MWRF-40A

MICROWAVE PROBE



High-precision RF measurements for your most demanding applications.

Designed to meet the requirements of microwave characterization environments, our coaxial microwave probes enable reliable, accurate, and repeatable radiofrequency measurements directly on your semiconductor components.

They provide a high-performance solution for the electrical and RF characterization of active and passive components, whether in a research laboratory or an industrial setting.

Using low loss coaxial techniques, the MWRF-40A achieves an insertion loss of less than 0.8 db and a return loss of greater than 18 db through 40 GHz.

With its individually spring loaded, Beryllium-Copper, Tungsten, or Nickel tips, the Model 40A provides reliable contacts, even when probing non-planar structures. This reliable low resistance contact is one of the keys to providing highly repeatable measurements.

The MWRF-40A microwave probe also provides direct viewing of the probe tips for accurate positioning. It can be mounted in various adaptors for use with standard microwave probe stations or attached to thin blades for use with dc probe needles on a probe card or multi-contact wedge. Custom mounts are available as well.

Each MWRF-40A has patented, independently spring loaded tips which ensure a reliable contact to the probing surface. Because the tips are flexible they minimize circuit damage, increase probe life, and most

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importantly, provide a reliable individually spring loaded contact for each point. With a small amount of overdrive, the point scrubs the surface to make a reliable contact free of dust, dirt, and oxide contamination. A well-appreciated feature of the MWRF-
40A is the ability to view the exact contact area which eases probe placement and allows for the precise positioning necessary for good LRM calibrations. The flexible tips even allow probing of non-planar surfaces such as ceramic substrates and laser diode structures.



The MWRF-40A uses a precision miniature 50 ohm coaxial cable from the probe tips to the connector interface. The coaxial design provides lower loss and less radiation than coplanar designs.
The miniature coaxial cable is fabricated from flexible Beryllium-Copper which greatly improves the probe's durability. It's sister probe, the MWRF-40M has the lowest insertion loss in the industry–less than 0.5db.

Performance data:

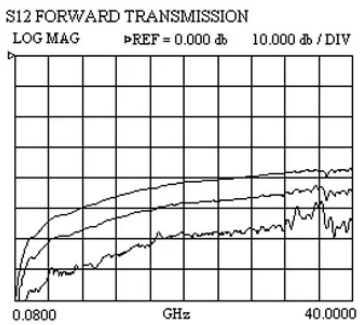
GSG configuration

Insertion loss	Less than 1.0 db to 40 GHz (0.70 db typical)
Return loss	Less than 30 db to 4 GHz (35 db typical) Less than 20 db to 26 GHz (23 db typical) Less than 18 db to 40 GHz (20 db typical)
Crosstalk	Less than 38 db to 40 GHz

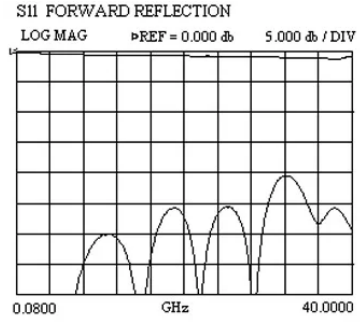
Crosstalk is measured using two probes contacting a bare sapphire substrate 100 microns apart.

GS or SG configuration

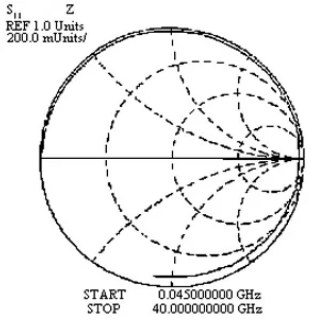
Insertion loss	Less than 2.0 db to 40 GHz (1.6 db typical)
Return loss	Less than 30 db to 4 GHz Less than 15 db to 26 GHz Less than 12 db to 40 GHz



Crosstalk performance of two MWRF-40A-GSG-150-P Picoprobes while contacting a bare sapphire



Typical uncalibrated performance of a MWRF-40A-GSG-150-P Picoprobe. The top trace is the



