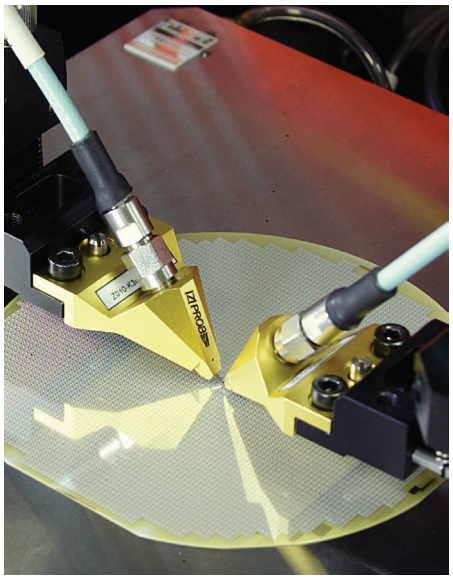
Cascade Microtech, Inc.

SPECIFICATION SHEET



High-stable HF wafer contact ideal for automated wafer testing

|Z| Probe®

High-Frequency Wafer Probe (GS/SG 10 GHz)

A Ground-Signal (GS) configuration is the most cost-effective RF design as less wafer space is taken up with contact pads. Cascade Microtech's |**Z**| Probe in a GS/SG configuration enables wafer-level testing with the highest accuracy and throughput available while maintaining excellent electrical behavior regardless of footprint size. It is ideal for reliable high-volume production testing, providing proven unsurpassed contact repeatability.

Cascade Microtech's GS/SG |**Z**| Probes are configured for probing up to 10 GHz making them ideal for testing SAW devices. Long, independent contact springs touch down precisely yet gently even on metal layer thicknesses down to an ultra-thin 50 nm.

The unique |**Z**| Probe design with its independent spring contacts minimizes the impact between tips and pads. Therefore, by design the |**Z**| Probe overcomes the limitations of the traditional micro-coax and thin-film style HF probes which typically cause damage after multiple contacts.

The |**Z**| Probe has an extremely low contact resistance on gold as well as on aluminum pads. The |**Z**| Probe GS/SG 10 GHz is available from 50 µm to 1250 µm standard pitches. A special left/right version is also available to provide unhindered two-port testing from one side.

FEATURES AND BENEFITS

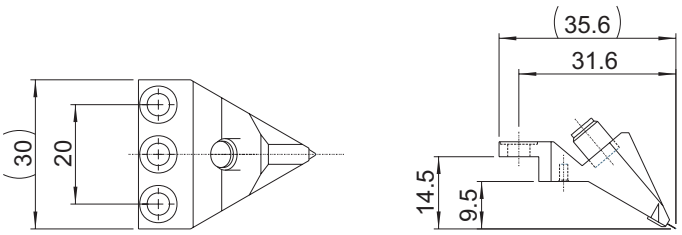
Durability	Incredibly long lifetime
	Unparalleled repeatable and reliable contact quality
	Suitable for automated testing
Flexibility	Probe on most pad material with minimal damage
	Independent, long contact springs easily overcome pad height differences up to 50 µm
	Small structures such as 40 µm x 40 µm pads can be tested
	Excellent performance in vacuum environments and temperatures from 10 K to 300°C
RF performance	Lowest insertion loss
	High isolation
	Lowest contact resistance

SPECIFICATIONS*

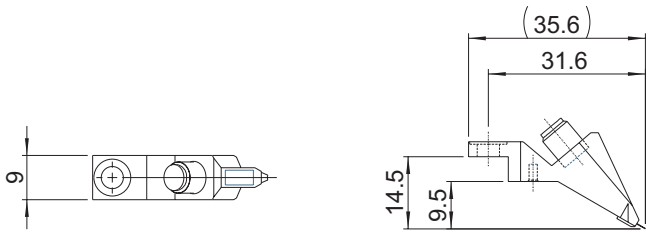
Electrical Characteristics		
	Characteristic impedance	50 Ω
	Return loss	> 20 dB DC to 10 GHz**
	Insertion loss	< 0.6 dB DC to 10 GHz**
	Maximum RF power	5 W at 10 GHz
	Maximum DC current	1 A
	Maximum DC voltage	75 V
	Contact resistance on Au	6 mΩ**
Mechanical Characteristics		
	Contacts	Solid nickel springs
	Insulator	RF dielectric
	Contact cycles on Al	> 1,000,000
	Contact spring pressure	4 N/mm
	Available standard pitches	550 µm to 1250 µm with 50 µm increments***
RF Connector		
	Type	PC 2.92 mm
	Coupling torque	0.8 Nm to 1.1 Nm (Recommended)
	Outer contact	Stainless steel
	Center contact	CuBe with Au plating
	Insulator	PS

