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**Semiconductor devices – Mechanical and climatic test methods –
Part 43: Guidelines for IC reliability qualification plans**

**Dispositifs à semiconducteurs – Méthodes d'essais mécaniques et climatiques –
Partie 43: Lignes directrices concernant les plans de qualification de la fiabilité
des CI**



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**SEMICONDUCTOR DEVICES –
MECHANICAL AND CLIMATIC TEST METHODS –**

Part 43: Guidelines for IC reliability qualification plans

FOREWORD

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47/2389/FDIS	47/2406/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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INTRODUCTION

This document provides guidelines for semiconductor IC vendors in the preparation of detailed reliability test plans for device qualification. Such plans are intended to be prepared before commencing qualification tests and after consultation with the user of their semiconductor integrated circuit product.

The guideline gives some examples for creating reliability qualification test plans to determine appropriate reliability test conditions based on the quality standards demanded in use conditions for each application of semiconductor integrated circuits. Categories are set for automotive applications and for general applications as a target of reliability. The grade for automotive use is further classified into two grades according to applications. The guideline assumes annual operating hours, useful life, etc. for each grade, and defines the verification methods for early failure rate and wear-out failure to propose appropriate reliability tests, and at the same time, presents concepts to properly ensure the quality of semiconductor integrated circuits using screening techniques which are designed to reduce the early failure rate.

Note that the test conditions and the values of acceleration factors presented in this guideline are shown to provide examples of calculations for obtaining reliability test conditions in order to verify the required quality standards, and are not designed to define the standards to ensure reliability of semiconductor integrated circuits.

NOTE Qualification tests are tests in which the semiconductor vendor takes account of the reliability required by its product users.