MTBF Prediction Report

Model No.	**SM210-25**
Document Version	**1.0**
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Revision History

Revision	Date	Description	Issuer
0.1	2018/08/14	Preliminary release	YU,SHENG-WEI
1.0	2018/08/14	Formally release	YU,SHENG-WEI

A. Scope

This document describes product's mean time between failure (MTBF).

B. Purpose

Provide a life time prediction value for product.

C. Method Description

1) This MTBF prediction report adopts "T***elcordia Technologies Special Report, SR-332, Issue3***" prediction method (method 1, black box).
2) Assume device failure rate could use sum every component failure rate to calculate its value.
3) The steady-state failure rate can express by below equation:

$$\lambda_{ss} = \pi_E \sum_{i=1}^{m} (Ni\lambda_{SSi})$$

m: number of different type component

λ SS: device failure rate at steady-state

Ni: i type component quantity in device

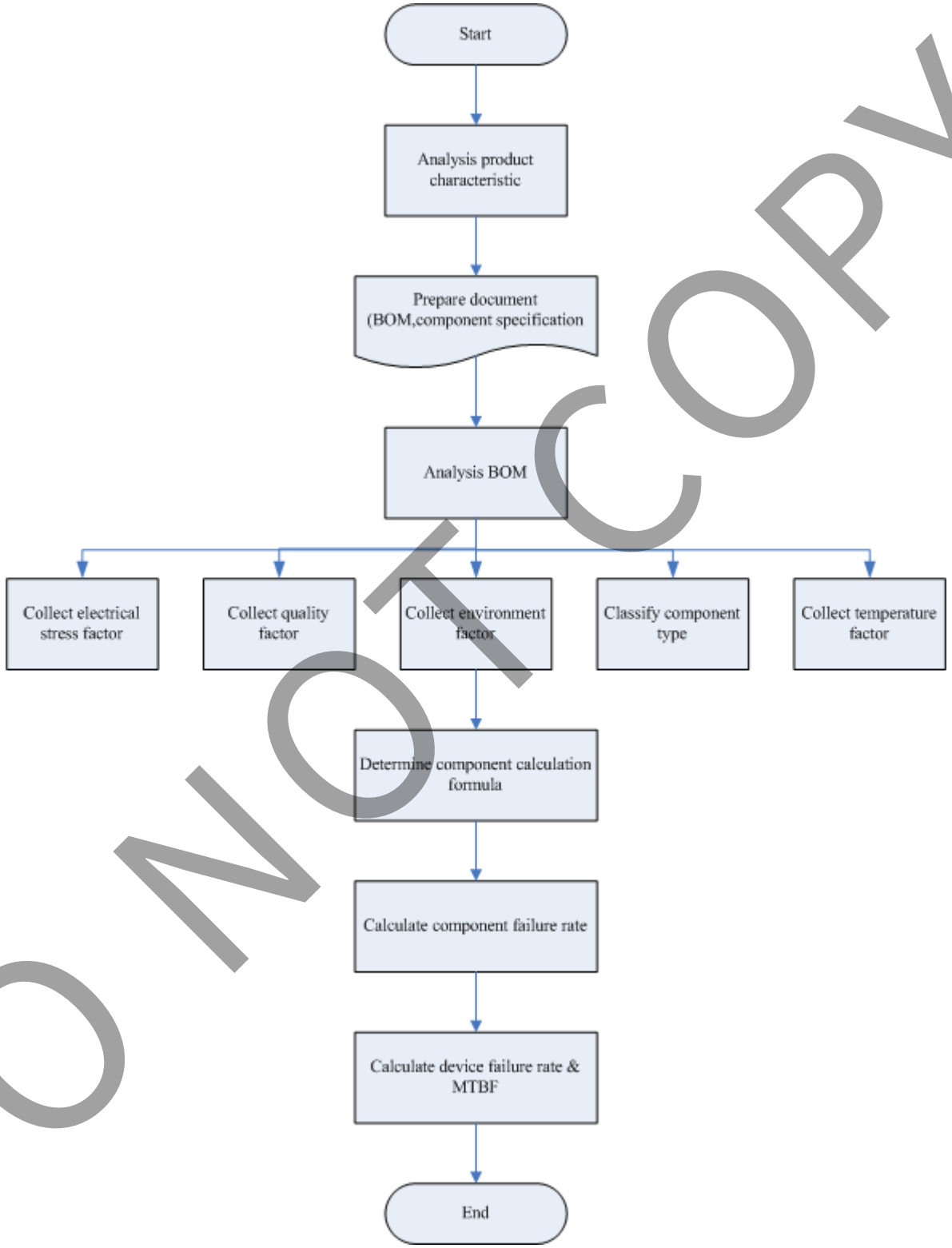
λ_{SSi}: failure rate for i type component at steady-state

π_E: device environment factor

D. Procedure Description

1) Collect characteristic data for product.
2) Document preparation:
   (1) Bill of material (BOM)
   (2) Component specification
   (3) Analysis BOM & collect component parameter
   (4) Determine calculation equation for every component
   (5) Calculate failure rate for every component
   (6) Get device failure rate and mean time between failure

E. Implementation Procedure Flow Chart



F. MTBF Prediction Value

Based on above method to calculate the device that its mean time between failure(MTBF) and failure rate are：

Temperature(℃)	MTBF(unit：hour)	F.R(unit：1/hour)
30	1.13×10^{6}	883.21

※ The environment condition：Ground, Benign, Controlled, 90% C.L, electrical stress=50%, π_Q=0 (quality factor).