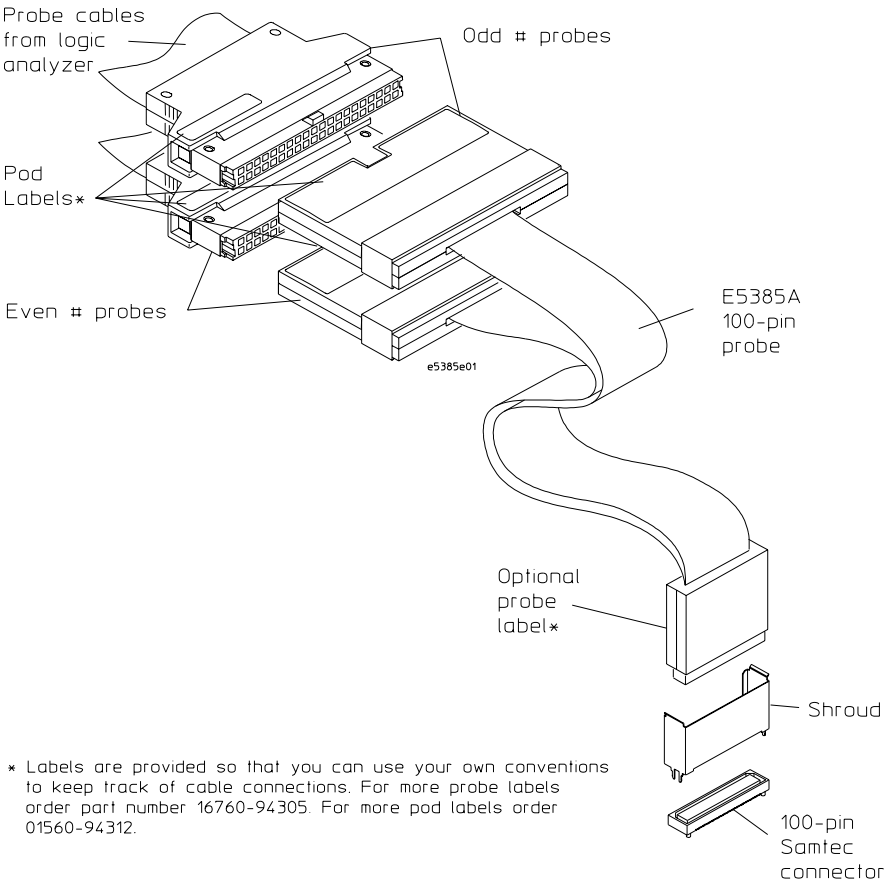
Agilent Technologies E5385A 100-Pin Probe

Installation Note

The Agilent Technologies E5385A 100-pin probe provides a convenient way to connect two Agilent Technologies logic analyzer probe cables to a small area of a target system. The probe has RCR isolation networks in the cable end that connects to the 100-pin Samtec connector.



* Labels are provided so that you can use your own conventions to keep track of cable connections. For more probe labels order part number 16760-94305. For more pod labels order 01560-94312.

Installation overview

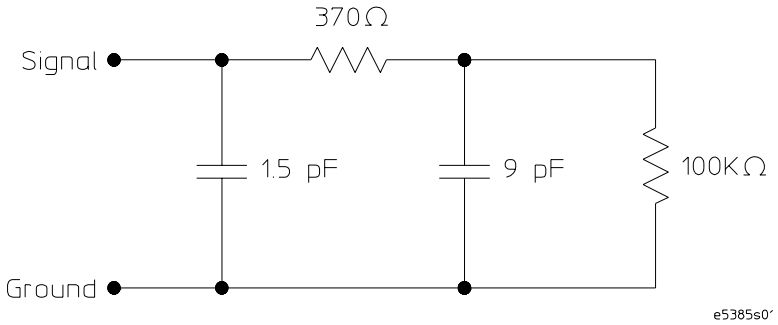
1. Attach the Samtec connector(s) to the target system. Use Samtec 100-pin surface mount receptacles, Agilent part number 1253-3620 or Samtec part number ASP-65067-01.
2. Attach the support shroud around the Samtec connector. Use Agilent part number 16760-62302 or 16760-02303.
3. Connect the 100-pin probe to the Samtec connector and then to the logic analyzer.

Characteristics

The following characteristics apply to the combination of the E5385A 100-pin probe and any compatible Agilent state and timing analysis module (16557D, 16710A, 16711A, 16712A, 16715A, 16716A, 16717A, 16718A, 16719A, 16750A, 16751A, or 16752A).

