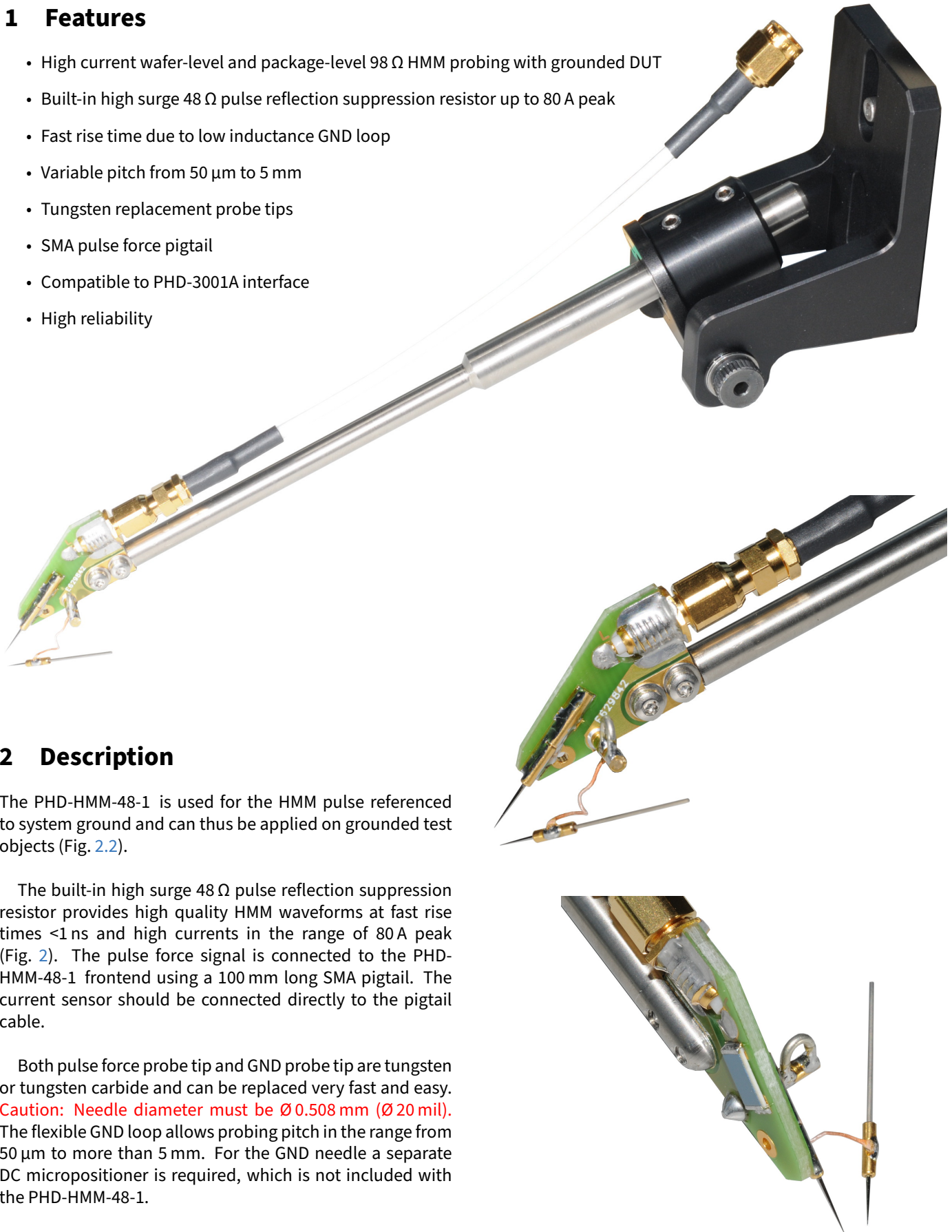


# 48 $\Omega$ HMM Pulse Force Probe PHD-HMM-48-1

Advanced TLP/HMM/HBM Solutions

## 1 Features

- High current wafer-level and package-level 98  $\Omega$  HMM probing with grounded DUT
- Built-in high surge 48  $\Omega$  pulse reflection suppression resistor up to 80 A peak
- Fast rise time due to low inductance GND loop
- Variable pitch from 50  $\mu\text{m}$  to 5 mm
- Tungsten replacement probe tips
- SMA pulse force pigtail
- Compatible to PHD-3001A interface
- High reliability



## 2 Description

The PHD-HMM-48-1 is used for the HMM pulse referenced to system ground and can thus be applied on grounded test objects (Fig. 2.2).

