196-3492-00
Solder Tip Accessory Kit for Differential Probes
Instructions

www.tektronix.com

071-1390-00

Tektronix

This kit is a new standard accessory for your differential probe and may not be listed in your Instruction Manual or Accessory Reorder Sheet. New kits can also be ordered separately.

Kit Contents

The Solder Tip Accessory kit, Tektronix part number 196-3492-00, includes 4 pairs of resistive solder tips and these instructions.

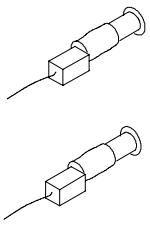


Figure 1: Solder tips (enlarged to show detail)

Overview

The Solder Tip Accessory kit allows you to create a customized, hands-free connection from your circuit to P6330, P7330 and P7350 differential probes.

The solder tips are small sockets that slip over the differential probe input pins to make a reliable electrical connection. The solder tips use low-insertion force sockets that provide a break-away feature to protect your probe and circuitry from damage by excessive forces on the probe cable.

The solder tips easily connect and disconnect to the probe head. You can connect several solder tips throughout your circuit to gain access to difficult test points quickly and easily.

The contacts inside the solder tips are rated for 10 to 15 insertion cycles with the probe tip. Do not use the solder tips after exceeding these limits to avoid unreliable operation.

Using the Accessory Kit

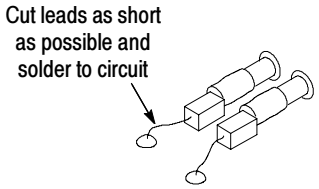
Before you begin soldering accessory components to your circuit, consider the following points:

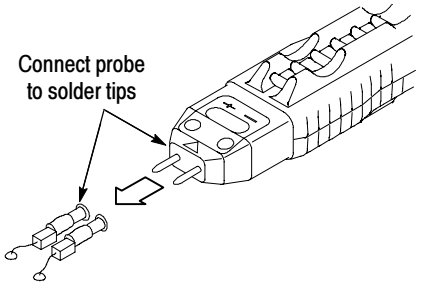
- The solder tips are very small. You may want to use a magnifying glass and tweezers or similar tools when you work with the tips.
- Cut the leads as short as possible, and keep the lengths matched for best signal integrity. (See Table 1 for typical electrical characteristics.)
- The solder tips cannot support the weight of the attached probe. Therefore, before you solder the solder tips to the circuit board, position the solder tips so that you can secure the probe to the circuit board to relieve strain on the solder tips and solder connections.
- To avoid damaging the probe, disconnect the probe from the solder tips before soldering components.
- Only use ESD-approved soldering irons and no-clean flux solder when soldering components to your circuit.

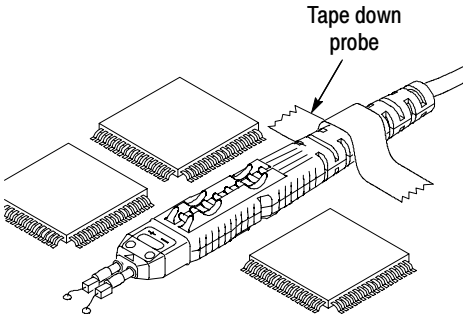
Procedure

Refer to the illustrations as you follow these steps:

1. Cut the solder tip leads to the lengths shown in the template on the next page. You can cut the leads longer, but performance will be degraded.
   (See Table 1).
2. Verify that both solder tips can reach your test points, and that you can make a good connection to your probe.
3. Solder the tips to the circuit. If necessary, use an adhesive, such as quick-set epoxy or hot glue, to secure the solder tips to the circuit board. It may be helpful to use tweezers to hold the solder tips while soldering them to the circuit.
4. Gently push the probe into the solder tips until the probe pins are fully inserted into the sockets. Tweezers are recommended to help secure the tips to the probe pins and ensure a solid connection.
5. Secure the probe to the circuit board with tape or hook-and-loop strips.





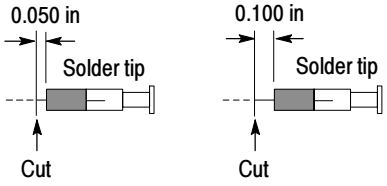


Lead Lengths

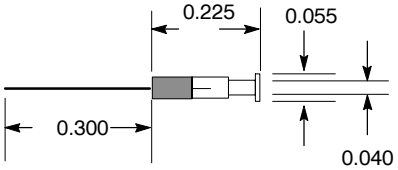
Cut the lead lengths of the solder tips very short. (See template below). See Table 1 for typical electrical characteristics of the adapter using various lead lengths. Longer lead lengths will degrade bandwidth and rise time and will increase overshoot.

Use Table 1 to help you select the component configuration that optimizes response for bandwidth, rise time, or overshoot, based on your measurement needs.

Cut the solder tip lead lengths using actual-size template below. See Table 1 for electrical characteristics.



Dimensions



WARRANTY SUMMARY

Tektronix warrants that the products that it manufactures and sells will be free from defects in materials and workmanship for a period of three (3) months from the date of shipment from an authorized Tektronix distributor. If a product or CRT proves defective within the respective period, Tektronix will provide repair or replacement as described in the complete warranty statement.

To arrange for service or obtain a copy of the complete warranty statement, please contact your nearest Tektronix sales and service office.

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Table 1: Typical electrical characteristics with a 110 ps (10-90%) input step

	P6330 and P7330 Probe				P7350 Probe			
		Probe rise time with 110 ps (10-90%) input step				Probe rise time with 110 ps (10-90%) input step		
Solder tip lead length[1]	Bandwidth[2]	10-90 %[3]	20-80 %[3]	Overshoot	Bandwidth[2]	10-90 %[3]	20-80 %[3]	Overshoot
Probe only (reference)	≥3.5 GHz	140 ps	94 ps	5%	≥5 GHz	125 ps	86 ps	3%
0.050”	≥3.5 GHz	142 ps	95 ps	12%	4.3 GHz	129 ps	87 ps	10%
0.100”	≥3.5 GHz	141 ps	97 ps	15%	3.7 GHz	129 ps	88 ps	13%

[1] Increasing the resistance decreases overshoot. Increasing the lead length increases overshoot.

[2] Measured using a network analyzer.

[3] Using a 110 ps-step source. With a faster source, warranted 10-90% rise times are ≤140 ps for the P6330/P7330, and ≤100 ps for the P7350.