

## Part Reliability

Reliability is the probability of a part performing its specified purpose for the period intended under the operating conditions encountered. This definition stresses three elements: *performance, time, and operating conditions*. These factors play an important role in the part's reliability.

- a. Performance is satisfactory operation in accordance with clearly specified, described, or defined criteria. The military uses performance specifications (e.g., MIL-PRF-38535 for Microcircuits or MIL-PRF-19500 for Discrete Semiconductors) for part types described in this document/database. Performance specifications are described in each section.
- b. Time is the period during which a specified degree of performance is expected. It is the cornerstone of reliability because without a knowledge of the probabilities of individual parts functioning for a given time, there is no way of assessing the probability of the system performing a function for a given time.”
- c. Operating conditions comprise the environment in which a part is expected to function. Typical factors are temperature, humidity, shock, and vibration. MIL-HDBK-338B, Electronic Reliability Design Handbook, should be used in conjunction with this document/database.