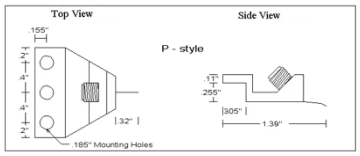
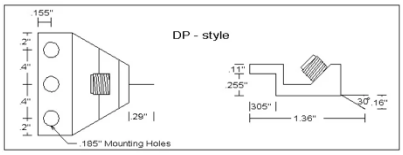
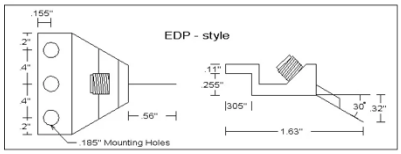
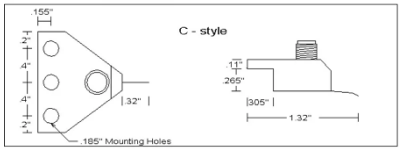
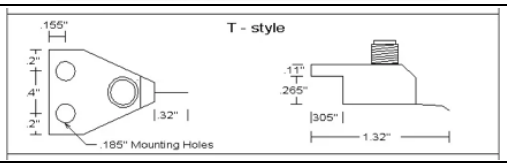
A Smith Chart showing the calibrated response of a MWRF-40A -GSG-150-P while contacting a

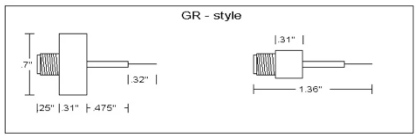
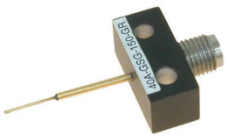
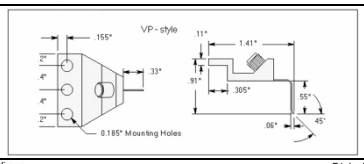
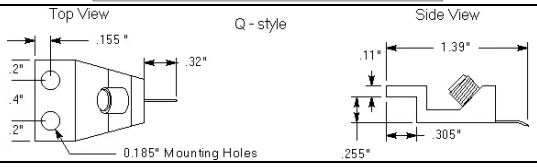
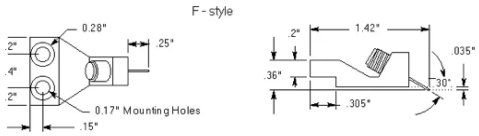
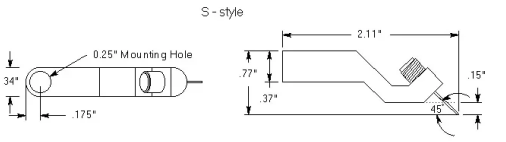
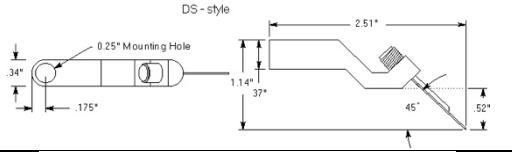
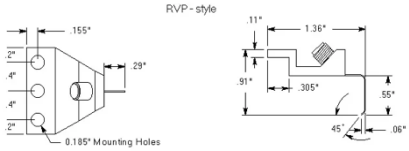
substrate with spacings of 100, 200, and 400 microns.	round trip return loss into a short which is twice the probe's insertion loss. The bottom trace is the return loss into a 50 ohm load.	coplanar offset short. The LRM method was used for calibration.

Specifications:

Frequency	DC to 40GHz
Connector type	K (2.9mm)
Configuration	GSG, GS or SG
Pitch range	Any from 25 to 2540µm
Tips material	BeCu (std), Tungsten or Nickel
Maximum voltage	50V
Maximum current	2A – (HC version: 7A)
Maximum temperature	50°C – (HT version: 260°C)
Option	No magnetic

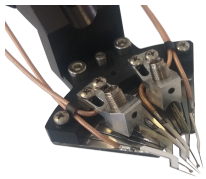
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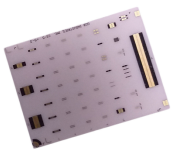
	
	
	
	
	
	
	

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