

memorandum



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T10/05-265r0

To INCITS T10 Committee From Michael Banther, HP Subject ADT-2 Smaller Connector

Date 24 October 2005

Revision History

Revision 0 – Initial document.

Background

Several vendors have noted that the existing ADT connector requires a larger amount of space than they would like. HP proposes to address this concern by standardizing a new, smaller connector, based on the Molex PanelMate™ 51146-1400 plug and 53780-1490 jack.

Changes to the ADT-2 draft standard

5.3 Connector pin-out

ADT ports shall use ~~the~~ either:

- The plug connector defined in SFF-8054; or
- The plug connector defined in SFF-xxxx.

Editorial Note: Replace SFF-xxxx with the correct SFF name once it becomes available.

Table 8 defines the pinout for the ADT port connector on the DT device when using SFF-8054.

Table 8 – DT device ADT port connector pinout for SFF-8054

Pin Number	Connection Name
1	+ Tx _a - Rx _d
2	- Tx _a - Rx _d
3	Ground
4	- Tx _d - Rx _a
5	+ Tx _d - Rx _a
6	Sense _d
7	Sense _a
8	Reset _a
9	Signal _{aux}
10	Sense _{aux}

Table y defines the pinout for the ADT port connector on the DT device when using SFF-xxxx.

Table y – DT device ADT port connector pinout for SFF-xxxx

Pin Number	Connection Name
1	+ Tx _a - Rx _d
2	- Tx _a - Rx _d
3	Ground
4	- Tx _d - Rx _a
5	+ Tx _d - Rx _a
6	Sense _d
7	Sense _a
8	Reset _a
9	Signal _{aux}
10	Sense _{aux}
11	+3.3V
12	Signal _{aux}
13	Signal _{aux}
14	Ground



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Request for SFF standardization

This proposal authorizes the ADI-2 Chair to request that the Small Form Factor committee undertake to standardize the physical dimensions and tolerances of an ADI fixed board connector and an ADI free cable connector based on the Molex PanelMate™ 51146-1400 plug and 53780-1490 jack. As with SFF-8054, the SFF standard thus produced shall not include:

- a. Attachment of the ADI fixed board connector to a circuit board;
- b. Location of the ADI fixed board connector in a DT device or Automation device;
- c. Signal names assigned to the pins;
- d. Electrical characteristics of the connectors; and
- e. The protocols used for communications through the connectors.

FEATURES AND SPECIFICATIONS

Features and Benefits

- Sizes 2 to 30 circuits
- Very thin design (1.80mm)
- Housing lance provides extra terminal retention
- Friction lock provides secure mating
- Polarized design

Reference Information

Packaging: Bag

Use With: [50641](#) or [50753](#) terminal

Mates With: [53779](#), [53780](#), [55063](#), [55176](#), [55177](#)
and [55178](#)

Designed In: Millimeters

Electrical

Voltage: 125V

Current: 1.0A

Contact Resistance: 20mΩ max.

Dielectric Withstanding Voltage:

Mated with 55063, 53779 or 53780—250V AC

Mated with 55176, 55177 or 55178—500V AC

Insulation Resistance: 100 MΩ min.

Physical

Housing: PBTP, UL 94V-0

Operating Temperature:

Mated with 55063, 53779 or 53780 — -40 to +85°C

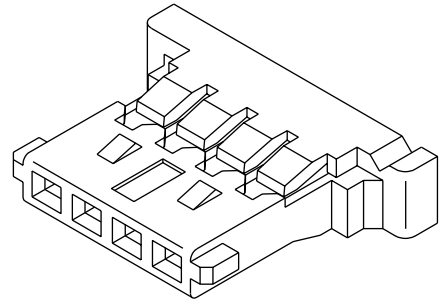
Mated with 55176, 55177 or 55178 — -40 to +105°C



