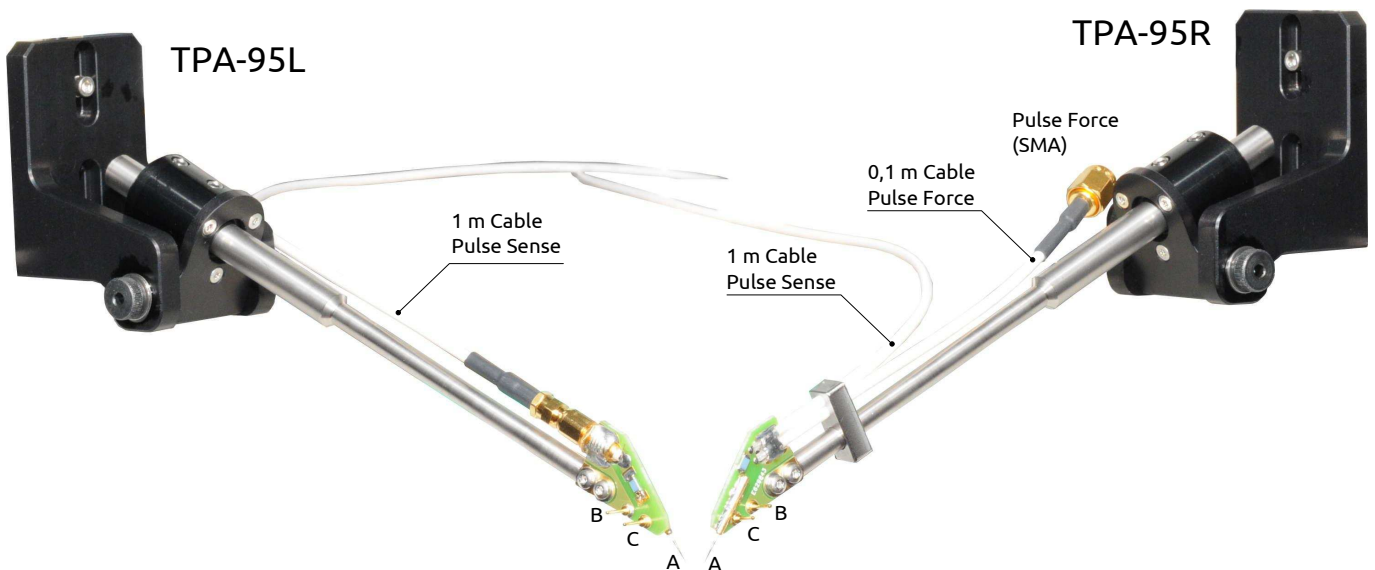


# High Voltage TLP Probe Arm Kit TPA-95

Advanced TLP/HMM/HBM Solutions



## 1 Features

- Flexible pulse force, pulse sense combined TLP probe arm kit based on TPA-95L and TPA-95R
- High voltage probing capability: 3 kV up to 1.5  $\mu$ s pulse width
- Compatible with typical standard micropositioner mechanical interfaces (Fig. 11)
- 4.7 k $\Omega$  pulse sense voltage divider, which results in a voltage transfer ratio of  $(4700 + 50)/50 = 95 : 1$  into 50  $\Omega$
- Variable probe pitch configuration
- 1 m flexible 50  $\Omega$  cables with SMA connector for pulse sense
- 0.1 m flexible 50  $\Omega$  cables with SMA connector for pulse force
- Bracket size custom selectable for HPPI probe station PS-5026B
- Tungsten probe tips
- Can be used for chuck backside grounded TLP measurements

## 2 Description

The TPA-95 probe arm kit consists of two probe arms TPA-95L and TPA-95R including tungsten probe tips and interconnection cables. The kit is used for variable pitch wafer-level TLP measurements. Both arms include a pulse sense 4.7 k $\Omega$  pick-off tee which results in a voltage transfer ratio of 95:1 into 50  $\Omega$ .

Fig. 1 and Fig. 2 show the equivalent circuit of the probe arms. TPA-95L can be used for Kelvin-type pulse force / pulse sense configuration. TPA-95R can be used for direct pulse sense configuration. The nodes A, B, C are used to interconnect the probe arms for different measurement configurations.

Fig. 3 to Fig. 6 show several typical application examples, including grounded chuck configuration for backside grounded wafer TLP measurements.

