



Agilent Technologies

Innovating the HP Way

HF Bias Networks Datasheet

Agilent 11612T/V-Kxx High-Frequency Bias Networks

for Accurate DC- and S-parameter Measurements

To complement your Agilent PNA series network analyzers, Agilent Technologies offers the Agilent 11612T/V-Kxx family of bias networks. The bias networks allow you to conveniently connect a device to the measurement system and accurately measure DC and S-parameters while suppressing bias oscillations. The bias network maximum current rating is 2 Amps.

Accurate DC and S-Parameter measurements

Prior to the Agilent 11612T/V-Kxx it was necessary to apply DC at the bias tee inputs located at the rear of the network analyzer test set. While this is still a good method for applying bias to circuits such as amplifiers, it introduces two problems when measuring DC parameters of semiconductor devices. First, for high-current devices, DC losses through the test set and RF cables result in a significant offset voltage error. Second, the accuracy of low-current DC measurements is degraded due to leakage through an internal 1 MOhm bleed resistor in the test set. The 11612T/V-Kxx bias networks overcome these problems by applying DC as close to the device as possible and by bypassing the internal shunt resistor.

Simple connection between the device and measurement system

The Agilent 11612T/V-Kxx bias networks provide a simple connection between the measurement system and the device under test. The DC connections are applied through force and sense triaxial connectors that take advantage of the Kelvin sensing capability of the Agilent E5270B 8-slot parametric measurement mainframe with E5281B medium or E5280B high power source/monitor units or the 4156C precision semiconductor parameter analyzer and 41501B SMU and pulse generator expander. This provides the highest DC accuracy while eliminating the need to use patch panels or adapter connectors.

Built-in oscillation suppression network

To avoid potential low-frequency device oscillations, the bias networks also contain a resistive / capacitive bias-oscillation suppression network.



Specifications and Ordering Information:

Agilent Model Number	11612T-K10/K20 ¹	11612T-K12/K22 ¹	11612V-K11/K21 ¹	11612V-K61/K62 ¹
Frequency Range	45 MHz to 26.5 GHz	400 MHz to 26.5 GHz	45 MHz to 50 GHz	400 MHz to 50 GHz
Connector Type: RF input & output DC force, sense, ground	3.5mm (f) Triaxial (f)	3.5mm (f) Triaxial (f)	2.4mm (f) Triaxial (f)	2.4mm (f) Triaxial (f)
Maximum Current	0.5 Amps	2 Amps	0.5 Amps	2 Amps
Maximum Voltage	40 Volts	40 Volts	40 Volts	100 Volts
Max. RF Power	2 Watts (+33 dBm)	2 Watts (+33 dBm)	2 Watts (+33 dBm)	2 Watts (+33 dBm)
U.S. List Price ²				

Supplemental Characteristics:

Footprint: 105 mm x 70 mm (3.5 in x 2.7 in)

Height: 50 mm (2 in)

Net Weight: 370 g (0.8 lb)

Optional Accessories:

- 11612T-K32 or K33 Pair of mounting brackets for simple connection to Cascade Microtech, Inc. probe positioners. The brackets can be attached to the bias networks, which are then mounted onto the probe positioners (CM part number 101-543). U.S. list price.²
- 85122-20013 RF cable, 15 cm, with male 3.5 mm connectors for connecting a 26.5 GHz bias network to a fixture or probe.
- 85107-20004 RF cable, 9 inch, with male 2.4 mm connectors for connecting a 50 GHz bias network to a fixture or probe.

¹ Special option number K1x refers to port 1 bias network, K2x refers to port 2 bias network

² Contact your local Agilent Technologies Sales Representative for current price quotes. Price is subject to change without notice.