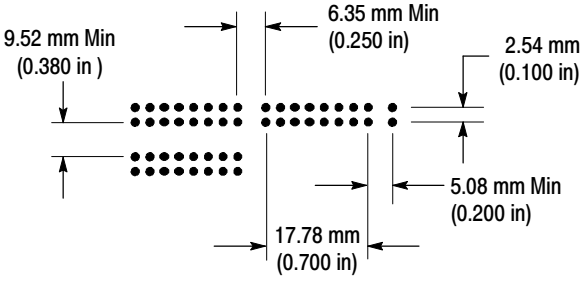
Special Considerations for the Adapters. The following are issues to consider when you use either the Compression-on-PCB to P6434 Mictor adapter or the Mictor-on-PCB to P6860 Compression adapters.

- Use of the Compression-on-PCB to P6434 Mictor and Mictor-on-PCB to P6860 Compression adapters on existing 68 and 34 channel embedded configurations and supports may require exchanging the P6860 Probe heads or P6434 module connector ends to accommodate all older Tektronix logic analyzer signal connection alternatives. For additional information on P6434 and P68xx probe-to-module orientation refer to the following:
  - *071-1122-xx P6810 General Purpose Logic Analyzer Probe Label Instructions*
  - *071-1123-xx P6860 High Density Logic Analyzer Probe Label Instructions*
  - *071-1124-xx P6880 High Density Differential Logic Analyzer Probe Label Instructions*
  - *071-1062-xx P6434 Probe Label Instructions*
- On the Compression-on-PCB to P6434 Mictor adapter, the negative side of the differential clock/quals are left floating (N/C) to allow a differential clock signal to be connected to the compression footprint and still be probed by a P6434. However, the P6434 will only see the CLK+ side of the differential line. This also allows the P6860 Probes to be connected in the future and provide true differential clock/qual support.
- On the Mictor-on-PCB to P6860 Compression adapter, the negative side of the differential clock/qual inputs on the compression connection side are internally grounded to support viewing the single-ended clock/qual inputs supported by the P6434 Probe and older Tektronix logic analyzers.

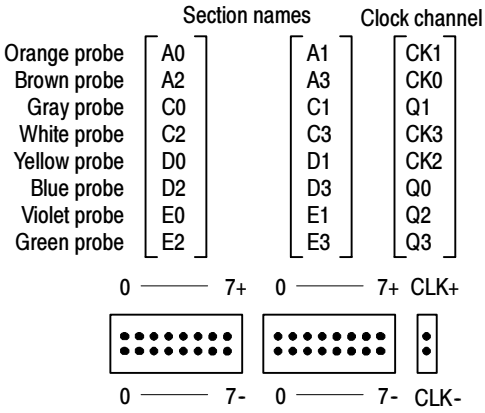
Land Footprints

The following section shows the land footprints for the P6810, P6860, and P6880 Probes. These figures contain the signal to land pattern assignments.

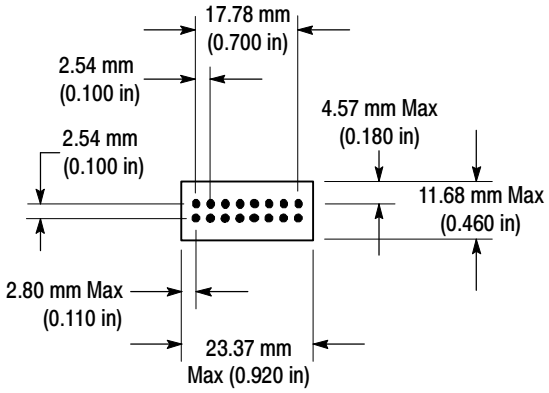
P6810 Probe Land Footprint. See Figure 2-1 for the P6810 General Purpose Probe land footprint. Pin spacing allows for spacing tolerance between 8-channel podlet holder and clock/qual podlet configurations. Negative inputs of differential signals may be grounded to support single-ended signal inputs.