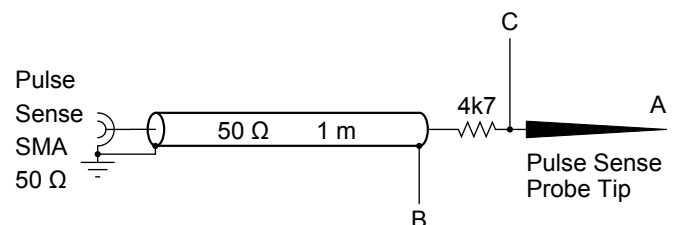


Figure 1: TPA-95L equivalent circuit.

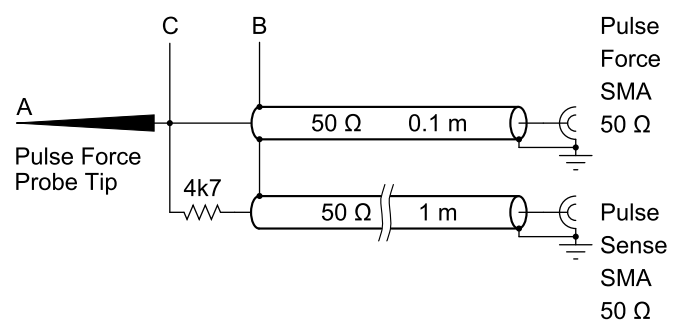


Figure 2: TPA-95R equivalent circuit.

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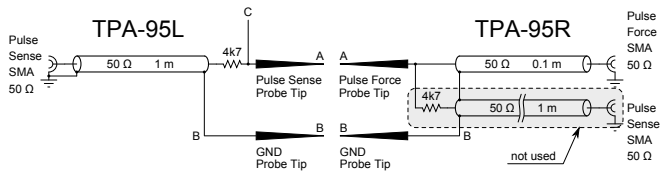


Figure 3: TPA-95 Kelvin pulse force / pulse sense configuration.



Figure 8: Detail view of the TPA-95 with GND needles connected.

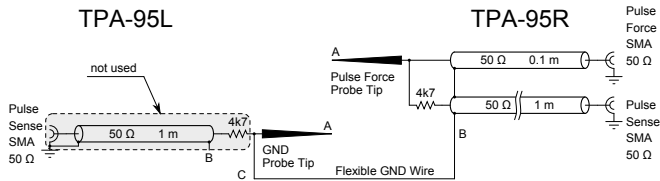


Figure 4: TPA-95 direct pulse sense configuration.



Figure 9: TPA-95 packing including accessories.

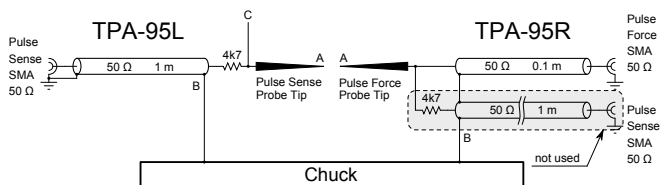


Figure 5: TPA-95 Kelvin pulse force / pulse sense configuration with grounded chuck.

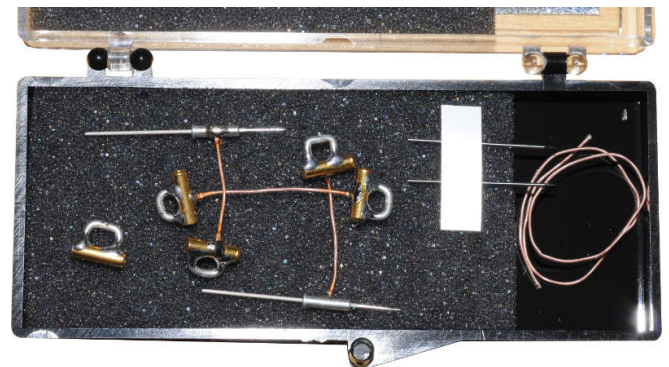


Figure 10: Flexible pitch setup GF-A for TPA-95.

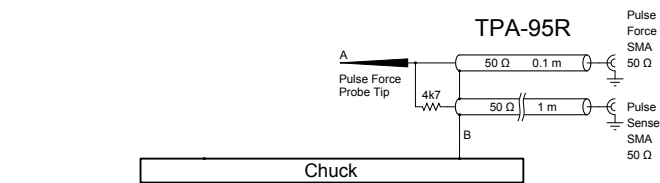


Figure 6: TPA-95 direct pulse sense configuration with grounded chuck.

