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JJG

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

JJG 183-2017

Replacing JJG 183-1992

**Standard Capacitors
(English Translation)**

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Introduction

The rules based on JJF1001-2011 "common measurement terms and definitions", JJF1002-2010 "national measurement Test procedures for the preparation of rules "and JJF1059.1-2012" measurement uncertainty assessment and presentation "preparation.

This regulation is a revision of JJG 183-1992 "Standard Capacitor". Compared with JJG 183-1992, except for editing in addition to the editorial changes, the main technical changes of this regulation are as follows.

- Increase according to the classification of the standard capacitor accuracy level;
- Remove some unnecessary test items, such as temperature coefficient, insulation resistance, etc .;
- Capacitor test frequency range extended to 1MHz.

This version of the previous version of the release is.

- JJG 183-1978;
- JJG 183-1992.

Standard capacitor verification procedures

1 Scope

This procedure applies to the capacitor range 0.001pF ~ 10mF, the standard frequency range 20Hz ~ 1MHz capacitor the first test, follow-up test and use of inspection.

2 reference documents the regulations reference the following documents.

JJF1023-1991 Commonly used terms of electrical measurement (Trial) GB 9090-1988 standard capacitors for dated references, only the dated version applies to this edition; any undated reference the latest version (including all amendments) applies to this procedure.

3 Terms and measurement units 3.1 capacitance when the charges carried by the two conductors are the same or different sign, the magnitude of the charge is proportional to the potential difference between the two conductors. In the international single SI-bit system, the capacitor unit is Farah, F.

Note:

1. The size of the capacitor, both with the two electrodes of the geometry, size and mutual

position, but also with the dielectric capacitance Rate related.

2. The capacitor units often used in engineering are microfarads [pull] μF or pf [pull] pF.

3.2 capacitor dissipation factor dissipationfactorforcapacitors the capacitor dissipation factor is the loss tangent $\tan \delta$ of the capacitor. In an alternating electric field, the capacitor losses power and the ratio of storage power loss factor, used to determine the quality of capacitors and media.

4 Overview

Standard capacitor is the verification of all levels of capacitance measuring instruments in kind. According to the different media materials, divided into gas Bulk media and solid media standard capacitors, commonly used gas medium with air, nitrogen, argon, etc., solid medium stone British, mica, ceramics, organic media materials, etc .; according to the measurement of different leads, divided into single-port coaxial, three-terminal, Four-terminal and five-terminal standard capacitors.

The structure of the standard capacitor is divided into coaxial, flat type, winding type and multilayer type. Common coaxial and flat type Capacitor diagram shown in Figure 1. Among them. Figure 1 (a), l is the electrode length, d_1 and d_2 are internal and external electrodes Diameter; Figure 1 (b), d is the distance between the plates.