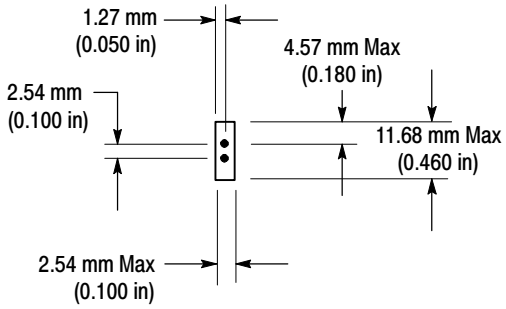
Pin spacing between 8-channel podlet groups and clock/qual podlets



16 Channels plus one clock - grouping footprint



8-Channel probe footprint with 8-channel podlet grouper attached



Single podlet footprint

Figure 2-1: P6810 General-Purpose probe land footprint

P6860 Probe Land Footprint. See Figure 2–2 for the land footprint for the P6860 High-Density Probe. See Figure 2–3 for an example of the High-Density Probe land footprint in a typical pass-through signal path layout configuration. This type of configuration optimizes minimal probe loading. Figure 2–4 contains example layouts of the High-Density Compression and Mictor land footprints.

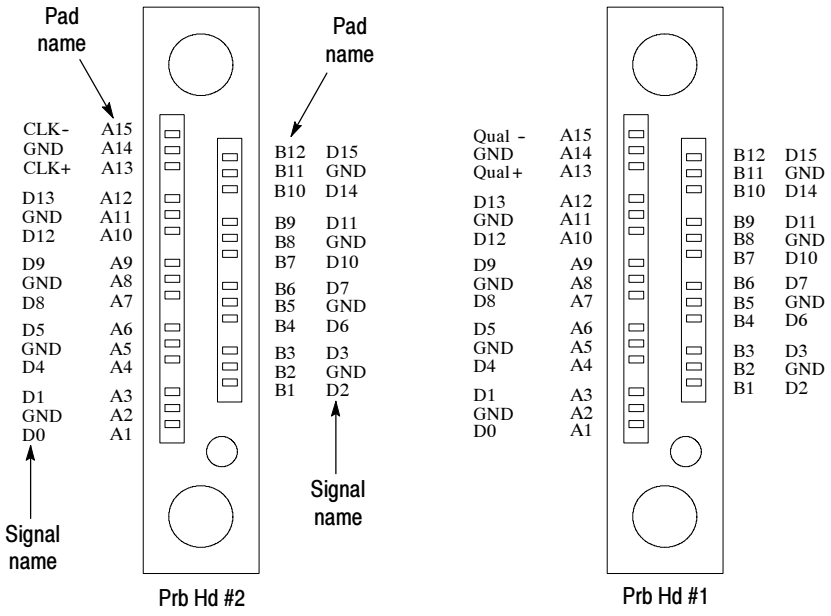
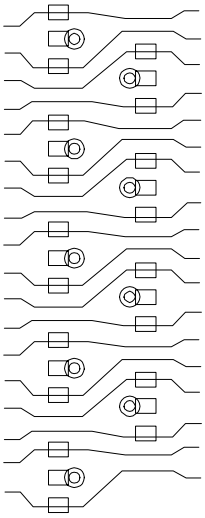


Figure 2-2: P6860 High-Density probe land footprint



Signal Name	Pad Name	Signal Name	Pad Name
CLK/Qual -	A15	GND	A14
CLK/Qual +	A13		
Data 15	B12	GND	B11
Data 14	B10		
Data 13	A12	GND	A11
Data 12	A10		
Data 11	B9	GND	B8
Data 10	B7		
Data 9	A9	GND	A8
Data 8	A7		
Data 7	B6	GND	B5
Data 6	B4		
Data 5	A6	GND	A5
Data 4	A4		
Data 3	B3	GND	B2
Data 2	B1		
Data 1	A3	GND	A2
Data 0 (LSB)	A1		

Figure 2-3: High-Density probe land footprint in a typical pass-through signal path layout configuration