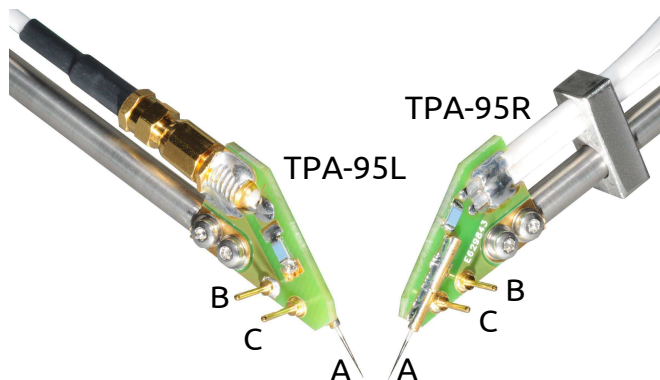


Figure 7: Detail view of the TPA-95 interconnections.

## 3 Replacement Tungsten Needles

Tungsten carbide probes, 7.5 μm tip radius, 15° taper, 0.508 mm (20 mil) diameter from AMERICAN PROBE & TECHNOLOGIES Inc.; <http://www.americanprobe.com/>

Part	Probe Needle Model No.
TPA-95L	72TC-D3/75 x 0.75"
TPA-95R	72TC-D3/75 x 0.75"
GF-A	72TC-D3/75 x 1"

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## 4 Mechanical Dimensions

Different probe arm length are custom selectable. Fig. 11 shows typical standard dimensions.

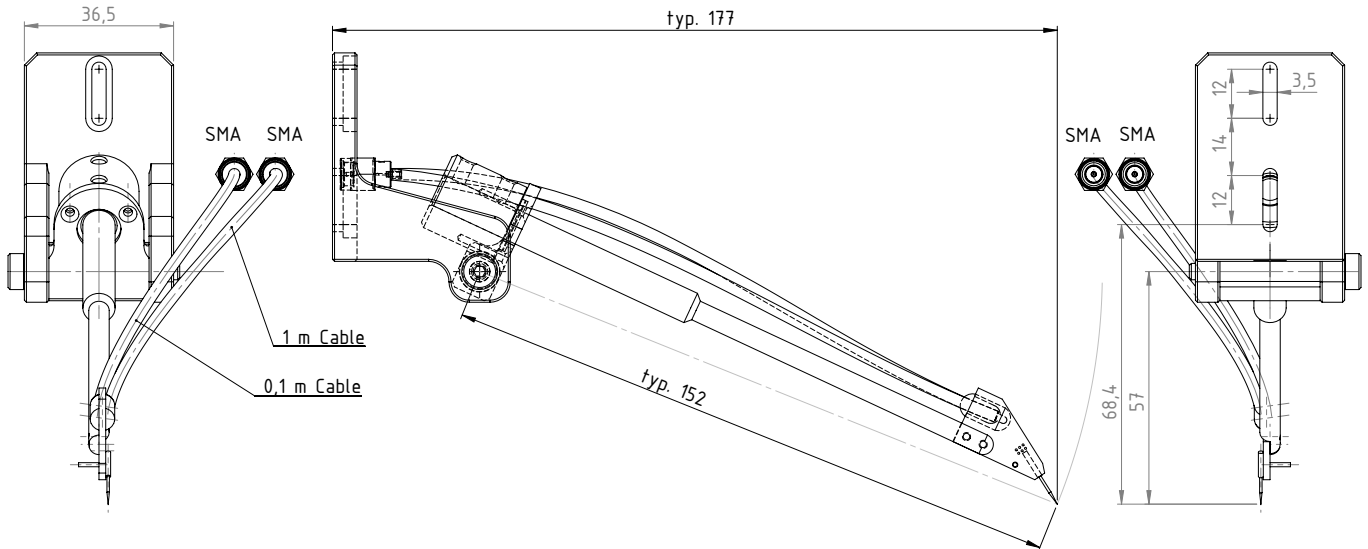


Figure 11: Mechanical dimensions TPA-95R in [mm]. TPA-95L has same dimensions. Note: Dimensions are different if smaller bracket size and shorter shaft have been selected for HPPI probestation PS-5026B.

## 5 Ordering Information

Pos.	Description	Part No.
01	<p>TLP Probe Arm Kit</p> <ul style="list-style-type: none"> <li>• 1 x TPA-95-R</li> <li>• 1 x TPA-95-L</li> <li>• 4 x screws DIN 912 A2 4-40 x 8 (5/16")</li> <li>• Hex keys: <ul style="list-style-type: none"> <li>- 1 x 3/32"</li> <li>- 1 x 1.5 mm</li> <li>- 1 x 2 mm</li> <li>- 1 x 2.5 mm</li> </ul> </li> <li>• GF-A kit for TPA-95</li> <li>• SMA female/female adapter</li> </ul> <p>Bracket size custom selectable for HPPI probe station PS-5026B.</p>	TPA-95

### General

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