The built-in high surge 48  $\Omega$  pulse reflection suppression resistor provides high quality HMM waveforms at fast rise times  $<1\text{ ns}$  and high currents in the range of 80 A peak (Fig. 2). The pulse force signal is connected to the PHD-HMM-48-1 frontend using a 100 mm long SMA pigtail. The current sensor should be connected directly to the pigtail cable.

Both pulse force probe tip and GND probe tip are tungsten or tungsten carbide and can be replaced very fast and easy. **Caution: Needle diameter must be  $\varnothing 0.508\text{ mm}$  ( $\varnothing 20\text{ mil}$ ).** The flexible GND loop allows probing pitch in the range from 50  $\mu\text{m}$  to more than 5 mm. For the GND needle a separate DC micropositioner is required, which is not included with the PHD-HMM-48-1.

The PHD-HMM-48-1 can be used for efficient wafer-level as well as package-level HMM probing.

Figure 2.1: PHD-HMM-48-1 frontend detail view

# 48 Ω HMM Pulse Force Probe PHD-HMM-48-1

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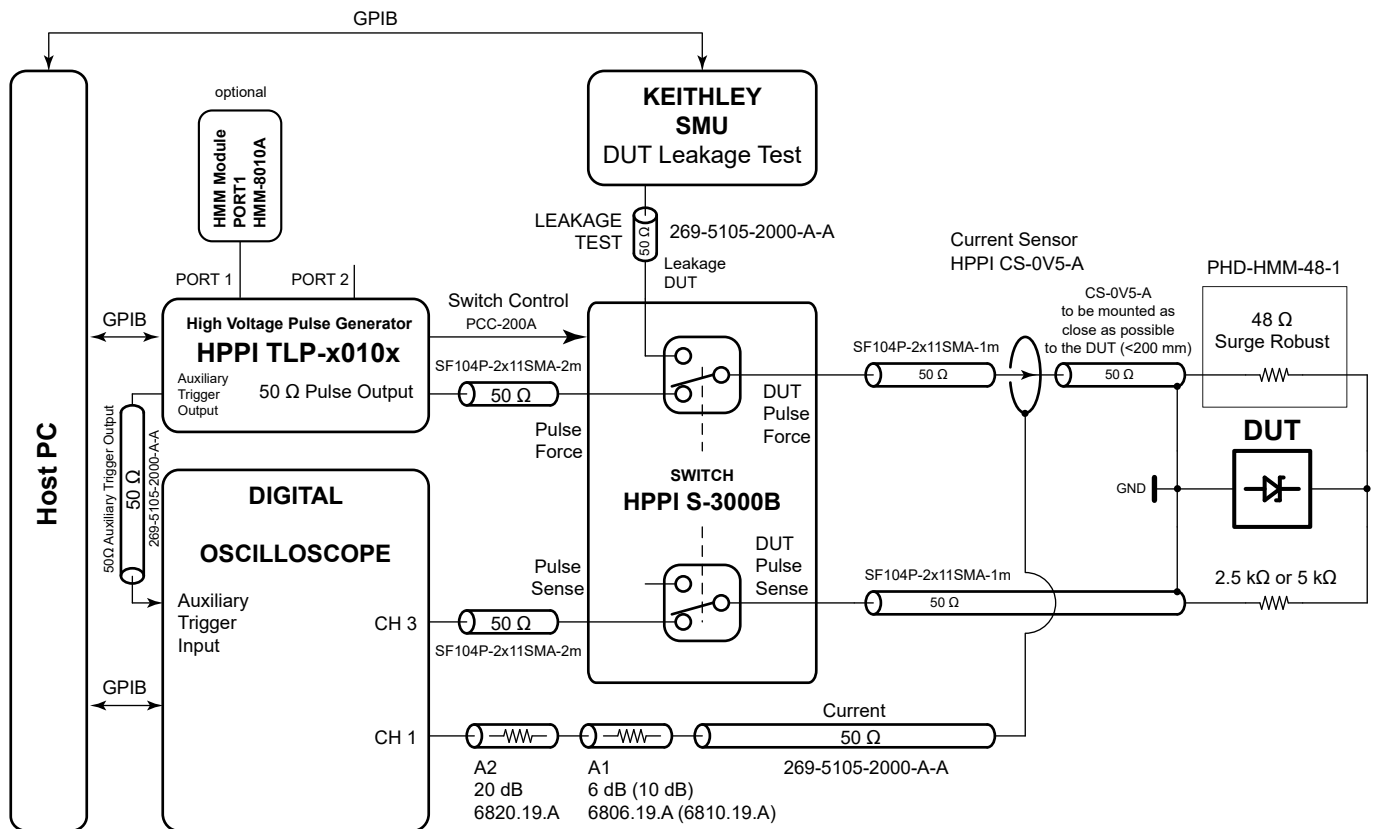


Figure 2.2: 98 Ω HMM measurement setup with grounded DUT.