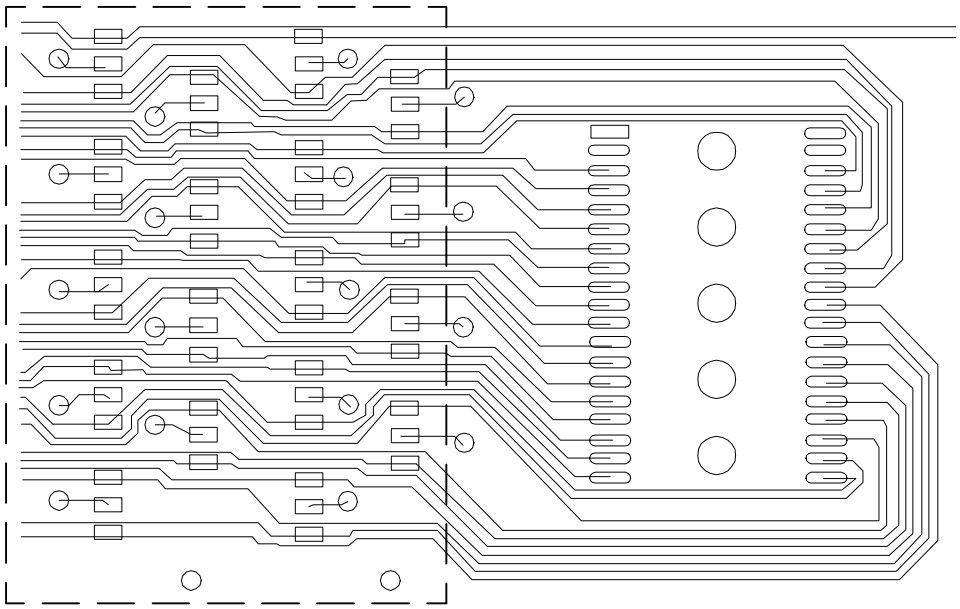


Figure 2-4: Example layouts of the High-Density compression compared to the mictor land footprints

P6880 Differential Probe Land Footprint. See Figure 2–5 for the land footprint for the P6880 High-Density Differential Probe. Figure 2–6 illustrates an example of the High-Density Differential Probe land footprint in a typical pass-through signal path layout configuration.

***NOTE**. Because the land pattern is the same between P6880 and P6860 probes, you can also use the P6860 probe to look at both sides of the differential signal using two separate input channels on the P6860 probe.*

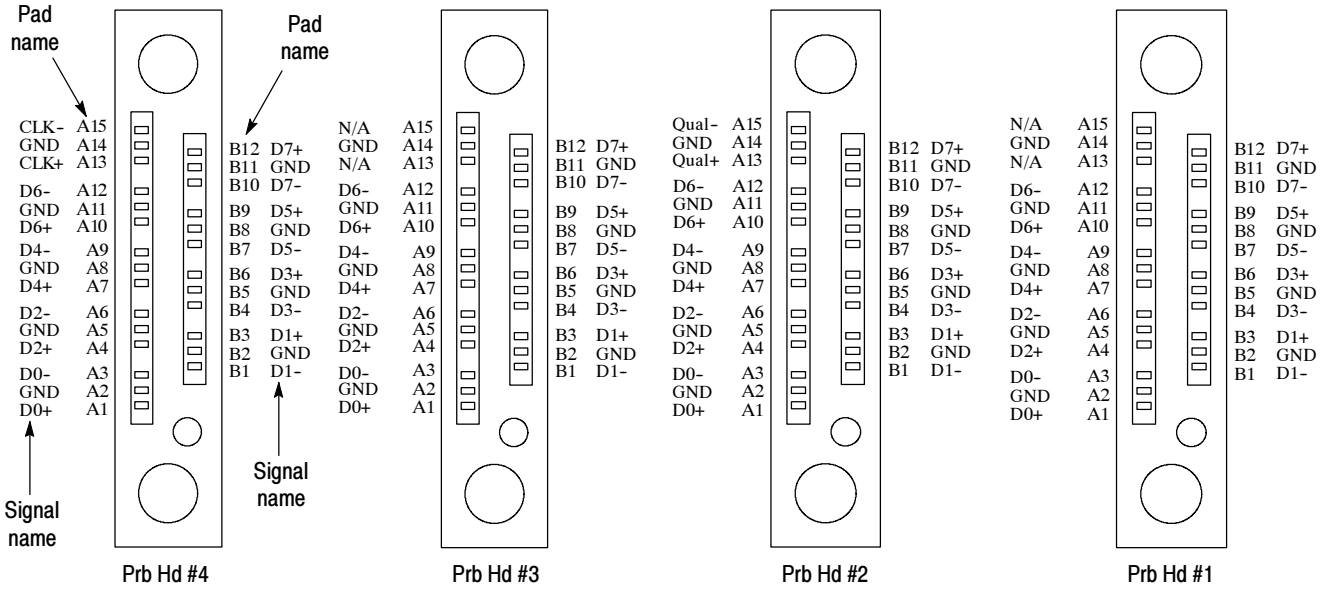
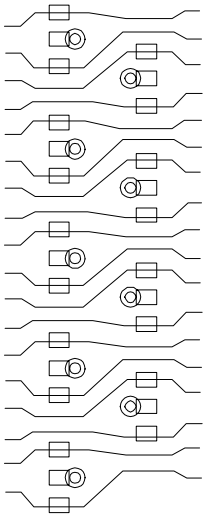