Input resistance and capacitance	See equivalent probe load diagram
Minimum voltage swing	500 mV p-p
Minimum input overdrive	250 mV
Threshold range	-6 V to +6 V in 10 mV increments
Input dynamic range	+/-10 V about threshold
Maximum input voltage	+/-40 V peak CAT I (Mains isolated)

The following equivalent probe load diagram includes the logic analyzer and Samtec connector.

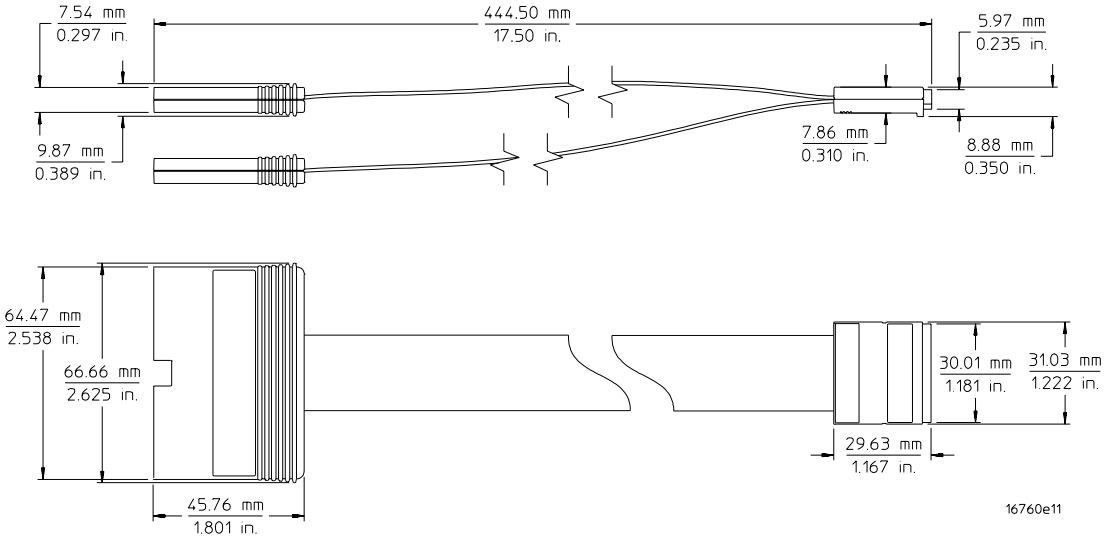


Equivalent probe load

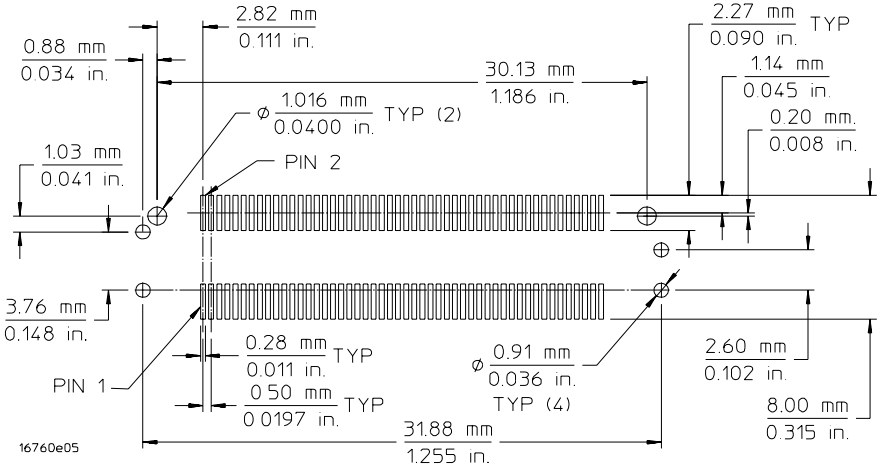
Reference

- Use the illustrations on the following pages to plan and layout your target system.

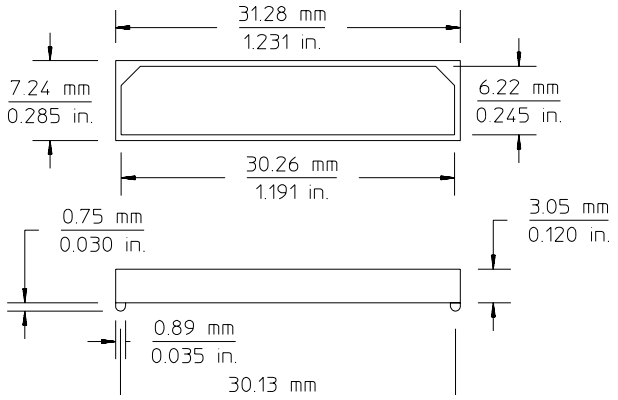
NOTE: You may also want to refer to the Agilent documents titled *Designing High-Speed Digital Systems for Logic Analyzer Probing* and *Probing Solutions for Logic Analysis Systems*. These documents are avilable as pdf files or orderable from www.agilent.com. Searching them by title.