## 3 Replacement Tungsten Needles

**Caution:** Needle diameter must be  $\varnothing 0.508$  mm ( $\varnothing 20$  mil). Preferred replacement 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.
Probe Head Needle	72TC-D3/75 x 0.75"
GND Needle	72TC-D3/75 x 1"

Table 3.1: Replacement needle model numbers

Also H-20242 Tungsten needles from Quater can be used. The needles have 0.508 mm (20 mil) diameter and 25.4 mm (1000 mil) length. 19.05 mm (750 mil) for the probe head needle on request. For ordering please refer to <http://www.quater-research.com/accessories.htm> or other tungsten needle suppliers.

## 4 Packing

Fig. 4.1 shows the packing case for shipment.



Figure 4.1: Packing for shipment

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## 5 Mechanical Dimensions

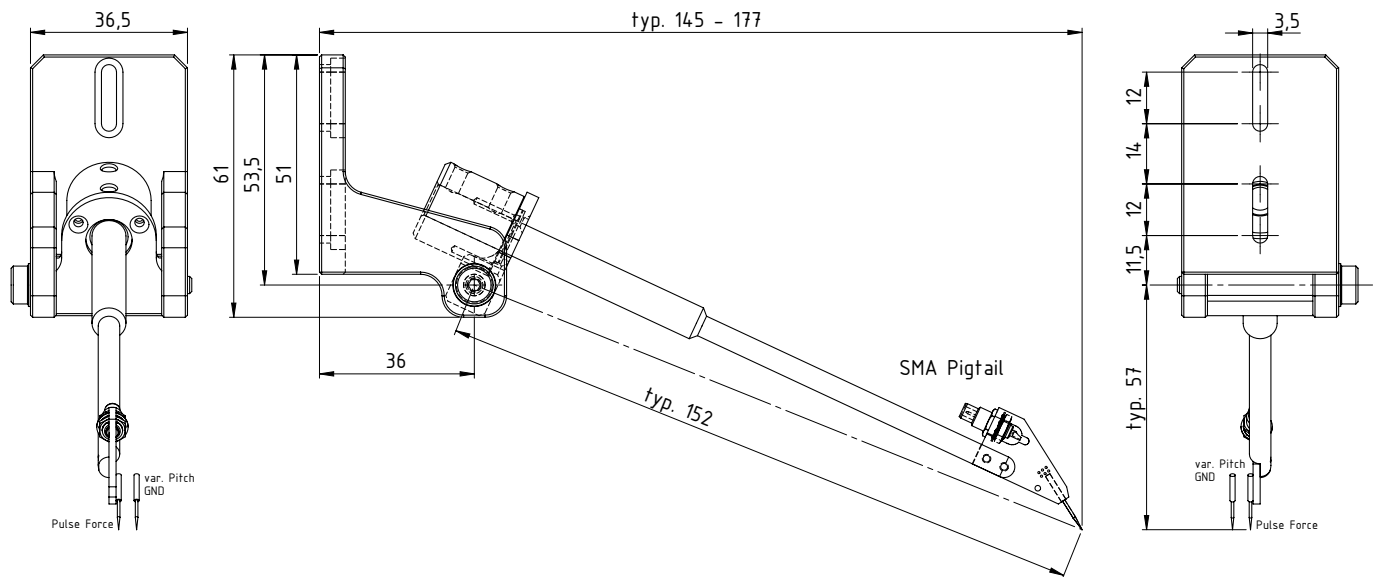


Figure 5.1: Mechanical dimensions in [mm].

## 6 Ordering Information

Pos.	Description	Part No.
01	48 Ω HMM Pulse Force Probe incl. Replacement Probe Tips and SMA Pigtail	PHD-HMM-48-1

### General

The product data contained in this data-sheet is exclusively intended for technically trained staff. You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application. Our products are solely intended to be commercially used internally and should not be sold to consumers. This data-sheet is describing the specifications of our products for which a warranty is being granted by HPPI GmbH. Any such warranty is granted exclusively pursuant the terms and conditions of the respective supply agreement. There will be no guarantee of any kind for the product and its specifications. For further information on technology, specific applications of our product, delivery terms, conditions and prices please contact HPPI:

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