Figure 2-5: P6880 Differential probe land footprint



Signal Name	Pad Name	Signal Name	Pad Name
CLK/Qual -	A15	GND	A14
CLK/Qual +	A13		
Data 7+	B12	GND	B11
Data 7-	B10		
Data 6-	A12	GND	A11
Data 6+	A10		
Data 5+	B9	GND	B8
Data 5-	B7		
Data 4-	A9	GND	A8
Data 4+	A7		
Data 3+	B6	GND	B5
Data 3-	B4		
Data 2-	A6	GND	A5
Data 2+	A4		
Data 1+	B3	GND	B2
Data 1-	B1		
Data 0-	A3	GND	A2
Data 0+(LSB)	A1		

Figure 2-6: High-Density Differential probe land footprint in a typical pass-through signal path layout configuration

Mechanical Considerations

This section provides information on compression land footprint requirements and physical attachment requirements.

Land Footprint Requirements for the P6860 and P6880 Probes. See Figure 2-7 for the compression land footprint requirements for the P6860 and P6880 Probes.

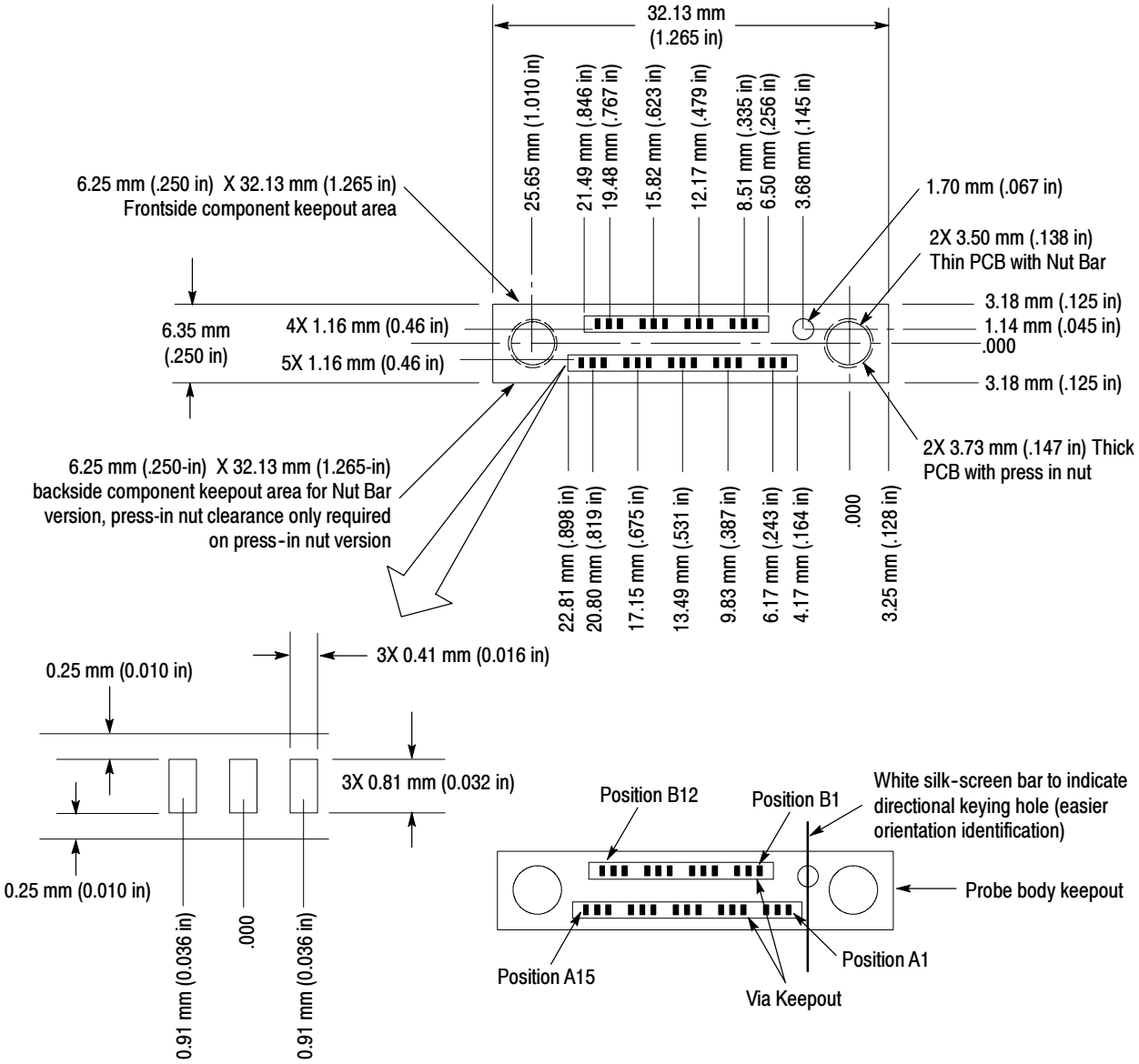


Figure 2-7: Land footprint requirements for the P6860 and P6880 probes (top view)

Special Considerations

WARNING. *To avoid personal injury due to electric shock, always turn off the power on your target system before cleaning the compression footprint.*

- Cleanliness is important for a reliable connection. Refer to *Cleaning the P6860 and P6880 Compression Footprints*, located on page 1–12.
- Line boxes around the pin groupings are the via keepout areas (not part of the actual land footprint).
- Solder mask is required between all land pads in the component keepout area.
- All signal runs in the keepout areas are required to maintain PCB and solder mask tolerances to ensure that no exposed runs or metal exist between pads. This requirement avoids the risk of shorting signal runs.
- Solder mask hardness of at least 8H (pencil hardness) and thickness of at least 0.0762 mm to 0.1270 mm (0.0003 to 0.0005 in) has been verified for several hundred cycles without appreciable wear from the compression contact cycling.
- The Compression land footprint design was verified on immersion gold and HASL board processes.

Land Footprint Requirements for the Compression-on-PCB to P6434 Mictor Adapter. See Figure 2–8 for the land footprint requirements for the Compression-on-PCB to P6434 Mictor adapter. This compression adapter converts from the new compression footprint to the existing P6434 Mictor-based 34-channel probe.

Refer to the *P6434 Mass Termination Probe Manual* for the Mictor land footprint specification. Refer to Table 2–12 for the recommended channel mappings for the Compression-on-PCB to P6434 Mictor adapter and Mictor-on-PCB to Compression adapter.