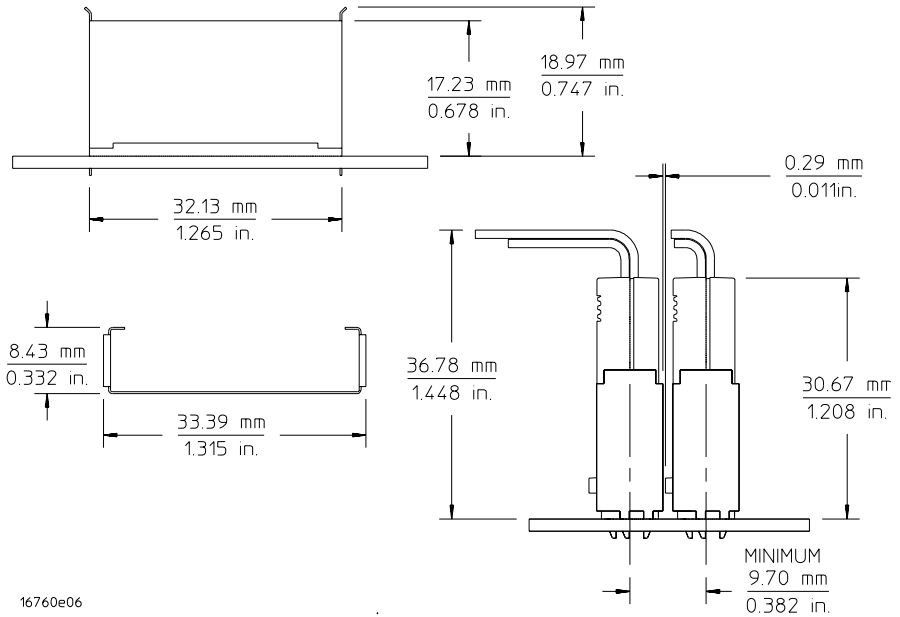
100-pin probe dimensions



Board pad details for 100-pin Samtec connector and support shroud



100-pin Samtec connector dimensions



Support shroud dimensions

Logic analyzer inputs are grouped into pods. Each pod is a group of 16 data signals and a clock signal. In state acquisiton mode, the clock input, if not used as clock, may be acquired as a data signal. In timing acquisition mode, all clock inputs may be acquired by the logic analyzer.

The E5385A has two pods (groups) of signals, indicated as even and odd.

Pins 8, 12, 16, ... 68 are the even data inputs D0 through D15. Pin 80 is the even clock input, which can be assigned to a label and acquired as a data input if not used as a clock.

Pins 7, 11, 15, ... 67 are the odd data inputs D0 through D15. Pin 79 is the odd clock input, which can be assigned to a label and acquired as a data input if not used as a clock.

Pins 3 and 4 should not be connected.

Pins 97, 98, 99, and 100 provide +5V power to the analysis probes or demo boards, and should not be connected to the target system. *Do not connect these to a +5V supply in the target system.*

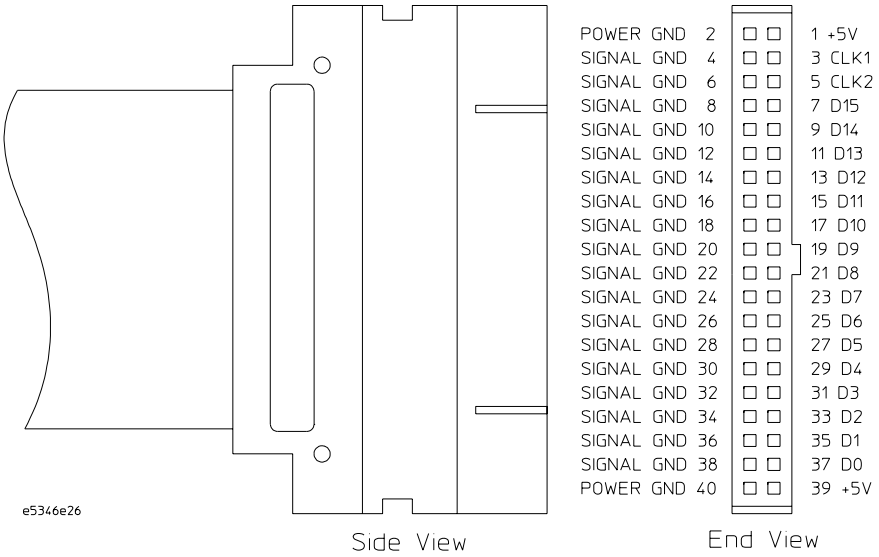
For best high-frequency performance, all pins labeled ground should be connected to a ground plane in the target system.

