Automotive Electronics Council
Component Technical Committee

AEC-Q200
Stress Test Qualification for Passive Components

2025 AEC Workshop
October 8, 2025

Saad Lambaz
Subcommittee Chair
Littelfuse Inc.

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Q200 Member
YAGEO

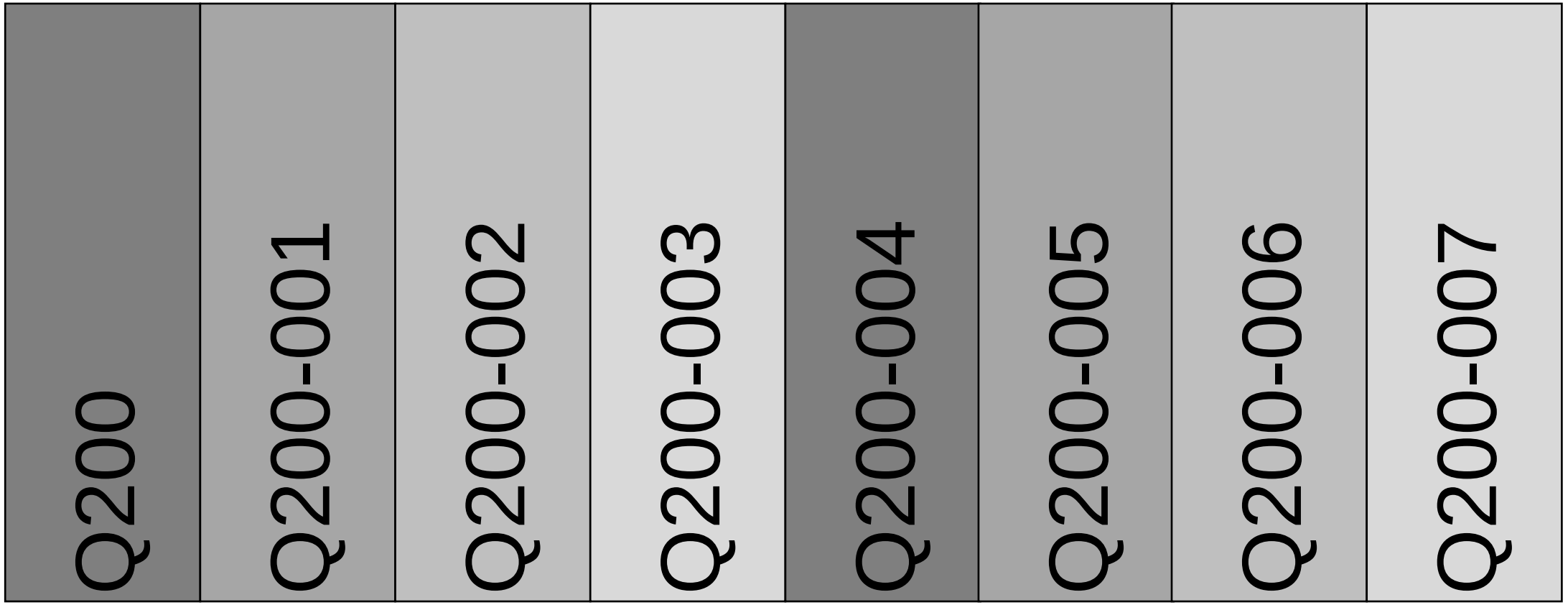
Agenda

- About (Scope, Members, Meetings)
- Document Status
- AEC-Q007
- The Future

About

- **Scope:** automotive qualification of passive components such as capacitors, inductors, resistors, thermistors, fuses, varistors, etc.
- **Members:** BorgWarner - Bose Corporation - Coilcraft Inc. - Continental - Diodes Inc. - Harman International Group - John Deere - Littelfuse Inc. - Marelli - Murata – onsemi - Robert Bosch GmbH - Schurter AG - TDK - Vishay - Yageo Group – ZF
- **Meetings:** weekly on Tuesdays at 8am Central Time Zone

Passive Components



Stress Test Qualification
For Passive Components (base document)

Rev E

Q200

- Revision E published March 20, 2023
- Revision F to begin Q3/Q4 2025
  - Corrections and typos missed in Revision E
  - Clarifications on requirements (ex electrical characterization and User Specifications)
  - Addition of new technologies reed switches and gas discharge tubes (GDTs)
- Split of Base Document

Flame Retardance Test

Rev B

Q200-001

- Current Revision B, June 1, 2010
- Discussions took place as to the need of this test since Flammability test is available
- Finalized that Flame Retardance is flaming caused by electrically overstressing the resistor while Flammability is how the non-metallic material behaves when an external flame is introduced
- New Revision C to be published in 2025