*Data, design and specification depend on individual process conditions and can vary according to equipment configurations. Not all specifications may be valid simultaneously.
**Typical for probes with pitches from 100 µm to 200 µm
***100 µm to 500 µm pitch available upon request

PHYSICAL DIMENSIONS (FOOTPRINT)

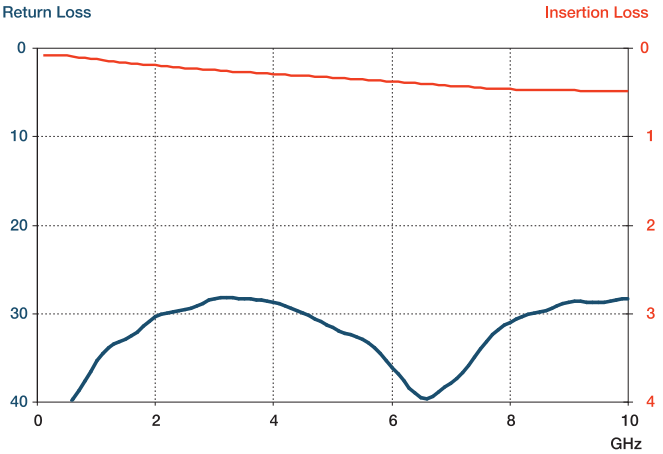


|Z| Probe standard case (all dimensions in mm).

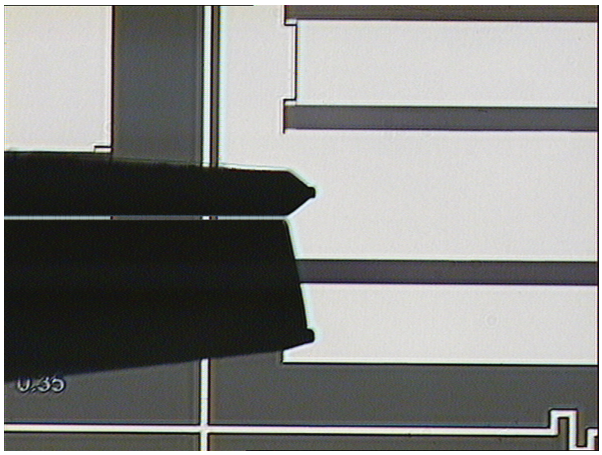


|Z| Probe slim case (all dimensions in mm).

APPLICATIONS



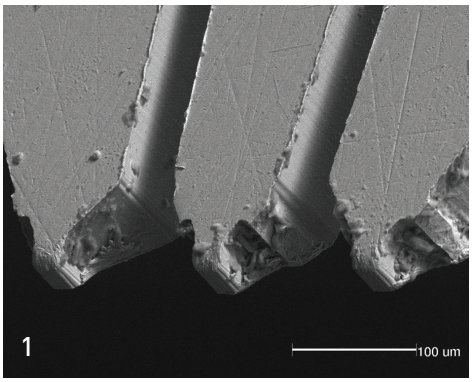
Uncalibrated performance of a |Z| Probe 10 K3N GS 150.



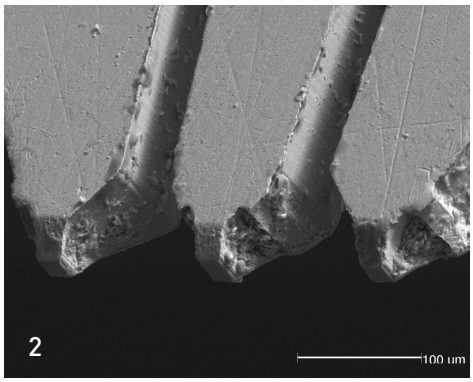
|Z| Probe with 400 µm pitch on a SAW filter structure.

APPLICATIONS (CONTINUED)

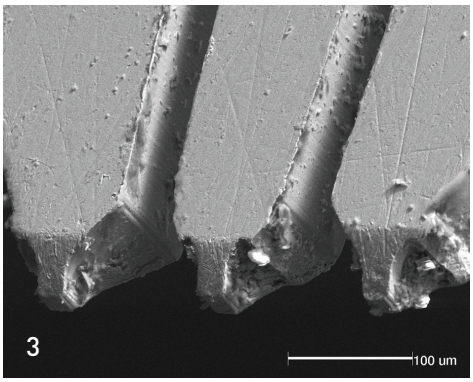
Long lifetime of |**Z**| Probe (Contact material: Al Overtravel: 75 µm)



New |**Z**| Probe (upside-down)



The same probe after 1.5 million touchdowns



The same probe after three million touchdowns

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