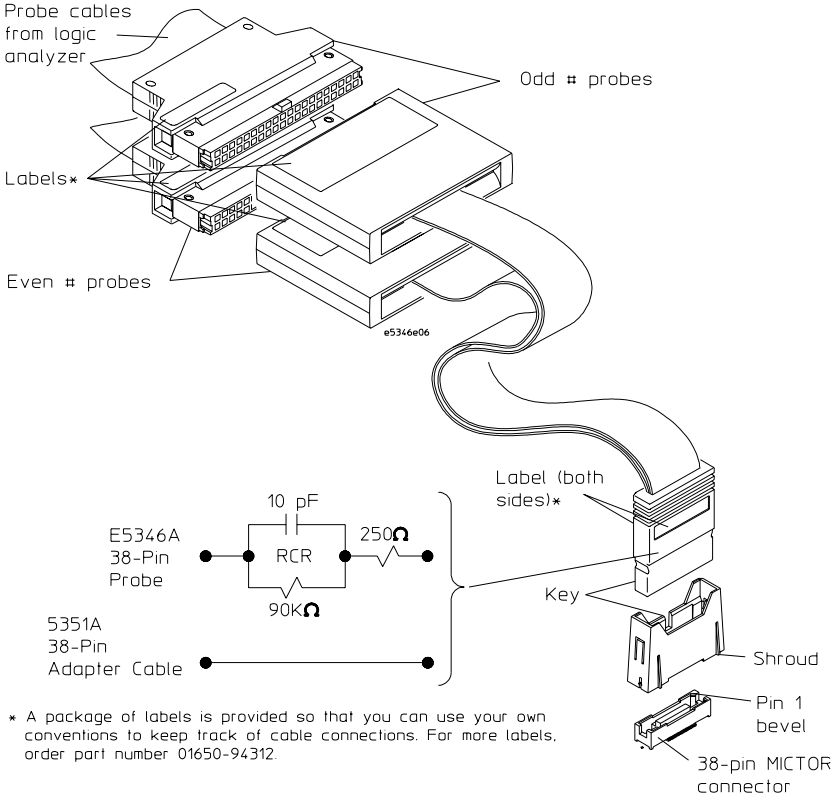
Agilent Technologies E5346A 38-Pin Probe and E5351A 38-Pin Adapter Cable

Installation Note

The 38-pin probe and adapter cable provide a convenient way to connect two Agilent Technologies logic analyzer probe cables to a small area of a target system. The Agilent Technologies E5346A probe has RCR isolation networks in the cable end that connects to the 38-pin AMP MICTOR (***M**atched **I**mpedance **C**onnec**TOR***) connector. The Agilent Technologies E5351A adapter cable does not have isolation networks, so isolation networks must be provided on the target system.



* A package of labels is provided so that you can use your own conventions to keep track of cable connections. For more labels, order part number 01650-94312.

Installation overview

1 Attach the MICTOR connector(s) to the target system. Use 38-pin surface mount receptacles, AMP part number 2-767004-2.

See Also Refer to AMP MICTOR Application Specification 114-11004 for guidelines on soldering. This document can be downloaded from http://connect.amp.com/AMP/docs/pdf/6/95/158596.pdf.

2 Align the MICTOR connector with the support shroud. Note pin 1 orientation for both connector and shroud.

3 Attach the support shroud around the MICTOR connector using glue or solder. If soldering, the hole must be plated.

Use the following table to select the part number of the correct shroud for your board thickness. The kits listed consist of 5 MICTOR connectors and 5 support shrouds..

