DEPARTMENT OF DEFENSE

TEST METHOD STANDARD

METHOD 306, QUALITY FACTOR (Q)
1. This standard is approved for use by all Departments and Agencies of the Department of Defense.

2. This entire standard has been revised. This revision has resulted in many changes to the format, but the most significant one is the splitting the document into test methods. See MIL-STD-202 for the change summary.

3. Comments, suggestions, or questions on this document should be emailed to std202@dla.mil or addressed to: Commander, Defense Logistics Agency, DLA Land and Maritime, ATTN: VAT, P.O. Box 3990, Columbus, OH 43218–3990. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil.
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1. SCOPE

1.1 Purpose. The purpose of this test is to measure the quality factor, commonly called Q, of electronic parts such as capacitors and inductors. By definition, the factor Q expresses the ratio of reactance to effective resistance of a circuit element. This numerical ratio is considered a "figure of merit" for a reactive component (or a resonant circuit utilizing such components) as it is a measure of the ability of the component (or circuit) to store energy compared to the energy it wastes. For this reason, Q is called "storage factor". Q is thus equal to the inverse of the dissipation factor. Relationship also exists between Q and the properties of a tuned circuit, such as the resonant rise in voltage phenomena. Each of the relationships involving Q mentioned above can be applied to the direct or indirect measurement of Q.

2. APPLICABLE DOCUMENTS

This section not applicable to this standard.

3. DEFINITIONS

This section not applicable to this standard.

4. GENERAL REQUIREMENTS

4.1 Procedure. The quality factor or Q of the specimen shall be measured using a suitable instrument providing an accuracy of measurement within 10 percent of the specified value of Q. Measurements shall be made at the specified frequency. Suitable measurement techniques shall be used to minimize errors due to the connections between the measuring apparatus and the specimen.

5. DETAILED REQUIREMENTS

5.1 Summary. The following details are to be specified in the individual specification:

a. Test frequency (see 4.1).
6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)


Custodians:  Preparing activity:
Army - CR  DLA – CC
Navy - EC  (Project 59GP-2015-036)
Air Force - 85
DLA - CC

Review activities:
Army - AR, AT, AV, CR4, MI, SM, TE
Navy - AS, OS, SH
Air Force - 19, 99
NSA - NS

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