



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

GB/T 5095.2504-2021

**Electromechanical components for electronic equipment -
Basic testing procedures and measuring methods - Part 25-4:
Test 25d: Propagation delay**

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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 25-4 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 IEC 60512-25-4.2001 "Connector Test and Measurement for Electronic Equipment Part 25-4"

Minutes. Test 25d. Transmission delay.

This section has made the following editorial changes.

---The name of the standard is changed from "Test and Measurement of Connectors for Electronic Equipment Part 25-4. Test 25d. Transmission Delay" to "Electrical

Basic test procedures and measurement methods for electromechanical components for sub-equipment. Part 25-4. Test 25d. Transmission delay.

1.1 Scope and purpose

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

This section describes the method of measuring the time required for a digital signal to be transmitted from a specified location to a second specified location.

1.2 Terms and definitions

The following terms and definitions apply to this document.

1.2.1

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 10%~

90% level rise time (see Figure 1).

1.2.2

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 or signal source

And the parasitic effects of the device.

1.2.3

Transmission delay

The time required for the signal to travel between two specified locations in the interconnected system (see Figure 2).

2.1 Equipment

2.1.1 Pulse generator and oscilloscope, time domain reflectometer (TDR) or a measuring system whose rise time is less than or equal to the measured transmission delay

Other suitable equipment.

2.1.2 Probe

If a probe is used, the probe should have suitable rise time performance and circuit load characteristics (resistance and capacitance).

2.2 Device

Unless otherwise specified in the reference document, the environmental impedance of the sample should match the impedance of the test equipment. Generally, for single-ended measurements, the resistance

The impedance is 50ohm, and the differential measurement is 100ohm. The schematic diagram of the device and equipment is shown in Appendix A.

2.2.1 Method A, single-ended

The device should be able to excite one signal line at a time. The excitation circuit should be terminated with the sample environmental impedance according to one of the methods in Figure A.2.except