For Board Thickness	Use Support Shroud Part Number	Use Connector & Support Shroud Kit Number
Up to 1.575 mm (0.062 in.)	E5346-44701	E5346-68701
1.575 to 3.175 mm (0.062 to 0.125 in.)	E5346-44704	E5346-68700
3.175 to 4.318 mm (0.125 to 0.70 in.)	E5346-44703	None

4 Connect either the 38-pin probe or 38-pin adapter cable to the MICTOR connector and then to the logic analyzer.

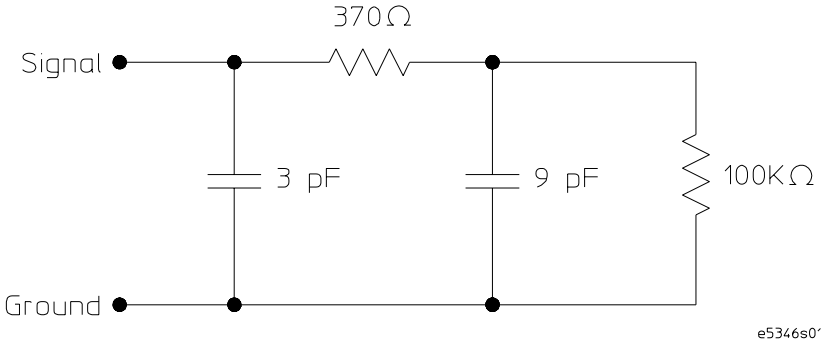
Tabs on the support shroud lock the probe or adapter cable into the MICTOR connector to provide dependable connections and prevent it from inadvertently being disconnected. They also protect the flexible end of the probe or adapter from being bent and damaged.

Characteristics

The following characteristics apply to the combination of the E5346A 38-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

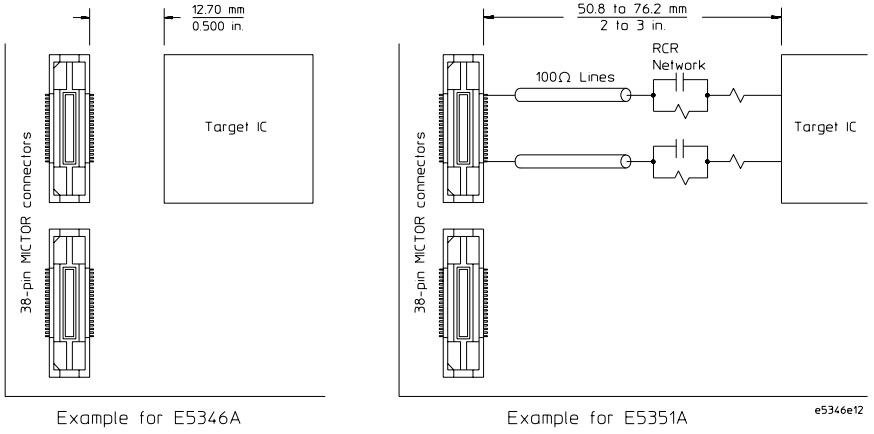
The following equivalent probe load diagram includes the logic analyzer and 38-pin MICTOR connector.