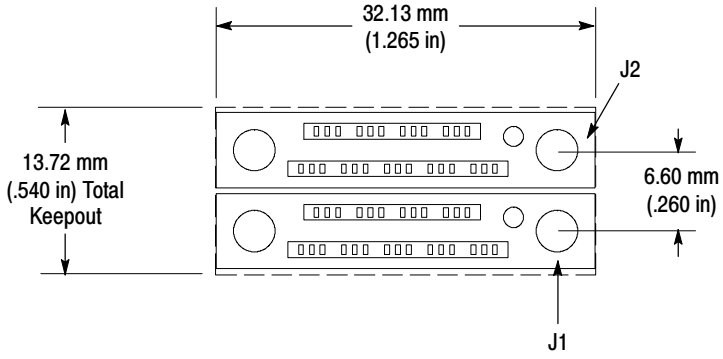


Figure 2-8: Land footprint requirements for the Compression-on-PCB to P6434 Mictor adapter

Special Considerations

- Two compression land footprints must be spaced as per the mechanical dimensions specified to support the compression adapter.
- Placement of the compression land footprints is only constrained with use of the compression adapter, not in normal usage of the TLA7Axx logic analyzer with a High-Density Probe.
- The P6434 Probe and older logic analyzer modules do not support differential signals. Therefore, the compression adapter cannot be used to support differential signals beyond capturing each side of the differential signal independently in a single-ended manner.
- The compression adapter will add capacitance to the P6434 Probe input capacitance. The Mictor adapter adds 2.7 pF to the High-Density Compression probe load of 0.7 pF for a combined adapter capacitance load of 3.4 pF.
- The TLA7Axx logic analyzer with the P6860 High-Density Probe will connect directly to the compression land footprint to support high performance data capture and viewing needs.
- The TLA7Axx logic analyzer with the P6880 High-Density Differential Probe will also connect directly to the compression land footprint to support high performance differential signal capture and viewing needs.

Physical Attachment Requirements for the P6810 Probe. See Figure 2–9 for the physical dimensions of the P6810 General Purpose Probe.

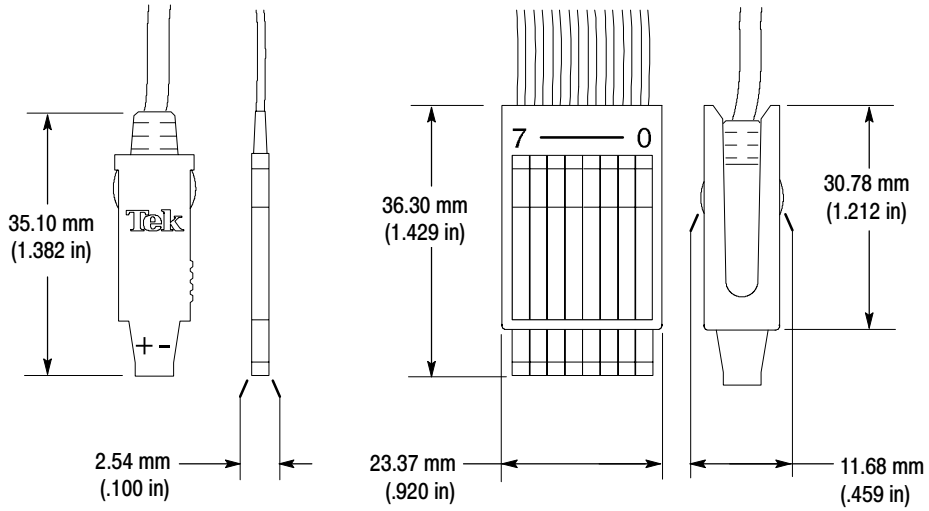


Figure 2-9: Physical attachment requirements for the P6810 probe

Physical Attachment Requirements for the P6860 and P6880 Probes. The connector-less P6860 High-Density Probe and P6880 High-Density Differential Probe interconnects are designed to accommodate PCB thickness ranging from 1.27 mm to 6.35 mm (0.050 in to 0.250 in). To accommodate this range, there are two versions of the design.

