

JIS

JAPANESE INDUSTRIAL STANDARD

**Measuring methods for ferrite
cores for
microwave device**

JIS C 2565—1992

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by

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Measuring methods for ferrite cores for
microwave device

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1. Scope

This Japanese Industrial Standard specifies testing methods for ferrite cores to be used for microwave devices in which gyromagnetic phenomenon is utilized (hereafter referred to as cores).

Remarks: The following Standards are cited in this Standard:

JIS B 7725-Vickers Hardness Testing Machines

JIS C 2501-Methods of Test for Permanent Magnet

JIS C 3202-Enameled Winding Wires

JIS Z 2244-Method of Vickers Hardness Test

JIS Z 8703-Standard Atmospheric Conditions for Testing

2. Definitions and symbols

For the purpose of this standard the following principal definitions and symbols shall apply.

- (1) saturation magnetization M_s The maximum magnetization which can be achieved by a core.
- (2) complex permittivity $\underline{\epsilon}$ The complex quantity given below which shows the relation between vector quantity expressing a.c. electric displacement and vector quantity expressing a.c. electric field strength.

$$\underline{\epsilon} = \frac{1}{\epsilon_0} \left(\frac{\underline{D}}{\underline{E}} \right) \dots\dots\dots (1)$$

where, $\epsilon_0 = 8.854 \times 10^{-12}$: absolute permittivity of vacuum (F/m)

\underline{E} : a.c. electric field strength in vector expression
(V/m)

\underline{D} : a.c. electric flux density in vector expression
(C/m²)

If real component and imaginary component of complex permittivity are denoted as ϵ' and ϵ'' respectively, then $\underline{\epsilon}$ is expressed as follows:

$$\underline{\epsilon} = \epsilon' - j\epsilon'' \dots\dots\dots (2)$$

- (3) complex permeability $\underline{\mu}$ The complex quantity given below which shows the relation between vector quantity expressing a.c. magnetic field strength and vector quantity expressing a.c. magnetic flux density.