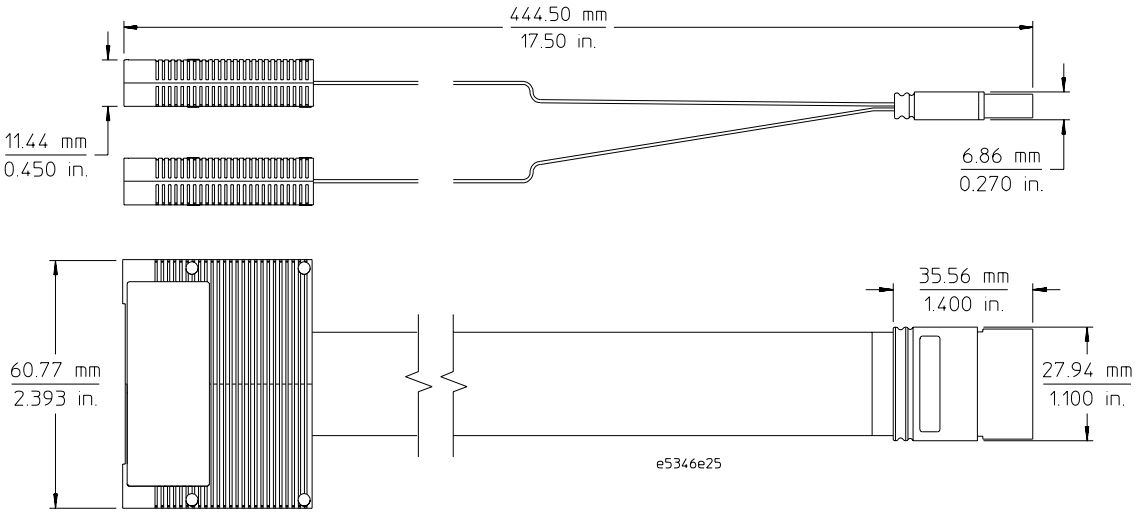
Equivalent probe load

Reference

- Refer to Agilent publication number 5968-4632E *Probing Solutions for Agilent Technologies Logic Analysis Systems* for help on the terminations when using the Agilent Technologies E5351A 38-Pin Adapter Cable.
- Use the illustrations on the following pages to plan and layout your target system.

