

Keysight 8490D Coaxial Attenuators

Technical Overview

dc to 50 GHz 2.4 mm connectors





Introduction

The Keysight Technologies, Inc. 8490D family is a line of precision fixed coaxial attenuators with performance specified up to 50 GHz. These attenuators use the 2.4 mm coaxial connector, which exhibits excellent performance from dc to 50 GHz. The 8490D family has attenuation values of 3, 6, 10, 20, 30, and 40 dB.

The Keysight 8490D family of 2.4 mm fixed coaxial attenuators is assembled and tested with the same meticulous care as their lower frequency counterparts: the Keysight 8491, 8492, and 8493 families. These attenuators are all tested on Keysight precision analyzers to assure specifications over the full frequency range.

Applications

Ruggedness, reliability, and small size make these attenuators useful both on the bench and in systems applications. With their accuracy and low SWR they are ideally suited for extending the range of sensitive power meters for higher power measurements. The same characteristics lend themselves to applications such as calibration standards and RF substitution measurements. With their broad dc to 50 GHz frequency range and reasonable cost, general applications such as the reduction of power level to sensitive components and instrumentation systems are attractive and appropriate uses for these attenuators.

Use of test data is an effective means of reducing measurement uncertainty at RF and microwave frequencies. This data is available for the 8490D as Option 890. Data is generated by an automatic network analyzer and is supplied as a tabulated list of attenuation and SWR at every 400 MHz from 400 MHz to 50 GHz. Measurements are directly traceable to NIST standards, and feature very low uncertainties.

Specifications and Ordering Information

	Attenuation (dB)			SWR (Maximum)			Atten. Data Uncert. (dB)
	Min. (GHz)	Max. (GHz)	Max. (GHz)	(GHz)	(GHz)	(GHz)	(GHz)
8490D-003	0 to 50	0 to 26.5	26.5 to 50	0 to 26.5	26.5 to 40	40 to 50	0.4 to 50
	2.5	3.9	4.8	1.15	1.25	1.45	±0.6
8490D-006	5.4	6.9	7.8	1.15	1.25	1.45	±0.6
8490D-010	9.4	10.9	11.3	1.15	1.25	1.45	±0.6
8490D-020	19.2	21.3	21.7	1.15	1.25	1.45	±0.6
8490D-030	29.2	31.3	31.7	1.15	1.25	1.45	±0.8
8490D-040	38.2	42.5	42.5	1.08	1.15	1.25	±1.7

Specifications

Frequency range	dc to 50 GHz
Impedance (nominal)	50 μ
Connector	2.4 mm
Power (maximum)	1 W average; 100 W peak

Environmental

Temperature

Operating	-5°C to +50°C
Non-operating	-55°C to +75°C

Altitude

Operating	15,000 ft
Non-operating	50,000 ft

Humidity Cycling, 5 days, +40°C @ 95% R.H.

Vibration 0.015 in., 5-55-5 Hz, 14 min., 3 axes

Shock 100 g, 1 to 2 ms, 3 times, 3 planes

Dimensions

Length	27 mm (1.06 in.) 3, 6, 10, 20 dB
	29 mm (1.14 in.) long 30, 40 dB
Diameter	8 mm (.312 in.)

Ordering information

Coaxial attenuator

8490D dc to 50 GHz, 2.4 mm coaxial connector

Options

To add options to a product, use the following ordering scheme:

Model	8490D
Model options	8490D-opt#1 8490D-opt#2

Attenuation (must choose one)

8490D-003	3 dB attenuation
8490D-006	6 dB attenuation
8490D-010	10 dB attenuation
8490D-020	20 dB attenuation
8490D-030	30 dB attenuation
8490D-040	40 dB attenuation
8490D-UK6	Calibration data