



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

GB/T 5095.2503-2021

**Electromechanical components for electronic equipment -
Basic testing procedures and measuring methods - Part 25-3:
Test 25c: Rise time degradation**

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Foreword

GB/T 5095 "Basic test procedures and measurement methods for electromechanical components for electronic equipment" is divided into several parts according to the test methods.

Part 25 of GB/T 5095 is a signal integrity test. The parts that have been released or planned to be released are as follows.

- Part 25-1. Test 25a. Crosstalk ratio;
- Part 25-2. Test 25b. Attenuation (insertion loss);
- Part 25-3. Test 25c. Rise time decay;
- Part 25-4. Test 25d. Transmission delay;
- Part 25-5. Test 25e. Return loss;
- Part 25-6. Test 25f. Eye diagram and jitter;
- Part 25-7. Test 25g. impedance, reflection coefficient and voltage standing wave ratio

(VSWR);

--- Part 25-9. Signal Integrity Test Test 25i. Alien Crosstalk.

This part is part 25-3 of GB/T 5095.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

The translation method used in this part is equivalent to the use of IEC 60512-25-3.2001 "Connector Test and Measurement for Electronic Equipment Part 25-3"

Minutes. Test 25c. Rise time decay".

This section has made the following editorial changes.

---The name of the standard is revised from "Test and Measurement of Connectors for Electronic Equipment Part 25-3. Test 25c. Rise Time Decay" to

"Basic test procedures and measurement methods for electromechanical components for electronic equipment-Part 25-3. Test 25c. Rise time decay".

1.1 Scope and purpose

This part of GB/T 5095 applies to electrical connectors, sockets, cable assemblies or interconnecting systems.

This section describes how to measure the influence of a sample on the rise time of a signal passing through it.

1.2 Terms and definitions

The following terms and definitions apply to this document.

1.2.1

Rise time degradation

When the sample is inserted into the transmission channel, it reaches the theoretically ideal (zero rise time) voltage step rise time increment (see Figure 1). use

The calculation formula for the attenuation of the Gaussian signal from 10% to 90% of the rise time is shown in equation (1).

$$Tr,d = (Tr)^2 - (Tr,m)^2 \quad (1)$$

Where.

Tr,d ---rise time decay;

Tr --- the rise time of the measurement;

Tr,m---measurement system rise time.

1.2.2

Measurement system rise time measurement system rise time

Rise time measured by a device with no sample installed and with filtering (or normalization) function. Usually, the measurement is from 10% to 90%

The rise time of the level (see Figure 1).

1.2.3

Sample environment impedance

The impedance caused by the device on the sample signal wire. The impedance is determined by the transmission line, terminal resistance, attached receiver and signal source.

And the parasitic effects of the device.

1.2.4

Rise time

The time required for a voltage step to occur is usually measured from the initial value and the final value of the 10% to 90% level rise time.

2.1 Equipment

Pulse generator and oscilloscope, time domain reflectometer (TDR) or with a measurement system whose rise time is less than or equal to the measured rise time

70% of other suitable equipment.