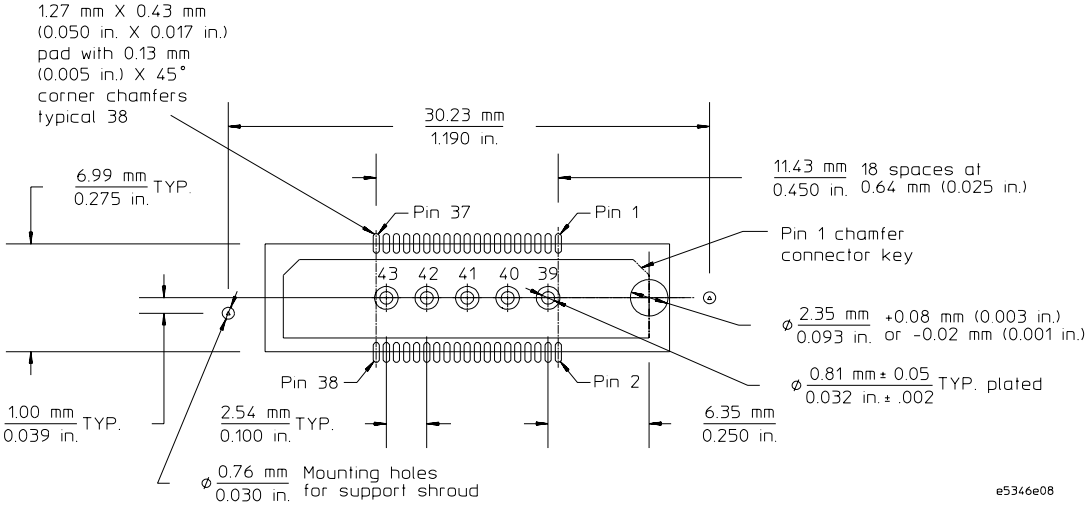


Examples of target system layouts

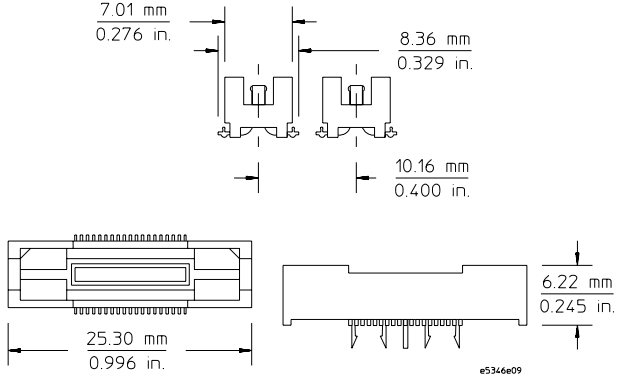


38-pin probe and adapter cable dimensions

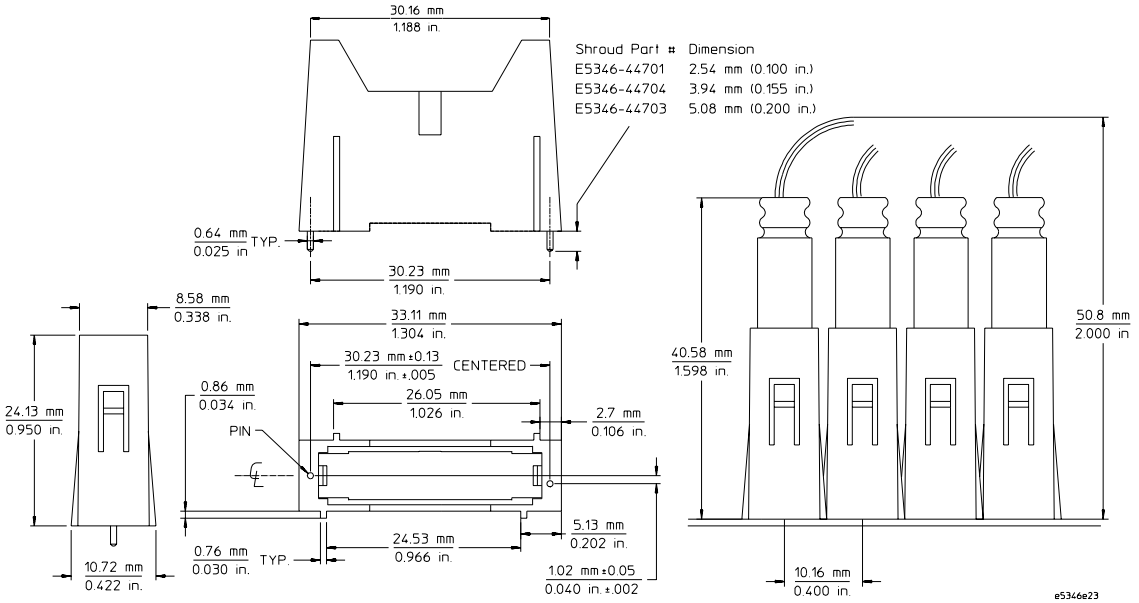
Notice the holes for mounting the support shrouds in the following illustration. One of the holes is off center to allow 0.40 in. (1.02 mm) centers when using multiple connectors.



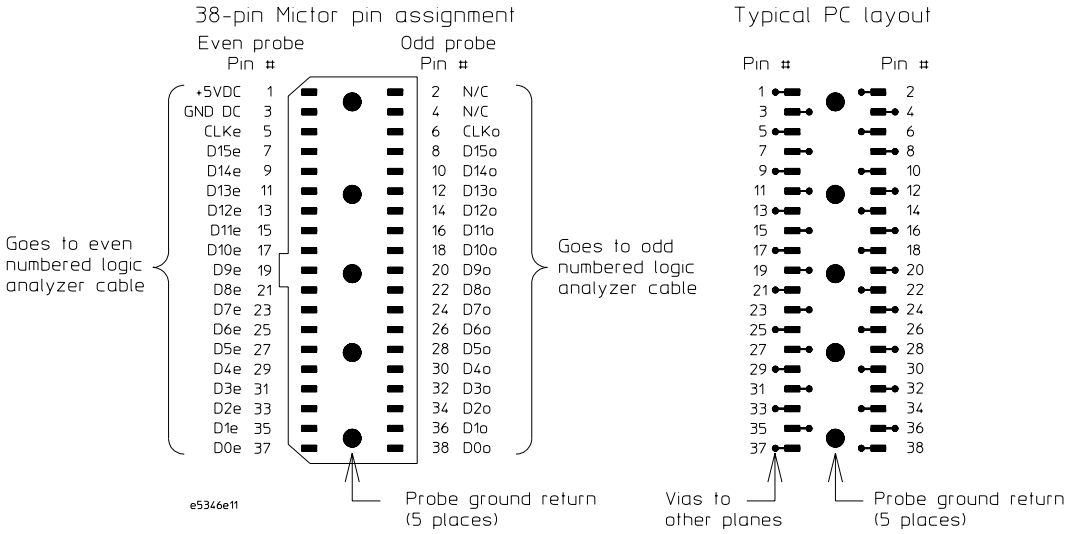
Board pad details of 38-pin MICTOR connector and support shroud



38-pin MICTOR connector dimensions



Support shroud dimensions



Top view surface mount receptacle

Pin 1 and pin 3. Do not use these pins.

