

ICS 29.280

CCS S 35



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

GB/T 25121.2-2018

**Railway applications -- Rolling stock equipment -- Capacitors
for power electronics -- Part 2: Aluminium electrolytic
capacitors with Non-solid electrolyte**

Issued on: December 28, 2018

Implemented on: July 1, 2019

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Foreword

2007 (see 5.1.2, 5.1.3, 5.1.4, 5.3.1, 5.3.2, 5.4.1, 5.5.1, 5.10.4, 5.11, 6.1);

1 Scope

2 Normative references

Foreword

GB/T 25121 "Railway Locomotive Vehicle Equipment Power Electronic Capacitor" is divided into three parts.

--- Part 1. Paper/plastic film capacitors;

---Part 2. Non-solid electrolyte aluminum electrolytic capacitors;

--- Part 3. Electric double layer capacitors.

This part is the second part of GB/T 25121.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part adopts the redrafting method to modify the use of IEC 61881-2.2012 "railway rolling stock equipment power electronic capacitors

Part 2. Non-solid electrolyte aluminum electrolytic capacitors.

This section has a structural change compared to IEC 61881-2.2012, deleting 3.20, which will be completed and used by the manufacturer in 5.2.4.

All or part of the type inspection and factory inspection agreed upon by the household. The supply and demand sides should be in the number of samples used for repeated testing, acceptance criteria, etc.

A unified opinion was reached and written into the contract. " Moved to 5.2.1; in 5.8.2.4 "After the constant test is completed, the capacitor unit (if applicable)

Or the capacitor module shall be tested for insulation between the terminal and the enclosure in accordance with 5.5. " Moved to 5.8.2.6.

There are technical differences between this part and IEC 61881-2.2012. The terms involved in these differences have been passed on the outside margins.

The vertical single line (|) of the position is marked. The specific technical differences and their causes are as follows.

--- Revised the scope, supplemented the content of the standard, to make it perfect, deleted the "Installation and Application Guide see Chapter 9" to avoid duplication

(see Chapter 1);

---About the normative reference documents, this part has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

* Replace IEC 62498-1.2010 with GB/T 32347.1-2015 modified with international standards (see 4.1.2);

* Replace IEC 60721-3-5.1997 with GB/T 4798.5-2007 modified with international standards (see 4.1.3);

* Replace IEC 62498-1.2010 with GB/T 32347.1-2015 modified with international standards (see 4.1.2);

* Replace IEC 62497-1 with GB/T 32350.1 modified with international standards (see 5.5.2, 9.7);

* Replace IEC 60068-2-78 with GB/T 2423.3 equivalent to the international standard (see 5.8.2.4);

* Replace IEC 60068-2-20 with GB/T 2423.28 equivalent to the international standard (see 5.9.1);

* Replace IEC 60068-2-21.2006 with GB/T 2423.60 equivalent to the international standard (see 5.9.1);

* Replace IEC 61373.2010 with GB/T 21563 modified with international standards (see 5.9.3);

* Replace IEC 60384-1.2008 and IEC 60384-4 with the latest versions of IEC 60384-1.2016 and IEC 60384-4.2016.

2007 (see 5.1.2, 5.1.3, 5.1.4, 5.3.1, 5.3.2, 5.4.1, 5.5.1, 5.10.4, 5.11, 6.1);

---Modified terms and definitions 3.1 capacitor components (or components), 3.7 power electronic capacitors, 3.16 operating temperature, 3.24 capacitors

The equivalent series resistance, consistent with the other two parts, removes the 3.20 case temperature rise, which is not used in this part;

--- Modified 3.17 "ambient temperature ambienttemperature" for "working ambient temperature operatingambienttempera-

"ture" to conform to the original definition;

--- Revised the altitude requirements in 4.1.2, 4.2, 9.3.2, from 1400m to 2500m, to adapt to China's national conditions;

--- Revised the "climate ambient temperature" of 4.1.3 to "ambient temperature" to comply with the description of GB/T 4798.5-2007;

--- Amend the note of 5.1.5 to the body because of the inclusion requirements;

--- Removed the description of the "consideration" of the surge discharge test in 5.7 to clarify the necessity of the test assessment;

--- Increased the exposure duration requirement in 5.8.1.4 to improve the test assessment requirements;

--- Modified the constant damp heat test conditions of Table 2, from the original "temperature 40 ° C" to "temperature (40 +/- 2) ° C", "humidity 93%

RH" is adjusted to "humidity (93 +/- 3)% RH" to improve test operability;

--- Increased the weighing requirements in the general inspection in 5.9.2 to improve the test assessment requirements;

--- Revised the durability test voltage in 5.10.4, adjusted from the original "DC voltage UR" to "DC voltage superimposed ripple voltage, straight

The peak value of the current voltage and ripple voltage does not exceed the rated voltage UR (the ripple voltage and frequency should be agreed between the supplier and the buyer).

Improve the test assessment requirements;

--- Revised the conditions given in the 5.12 flame retardant test severity level, from the original "by the manufacturer" to "by the supply and demand sides

Set" to improve test operability;

--- Revised the "potential of the metal shell of the capacitor" in the grounding of the casing in 7.2 as "potential of the metal fastener of the capacitor" to meet the aluminum

The practical application of electrolytic capacitors (the aluminum electrolytic capacitor metal casing is not exposed, and the potential is equal to the negative pole, and cannot be grounded.

Metal fasteners for fixed capacitors shall be grounded where applicable);

--- Removed the description of "A Long Off Time AC Application" in 9.10, which is not applicable to this part of the capacitor.

This section also made the following editorial changes.

--- Amend the clause "IEC 61881-1.2010,3" cited in 3.5 to "IEC 61881-1.2010, 3.4";

--- Revised the clause "IEC 60384-1.2008, definition 2.2.16" cited in the note to 3.11 as "IEC 60384-1.2016,

Meaning 2.2.25.1";

--- Revised the clause "IEC 60384-1.2008, definition 2.2.24" cited in the note to 3.23 as "IEC 60384-1.2016,

Meaning 2.2.32";

--- Removed the note in 5.1.2, and repeated with the content of 5.1.2;

--- Revised the document "IEC 60384-4.2007" cited in 5.1.3 as "IEC 60384-1.2016";

--- Modified the error of the corresponding clause in Table 1 of IEC 61882-2.2012, 5.11.1 should be 5.11;

--- Revised the name of Appendix A, consistent with the content, deleted the number and title of A.1, there is no A.2 in this part.

1 Scope

This part of GB/T 25121 specifies the use conditions, quality requirements and inspection, overload, safety requirements and standards of power electronic capacitors.

Guidelines for the identification, installation and application.

This section applies to DC aluminum electrolytic capacitors (units, modules or groups) used in power electronic equipment for rail vehicles.

Note. The capacitor application examples specified in this section are DC filter capacitors.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 2423.3 Environmental Test Part 2. Test Method Test Cab. Constant Damp Heat Test (GB/T 2423.3-2016,

IEC 60068-2-78.2012, IDT)

GB/T 2423.22-2012 Environmental testing - Part 2. Test methods Test N. Temperature change (IEC 60068-2-14.

2009, IDT)

GB/T 2423.23-2013 Environmental testing - Part 2. Test method test Q seals (IEC