

Up to 3 GHz (7 mm): SMD *continued*

16196A Parallel electrode SMD test fixture



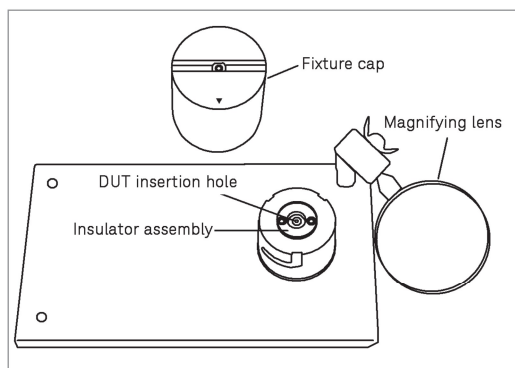
Terminal connector: 7 mm
DUT connection: 2-Terminal
Electrical length: 26.2 mm
Dimensions (approx.):
 140 (W) x 48 (H) x 78 (D) [mm]
Weight (approx.): 250 g
Additional error:

Type of error	Impedance
Proportional error	$1.0 \times f^2$ [%]
Open repeatability	$5 + 40 \times f$ [μ S]
Short repeatability	$30 + 125 \times f$ [m Ω]

f: frequency [GHz]



E4982A with 16196A



Fixture overview

Description: This test fixture is designed for impedance evaluations of parallel electrode SMDs. It achieves stable frequency characteristics up to 3 GHz and provides highly repeatable measurements. The applicable SMD size code is 0603 (inch)/1608 (mm).

Applicable instrument: E4982A, E4990A + 42942A*, E4991B, E5061B-3L3/3L4/3L5 with Opt. 005 + 16201A

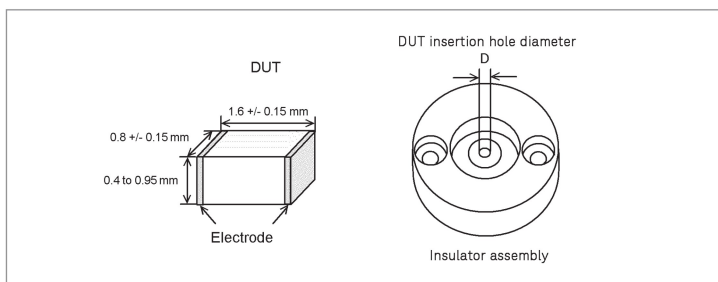
* Option E4990A-120 is required

Frequency: DC to 3 GHz

Maximum voltage: ± 42 V peak max. (AC +DC)

Operating temperature: -55 to $+85^\circ\text{C}$

DUT size: The applicable SMD size is 0603 (inch)/1608 (mm). For details, see the figure below.



The 16196A is furnished with three different insulator assemblies, since any gaps between the DUT and the cylindrical insulator will result in improper positioning and subsequent measurement errors. Select an insulator assembly that reduces the gap the most. See the table below for dimensions of the insulator assemblies.

	Hole diameter of insulator assembly (mm)	SMD case size examples Length, width, height (mm)
16196A	ϕ 1.34	1.6 x 0.8 x 0.8
	ϕ 1.14	1.6 x 0.8 x 0.6
	ϕ 1.08	1.6 x 0.8 x 0.5

Furnished accessories:

Description	P/N	Qty.
Operation and service manual	16196-90040	1
Insulator assembly ϕ 1.34 mm	16196-60112	1
Insulator assembly ϕ 1.14 mm	16196-60113	1
Insulator assembly ϕ 1.08 mm	16196-60114	1
Open plate	16196-29002	1
Short plate	16196-29026	1
Push ring	16196-24004	1
Magnifying Lens ¹	16193-60002	1
Tweezers	8710-2081	1
Wrench	8710-0909	1
Cleaning rod	5182-7586	1
Carrying case	16196-60150	1

1. Opt. 16196A-710 only



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16196A Parallel electrode SMD test fixture *continued*

Options:

16196A-710 : Add the magnifying lens and tweezers

To maintain adequate measurement performance, keep the electrodes and the short plate in good condition. Contaminants and abrasion on these parts considerably affect measurement results, especially for low value measurements. Periodic fixture cleaning and part replacement is recommended to avoid deterioration of measurement performance. The 16196x fixtures are designed with simplicity in mind, so that an operator can easily replace parts. Spare parts, which are likely to be abraded, are supplied with the 16196U Maintenance Kit.

16196U Maintenance kit

Opt. 16196U-010: Upper electrode, 5 piece set (common to 16196A/B/C models)

Opt. 16196U-100: Short plate for 0603 (inch)/1608 (mm) size, 5 piece set (for 16196A)

Opt. 16196U-110: Lower electrode, 5 piece set (for 16196A)

Compensation and measurement: First of all, install the appropriate insulator assembly into the fixture. Then, perform compensation. Open and short compensations are recommended in combination with the electrical length compensation before measurement. The fixture's electrical length must be entered into the electrical length compensation function of the measurement instrument first. Next, open compensation is performed by placing the furnished open plate on top of the insulator assembly. Short compensation is performed by placing the furnished shorting plate on top of the insulator assembly. After performing open and short compensations in combination with the electrical length compensation, the DUT is inserted into the test fixture. Once the measurement of the DUT is complete, remove the DUT from the fixture, by using the furnished push ring. The following figures show how compensation and measurement is performed.