- Nut bar
- Press-in nut

If the PCB thickness is 1.27 mm to 2.36 mm (0.050 in to 0.093 in), use the nut bar with the thin elastomer (see Figure 2–10).

If the PCB thickness is 2.36 mm to 6.35 mm (0.093 in to 0.250 in), use the press-in nut with the thick elastomer (see Figure 2–11).

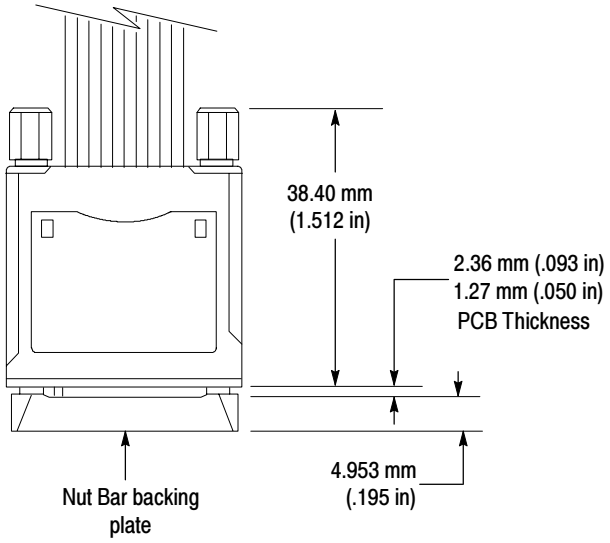


Figure 2-10: Nut Bar design

Special Considerations for the Nut Bar Design

- The nut bar backing plate is required to maintain PCB flatness, which supports the compression connection.
- The nut bar snaps in and out of the PCB without the use of tools.
- Nut bars are reusable and are not required to be a permanent part of the PCB.
- The elastomer used is independent and replaceable.
- Additional nut bars may be ordered from Tektronix.

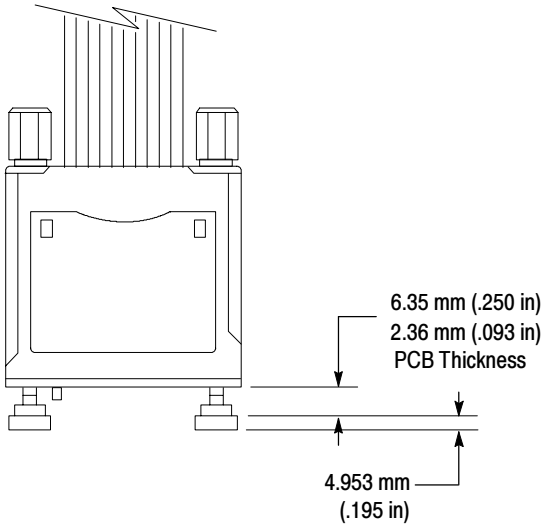


Figure 2-11: Press-in Nut design

Special Considerations for the Press-in Nut Design

- The PEM® KF2 2-56 or equivalent press-in nut must be inserted into the PCB.
- The elastomer used is independent and replaceable.

Physical Attachment Requirements for the Compression-on-PCB to P6434 Mictor and Mictor-on-PCB to P6860 Compression Adapters. See Figure 1–5 on page 1–8 and Figure 1–6 on page 1–9 for the mechanical dimensions of the adapters.

Electrical Considerations

This section provides information on transmission lines and load models for the P6810 General Purpose, P6860 High-Density, and P6880 High-Density Differential Probes.

The low frequency model is typically adequate for rise and fall times of 1 ns or greater in a typical 25 Ω source impedance environment (50 Ω runs with a pass-through connection). For source impedance outside this range, and/or rise and fall times less than 1 ns, use the high frequency model to determine if a significant difference is obtained in the modeling result.

The compression land pattern pad is not part of the load model. Make sure that you include the compression land pad and in the modeling.

Transmission Lines. Due to the high performance nature of the interconnect, ensure that stubs, which are greater than 1/4 length of the signal rise time, be modeled as transmission lines.