KEYSIGHT TECHNOLOGIES (AGILENT HP)

16453A

The Keysight 16453A is a dielectric material test fixture designed for high-frequency permittivity and loss tangent measurements of solid materials from 1 MHz to 1 GHz.

SPECIFICATIONS

General

Interfaces	APC-7 (7 mm)
Included Accessories	Carrying case, Teflon calibration plate, Shorting plate, Tweezers

Physical

Operating Temperature	-30 °C to +85 °C °C
Dimensions (W×H×D)	130 mm × 50 mm × 80 mm mm
Weight	0.6 kg kg
Electrode Diameter	7 mm

Electrical Specifications

Frequency Range	1 MHz to 1 GHz
Maximum AC Voltage	±42 V peak max. (AC + DC)
Maximum DC Bias Voltage	±42 V peak max. (AC + DC)

DUT Compatibility

Compatible Material Type	Solid sheet or film
Minimum Sample Diameter	15 mm
Sample Thickness Range	0.3 mm to 3 mm

Performance

Measurement Method	Parallel plate method
Typical Permittivity Range	1 to 40
Measurement Parameters	Relative permittivity (εr'), loss tangent (tan δ)
Typical Accuracy (Permittivity)	±5% (typical, at 1 GHz, sample thickness = 1 mm, εr' = 10)
Typical Accuracy (Loss Tangent)	±0.005 (typical, at 1 GHz, sample thickness = 1 mm, εr' = 10, tan δ = 0)

Instrument Connections

Instrument Connector	APC-7 (7 mm)

Instrument Compatibility

Compatible Instruments	Keysight E4991A, E4991B, 4291A, 4291B

Physical and Environmental

Storage Temperature Range	-40 °C to +85 °C

Calibration and Compensation

Calibration Standards Included	Shorting plate, Load plate

Environmental

Operating Humidity	20% to 80% RH (wet-bulb temperature ≤ 29 °C, non-condensing)
Storage Humidity	20% to 80% RH (wet-bulb temperature ≤ 29 °C, non-condensing)

TECHNOLOGY

Parallel plate method

APPLICATIONS

Dielectric material permittivity and loss tangent measurement

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