Human Body Model (HBM) Electrostatic Discharge Test

Rev B

Q200-002

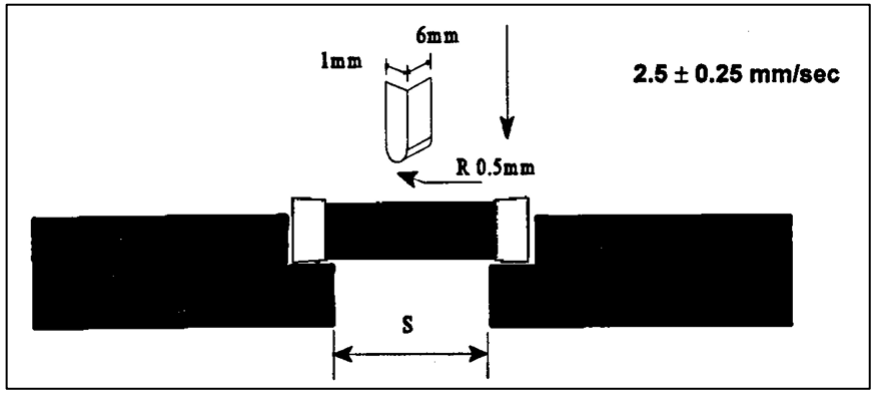
- Current Revision B, June 1, 2010
- Ongoing work
- New revision is to follow same approach as Q100 and Q101. ie ESD method is derived from an industry standard/method
- Finalized the use of MIL-STD-883-3, Method 3015.9
- Q200 committee member requested to review this approach due to AEC and ESD Association Memorandum Of Understanding
- Compare MIL-STD vs JS-001
- Agreed to proceed with JS-001
- New Revision C to be published in 2025

Beam Load (Break Strength) Test

Rev B

Q200-003

- Current Revision B, June 1, 2010
- No longer referenced in Q200 base document
- Document will be obsoleted in 2025



Measurement Procedures for Resettable Fuses

Rev A

Q200-004

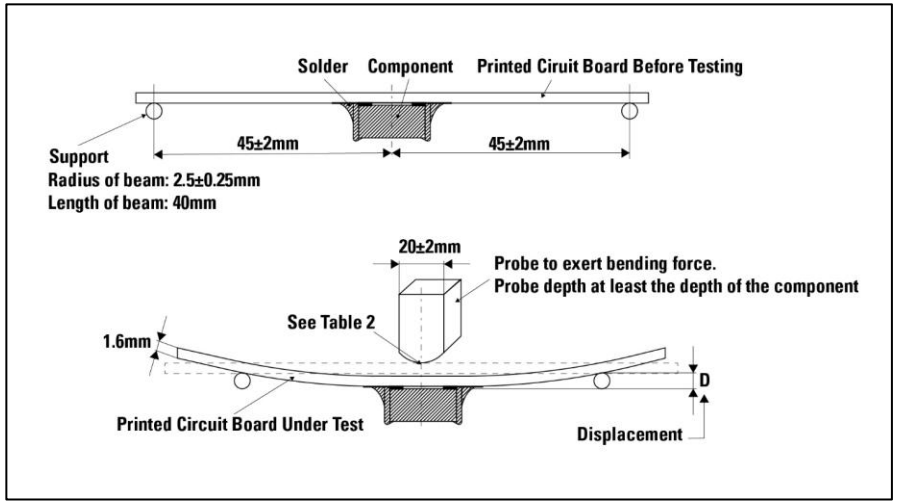
- Current Revision A, June 1, 2000
- Will be reviewed after finishing Q200-002
- Document will be updated 2025/2026

Board Flex Test

Rev A

Q200-005

- Current Revision A, June 1, 2010
- Out for ballot
- Document will be updated 2025



Terminal Strength (SMD) Test

Rev A

Q200-006

- Current Revision A, June 1, 2010
- Out for ballot
- Document will be updated 2025
- Clarified that test addresses the entirety of the component on the PCB, ie the component body, the joint between body and terminals and joint between terminals and PCB instead of just terminations.
- Changed required force from 17.7N to either the use of Table 1 or force in accordance to Supplier recommendation, changed force duration from 60s to 10s

Voltage Surge Test

Rev A

Q200-007

- Current Revision A, June 1, 2010
- Will be reviewed after finishing Q200-002
- Document will be updated 2026

AEC-Q007: Failure Mechanism Based Testing Guidelines for Components Mounted to a Printed Board (BLR)

- Published March 12, 2024
- Concern from Passive Manufactures
  - Q200 addresses Board Level Reliability (BLR)
  - Additional testing/cost
  - Increased liability to manufactures
- Recommendation to remove passive requirements in Q007
- On-going communication with AEC-Q007

The Future

Faster	Consistent	Collaboration
• Introduce new and updated topics to the Market faster	• 3 Year review cycle for documents	• Better communication with other AEC sub-committees