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ProbePoint™*xx* - Test Interface Circuits

J MICROTECHNOLOGY offers a family of thin film components to adapt the benefits of coplanar waveguide wafer probe test methods to the measurement of microstrip circuits. These components enhance productivity in product development and product assurance testing for semiconductors and packages. Test capability is also improved with the availability of "Kelvin" test points and broadband 10X signal sample points on adapter substrates. Some versions are available with series resistors to provide bias current stability. Calibration structures substrate and companion printed calibration kits are available for all adapter substrate configurations.

The problem:

The cost of preparing test samples for design verification or for "Group A" product testing is high when the device cannot be measured on wafer. The accuracy and repeatability of test is compromised when connectorized fixtures are used. The direct measurement of voltages at the device under test are difficult and waveform monitoring is nearly impractical.

The products:

The products are test adapter and interface circuits. Each adapter circuit type primarily transforms a signal path from coplanar waveguide to microstrip transmission mode. Additional features of Series resistors and DC and signal sense are present on some product types. The products are targeted at the GaAs MMIC and transistor semiconductor market segments. Physically they are available in 5, 10 and 15 mil thickness, making them compatible with a wide range of packages and high performance microwave semiconductors. The use of these devices results in lower cost test fixturing and higher quality product testing.

Products available include the following types in 5 and 10 mil versions. A description of the products can be found in the following pages.

ProbePoint™ Part Number			Description
5 mil	10 mil	15 mil	
0501	1001	-	Coplanar to Microstrip with a Kelvin sense point. The Kelvin sense point can be probed with a needle probe for DC voltage monitoring or with a G-S coplanar probe as a 20X signal sense point.
0502	1002	-	Coplanar to Microstrip with a Kelvin sense point. The Kelvin sense point can be probed with a needle probe for DC voltage monitoring or with a G-S coplanar probe as a 10X signal sense point.
0503	1003	1503	Coplanar to Microstrip.
-	-	1505	Coplanar to Microstrip with precision series resistor for bias stability
0504	-	-	Load Chip
0505			
CM05	CM10 CM12	CM15	Calibration substrate for the test adapter and interface circuit products. This substrate contains the standards necessary to calibrate using any of the normally used techniques, including SOLT, TRL, LRM, LRL. All adapter circuit patterns are represented which allows direct precision calibration of the test environment.
0510	-	-	Microstrip Transmission Lines
0520			
0530			

Application:

In use, the package, GaAs MMIC or Transistor would be mounted, either singly or in an array, on a carrier substrate/heat sink with the test adapter and interface circuits adjacent to each input bonding pad. This assembly can be contacted in a coplanar probing test environment. The result is that "microstrip" semiconductor chips and passive components can be probed with "coplanar" probes on low cost fixtures.