of Science Thesis, University of Maryland.
[8] Sinnadurai, N. (1996) Plastic Package is Highly Reliable. IEEE Trans. on Reliability, 45 (2), 184–193.
[9] Teverovsky, A. et al. (2003) Instructions for plastic encapsulated microcircuits selection, screening and qualification. Document of the National Aeronautics Space Administration, Goddard Space Flight Center, Greenbelt, Maryland 2077.
[10] Condra L., et al. (1992) Comparison of Plastic and Hermetic Microcircuits under Temperature Cycling and Temperature Humidity Bias. IEEE Trans. on Components, Hybrids and Manufacturing Technology, 15 (5), 640–650.
[11] Băjenescu, T. I. and Bâzu, M. (1999) Reliability of Electronic Components, Springer, Berlin, Heidelberg and New York.
[12] Sayre, J.A. (1979) Accelerated Thermal Aging of Rubber Modified Epoxy Encapsulants. Internal Report SAND 79-0605C, Sandia Labs., Albuquerque, NM.