

ICS 03.120.01; 03.120.30; 31.020
CCS L 05



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 37963-2019

**Handbook of reliability prediction model and data for electronic
equipment**

Issued on: August 30, 2019

Implemented on: December 1, 2019

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

3 terms and definitions, symbols

3.1 Terms and definitions

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to refer to IEC TR62380.2004 "Reliability Data Book for electronic components, boards and equipment.

The general model of reliability prediction is compiled, and the degree of consistency with IEC TR62380.2004 is non-equivalent.

This standard was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This standard is under the jurisdiction of the National Technical Committee for Reliability and Maintainability of Electrical and Electronic Products (SAC/TC24).

This standard was drafted. The Fifth Institute of Electronics, Ministry of Industry and Information Technology.

Introduction

As China's industrial sector pays more and more attention to the reliability of electronic equipment (products), it is an important ring for reliability design.

One of the festivals, the implementation of reliability prediction has become more popular, but the lack of relevant standards has enabled enterprises to calculate the failure rate of domestic electronic components.

In the absence of technical guidance, the foreign reliability prediction manual is difficult to accurately reflect the reliability level of domestic electronic components. Therefore, it is necessary to end

In line with the fact that our national electronic equipment is used to carry out the preparation of national standards for reliability prediction.

Electronic equipment reliability prediction model and data sheet

1 Scope

This standard specifies the prediction model, impact factor characterization and related data of common component types, and provides reference for the calculation of reliability indicators.

Based on the test, the auxiliary equipment reliability optimization work is carried out.

This standard applies to domestic electronic components.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 2900.13-2008 Electrotechnical terminology credibility and service quality

GB/T 4798 (all parts) Environmental conditions for the application of electrical and electronic products

3.1 Terms and definitions

The following terms and definitions as defined in GB/T 2900.13-2008 apply to this document.

3.1.1

Basic failure rate reference failure rate

Failure rate under given baseline conditions.

3.1.2

Reference condition

The stress conditions are selected to match the use of components in most applications and equipment.

Note. including temperature, electrical stress, mechanical stress, etc.

3.1.3

Failure mode failure mode

The way the failure occurs.

3.1.4

Task profile missionprofile

A time-series description of the events and environments experienced by the product during the time it takes to complete the specified task.

3.1.5

General failure rate genericfailurerate

The failure rate of components in the general working environment and common working stress.

Note. This failure rate is used when component count reliability is expected.

3.1.6

Component

A component of a device that cannot be physically subdivided without losing its specific function.