E5385A 100-Pin Probe Pin Assignments

Signal	Pin Number	Pin Number	Signal
Ground	1	2	Ground
Do Not Connect	3	4	Do Not Connect
Ground	5	6	Ground
Odd D0	7	8	Even D0
Ground	9	10	Ground
Odd D1	11	12	Even D1
Ground	13	14	Ground
Odd D2	15	16	Even D2
Ground	17	18	Ground

E5385A 100-Pin Probe Pin Assignments			
Signal	**Pin Number**	**Pin Number**	**Signal**
Odd D3	19	20	Even D3
Ground	21	22	Ground
Odd D4	23	24	Even D4
Ground	25	26	Ground
Odd D5	27	28	Even D5
Ground	29	30	Ground
Odd D6	31	32	Even D6
Ground	33	34	Ground
Odd D7	35	36	Even D7
Ground	37	38	Ground
Odd D8	39	40	Even D8
Ground	41	42	Ground
Odd D9	43	44	Even D9
Ground	45	46	Ground
Odd D10	47	48	Even D10
Ground	49	50	Ground
Odd D11	51	52	Even D11
Ground	53	54	Ground
Odd D12	55	56	Even D12
Ground	57	58	Ground
Odd D13	59	60	Even D13
Ground	61	62	Ground
Odd D14	63	64	Even D14
Ground	65	66	Ground
Odd D15	67	68	Even D15
Ground	69	70	Ground
NC	71	72	NC
Ground	73	74	Ground
NC	75	76	NC
Ground	77	78	Ground
Odd D16P/Odd CLK	79	80	Even D16P/Even CLK
Ground	81	82	Ground
NC	83	84	NC
Ground	85	86	Ground

E5385A 100-Pin Probe Pin Assignments			
Signal	**Pin Number**	**Pin Number**	**Signal**
NC	87	88	NC
Ground	89	90	Ground
NC	91	92	NC
Ground	93	94	Ground
Ground	95	96	Ground
+5V	97	98	+5V
+5V	99	100	+5V



Logic analyzer pod

Safety Notices

This apparatus has been designed and tested in accordance with IEC Publication 1010, Safety Requirements for Measuring Apparatus, and has been supplied in a safe condition. This is a Safety Class I instrument (provided with terminal for protective earthing). Before applying power, verify that the correct safety precautions are taken (see the following warnings). In addition, note the external markings on the instrument that are described under "Safety Symbols."

Warnings

• Before turning on the instrument, you must connect the protective earth terminal of the instrument to the protective conductor of the (mains) power cord. The mains plug shall only be inserted in a socket outlet provided with a protective earth contact. You must not negate the protective action by using an extension cord (power cable) without a protective conductor (grounding). Grounding one conductor of a two-conductor outlet is not sufficient protection.

• Only fuses with the required rated current, voltage, and specified type (normal blow, time delay, etc.) should be used. Do not use repaired fuses or short-circuited fuseholders. To do so could cause a shock or fire hazard.

• If you energize this instrument by an auto transformer (for voltage reduction or mains isolation), the common terminal must be connected to the earth terminal of the power source.

• Whenever it is likely that the ground protection is impaired, you must make the instrument inoperative and secure it against any unintended operation.

• Service instructions are for trained service personnel. To avoid dangerous electric shock, do not perform any service unless qualified to do so. Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

• Do not install substitute parts or perform any unauthorized modification to the instrument.

• Capacitors inside the instrument may retain a charge even if the instrument is disconnected from its source of supply.

• Do not operate the instrument in the presence of flammable gasses or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.

• Do not use the instrument in a manner not specified by the manufacturer.

To clean the instrument

If the instrument requires cleaning: (1) Remove power from the instrument. (2) Clean the external surfaces of the instrument with a soft cloth dampened with a mixture of mild detergent and water. (3) Make sure that the instrument is completely dry before reconnecting it to a power source.

Safety Symbols

Instruction manual symbol: the product is marked with this symbol when it is necessary for you to refer to the instruction manual in order to protect against damage to the product..

Hazardous voltage symbol.

Earth terminal symbol: Used to indicate a circuit common connected to grounded chassis.

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Notices

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