1.25mm (.049") Pitch PanelMate™ Wire-to-Board Housing

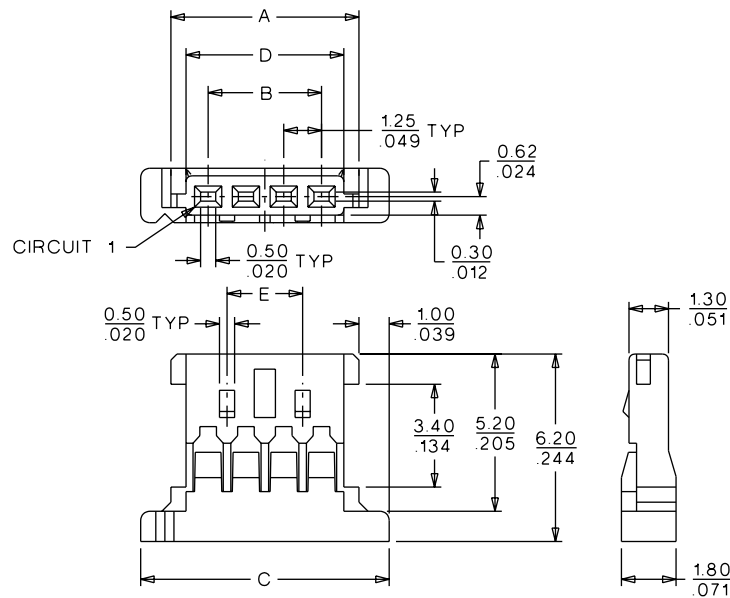
51146

Ultra Low Profile



0.40 to 1.60mm (.016 to .063") Pitch

CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.	Dimension				
		A	B	C	D	E
2	51146-0200	3.72 (.146)	1.25 (.049)	5.72 (.225)	2.72 (.107)	
3	51146-0300	4.97 (.195)	2.50 (.098)	6.97 (.274)	3.97 (.156)	
4	51146-0400	6.22 (.245)	3.75 (.148)	8.22 (.324)	5.22 (.206)	2.50 (.098)
5	51146-0500	7.47 (.294)	5.00 (.197)	9.47 (.373)	6.47 (.255)	3.75 (.148)
6	51146-0600	8.72 (.343)	6.25 (.246)	10.72 (.422)	7.72 (.304)	5.00 (.197)
7	51146-0700	9.97 (.393)	7.50 (.295)	11.97 (.471)	8.97 (.353)	6.25 (.246)
8	51146-0800	11.22 (.442)	8.75 (.334)	13.22 (.520)	10.22 (.402)	7.50 (.296)
9	51146-0900	12.47 (.491)	10.00 (.394)	14.47 (.570)	11.47 (.452)	8.75 (.344)
14	51146-1400	18.72 (.737)	16.25 (.640)	20.72 (.816)	17.72 (.695)	15.00 (.591)
15	51146-1500	19.97 (.786)	17.50 (.689)	21.97 (.865)	18.97 (.747)	16.25 (.640)
20	51146-2000	26.22 (1.032)	23.75 (.935)	28.22 (1.111)	25.22 (.993)	22.50 (.886)
22	51146-2200	28.72 (1.131)	26.25 (1.033)	30.72 (1.209)	27.72 (1.091)	22.50 (.886)
26	51146-2600	33.72 (1.328)	31.25 (1.230)	35.72 (1.406)	32.72 (1.288)	22.50 (.886)
30	51146-3000	38.72 (1.524)	36.25 (1.427)	40.72 (1.603)	37.72 (1.485)	22.50 (.886)

FEATURES AND SPECIFICATIONS

Features and Benefits

- Sizes 2 to 20 circuits
- Ultra low mating profile of 1.90mm (.075")
- Durable blade-type pins protect against damage during mating
- Metal solder tabs provide PCB retention and strain relief for SMT tails
- Solder-conducting fillet SMT tail design helps ensure stable solder joints
- Fully-shrouded anti-flux wicking design protects contacts during soldering and cleaning processes

Reference Information

Packaging: Embossed tape
 Mates With: [51146](#) and [54281](#)
 Designed In: Millimeters

Electrical

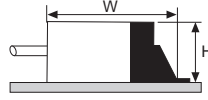
Voltage: 125V
 Current: 1.0A
 Contact Resistance:
 Mated with 51146—20mΩ max.
 Mated with 54281—40mΩ max.
 Dielectric Withstanding Voltage: 250V AC
 Insulation Resistance: 100 MΩ min.

Physical

Housing: PPHS, UL 94V-0
 Contact: Phosphor Bronze
 Plating: Gold (Tin/Lead on SMT tails)
 Solder Tabs: Phosphor Bronze, Tin/Lead plating
 Operating Temperature: -40 to +85°C

