

Keysight and Yokowo Co., Ltd. PENPROBE.CA RF Probe-test Solution up to 110GHz

Recently, higher frequency RF test requirements are increasing rapidly based on the development of high speed semiconductor devices. 67GHz VNA with 500GHz or 1THz extenders, already commercially available. To cope with these measurement equipment advancements, YOKOWO decided to provide new RF probe-test solutions for our customers. Let us introduce our product "PENPROBE.CA" below.

PENPROBE.CA

PENPROBE.CA is designed for RF probe-test with coaxial cable system. Its probe-contactors are made of photolithographic plated Ni on the laminated polyimide film, thus realizing good contactor co-planarity, durability and RF performance such as insertion loss/ return loss. PENPROBE.CA has various frequency range models and probe-contactor configurations aiming for versatile RF probe-testing.

- 2.92mm/K connector DC-40GHz
- 2.4mm connector DC-50GHz
- 1.85mm connector DC-67GHz
- 1mm connector DC-110GHz
- Probe-contactor GSG, GSGSG, GS, SG
- Pitch 75um and 150um
- Touchdown angle 30 and 45 degree
- Bias-Tee equipped for 75-110GHz model



30 degree



45 degree

PENPROBE.CA's Features

PENPROBE.CA series embodies several favorable features to support our customers. PENPROBE.CA consists of Probe-unit and probe body.

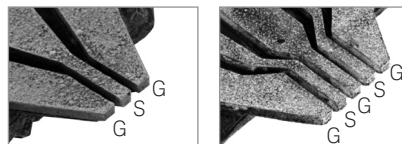
PENPROBE.CA's Probe-unit is detachable from its probe body, thus offering a low cost solution by using the probe body for different frequency testing. For this purpose, Probe-unit is also available as a separate item.

Another feature is the installation easiness of PENPROBE.CA thanks to the good coplanarity of plated Ni-contactors. This advantage will become valuable especially in the GSGSG type contactors.

Also a Bias-Tee can be used with the 110GHz use PENPROBE.CA, thus minimizing the insertion loss compared to the ordinary wide-band Bias-Tee. We'll expand this Bias-Tee inclusion for the lower frequency PENPROBE.CA in future.

Contactor Coplanarity

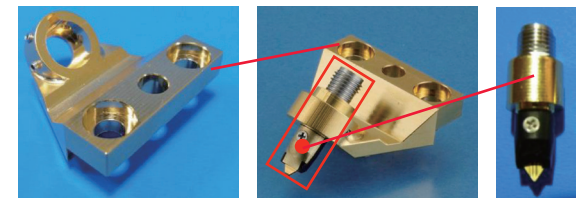
PENPROBE.CA's probe-head (PEN probe-head) consists of coplanar waveguide and Ni-contactors. Coplanar waveguide is fabricated of laminated polyimide film and metal film, where coplanar waveguide pattern is made by photolithographic process. Ni-contactor is made by plating process at the edge of this coplanar waveguide, so the contactors' coplanarity is excellent. Thanks to the good coplanarity of plated Ni-contactors, the installation of PENPROBE.CA to the probe station is quite easy. This advantage will become valuable especially in the GSGSG type contactors.



Detachable Probe-unit

All the Probe-units in the PENPROBE.CA are detachable from the probe body. Each Probe-unit in Form A (30 degrees touchdown angle) can be dismounted from the probe body and replaced by different contactor configuration Probe-unit among GSG, GS, SG with various pitch. For different frequencies Probe-unit can also be replaced among 40GHz, 50GHz, 67GHz and 110GHz. Please note that Probe-unit of Form A (30 degrees touchdown angle) can't be mounted on the Form B (45 degrees touchdown angle) probe body, Form C (dual, 30 degrees) nor Form D (dual, 45degrees). This relationship is valid for other Form's Probe-unit as well.

The detachable probe-unit system offers a low cost test solution to our customers. Once you buy Form A type PENPROBE.CA of a given part number, you can use its probe body by purchasing a different type Probe-unit for cost cut. For this purpose, Probe-unit is also available as a separate item.



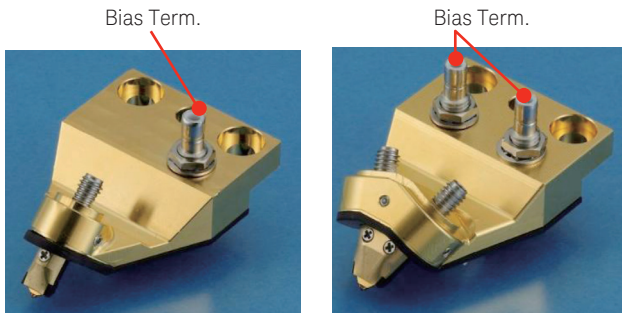
Probe Body

Probe Unit

PENPROBE.CA

Bias-Tee

Bias-Tee can be used with the 110GHz use PENPROBE.CA, thus minimizing the insertion loss compared to the ordinary wide-band Bias-Tee. This Bias-Tee is designed in the PEN probe-head which is made of laminated polyimide film and metal film. Bias-Tee equipped PENPROBE.CA can be chosen both in GSG and GSGSG contactor configurations. We'll expand this Bias-Tee inclusion for the lower frequency PENPROBE.CA in future.

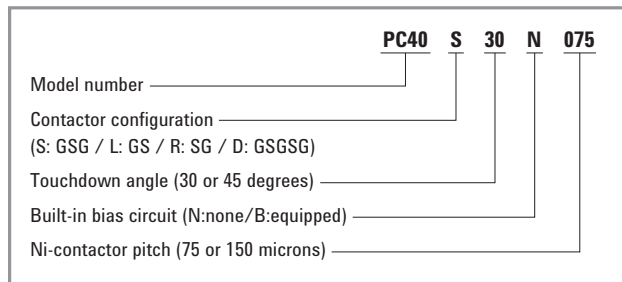


PC110S45B075

PC110D45B075

Ordering Information

Model numbering convention of PC40 series is as follows:



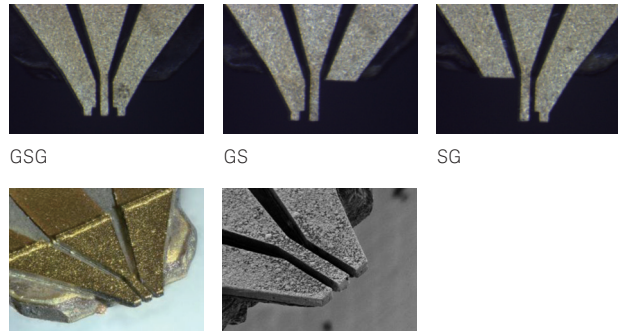
When ordering Model PC40 series, please use the above model numbering convention.

Contactor Configuration and Pitch

Configuration: Specify GSG, GS, SG and GSGSG for contactor configurations where S is the signal contactor and G is the ground contactor. D(GSGSG) type is still under development.

- Generally, GS and SG contactor types are used up to 10GHz.

Pitch: Specify ground (G) center to signal (S) center spacing as 75 or 150 microns for standard products. Please inquire if any specific spacing is required.



Photolithographic plated Ni-contactor of Model PC40 series.



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