Pins 5, 7, 9, ... 37. These pins are even numbered logic probe inputs. CLKe is the clock probe input used in state analysis. D15e to D0e on the even side are probe data inputs.

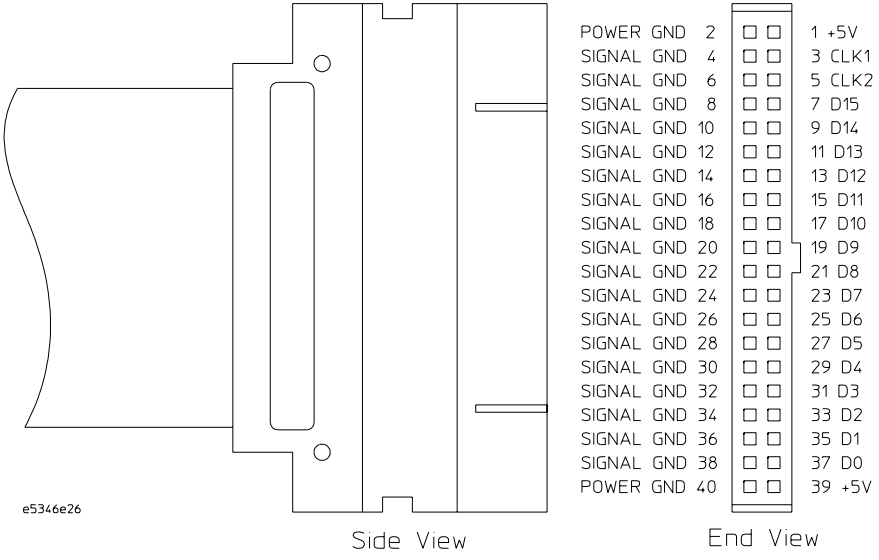
Pin 2 and pin 4. Do not connect these pins. They are SCL and SDA, which are used by the logic analyzer with an emulator or analysis probe (preprocessor) to program or read target information.

Pins 6, 8, 10, ... 38. These pins are odd numbered logic probe inputs. CLKo is clock probe input used in state analysis. D15o to D0o on the odd side are probe data inputs.

Grounds. There are five through-hole connections that are the ground returns for the 32 data and 2 clock probe inputs. This connection should be made to the target's digital ground plane as close to the target as possible.

Agilent E5346A Probe and E5351A Adapter Cable Pin Assignments			
AMP MICTOR-38 Connector		**Logic Analyzer Pods**	
Signal Name	**Pin Number**	**J1 (Even Pod)**	**J2 (Odd Pod)**
CLOCK even	5	3	
D15 even	7	7	
D14 even	9	9	
D13 even	11	11	
D12 even	13	13	
D11 even	15	15	
D10 even	17	17	
D9 even	19	19	
D8 even	21	21	
D7 even	23	23	
D6 even	25	25	
D5 even	27	27	
D4 even	29	29	
D3 even	31	31	
D2 even	33	33	
D1 even	35	35	
D0 even	37	37	
CLOCK odd	6		3
D15 odd	8		7
D14 odd	10		9
D13 odd	12		11
D12 odd	14		13
D11 odd	16		15
D10 odd	18		17
D9 odd	20		19
D8 odd	22		21
D7 odd	24		23
D6 odd	26		25
D5 odd	28		27
D4 odd	30		29
D3 odd	32		31
D2 odd	34		33
D1 odd	36		35
D0 odd	38		37

Agilent E5346A Probe and E5351A Adapter Cable Pin Assignments			
AMP MICTOR-38 Connector		**Logic Analyzer Pods**	
Signal Name	**Pin Number**	**J1 (Even Pod)**	**J2 (Odd Pod)**
GROUND	39-43	All even pins	All even pins
These pins are +5 volt supply and DC return for analysis probes.			
+5 VDC	1	1, 39	1, 39
GROUND	3	2, 40	2, 40
Do not connect the following pins. They are used by the logic analyzer with an emulator or analysis probe to program or read target information.			
SCL	2		5
SDA	4	5	



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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