Mating Dimensions

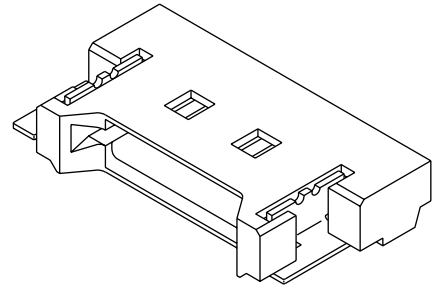
- 53780 • 51146 • 50641 or 50753
 H=1.90mm (.075")
 W=7.30mm (.287")
- 53780 • 54281
 H=1.90mm (.075")
 W=8.10mm (.319")



molex® 1.25mm (.049") Pitch PanelMate™ Wire-to-Board Header

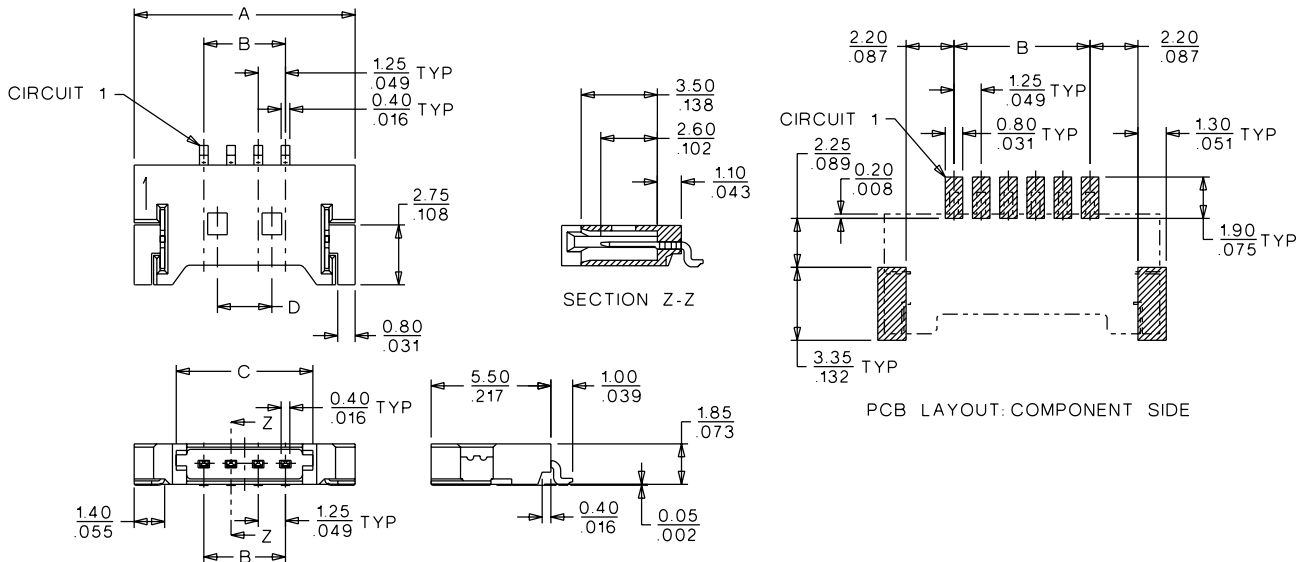
53780

Right Angle, SMT 1.90mm (.075") Profile



0.40 to 1.60mm (.016 to .063") Pitch

CATALOG DRAWING (FOR REFERENCE ONLY)



ORDERING INFORMATION AND DIMENSIONS

Circuits	Order No.	Dimension				Carrier Tape Width
		A	B	C	D	
2	53780-0290	7.65 (.301)	1.25 (.049)	3.77 (.148)		16.00 (.630)
3	53780-0390	8.90 (.350)	2.50 (.098)	5.02 (.189)		16.00 (.630)
4	53780-0490	10.15 (.400)	3.75 (.148)	6.27 (.247)	2.50 (.098)	24.00 (.945)
5	53780-0590	11.40 (.449)	5.00 (.197)	7.52 (.296)	3.75 (.148)	24.00 (.945)
6	53780-0690	12.65 (.498)	6.25 (.246)	8.77 (.345)	5.00 (.196)	24.00 (.945)
7	53780-0790	13.90 (.547)	7.50 (.295)	10.02 (.394)	6.25 (.246)	24.00 (.945)
8	53780-0890	15.15 (.596)	8.75 (.344)	11.27 (.502)	7.50 (.296)	24.00 (.945)
9	53780-0990	16.40 (.646)	10.00 (.394)	12.52 (.493)	8.75 (.344)	24.00 (.945)
14	53780-1490	22.65 (.892)	16.25 (.640)	18.77 (.739)	15.00 (.591)	44.00 (1.732)
15	53780-1590	23.90 (.941)	17.50 (.689)	20.02 (.789)	16.25 (.640)	44.00 (1.732)
20	53780-2090	30.15 (1.187)	23.75 (.935)	26.27 (1.034)	22.50 (.886)	44.00 (1.732)