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ELECTRONICS

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Serial ATA\* –

The Next Wave Of Storage

Interconnect Applications



# Serial ATA Board-to-Board and Cable-to-Board Solutions To Meet All Storage Applications

Changing applications in digital consumer technology are re-shaping the storage application landscape. Moving beyond traditional desktop and network storage applications, Serial ATA is quickly becoming an integral part of consumer electronic products with integrated hard disk drives.

With applications that include HDD-DVD recorders, home servers, multimedia hubs, LCD TVs digital jukeboxes, HDD-enabled game consoles, set-top boxes with personal video recorders, audio players and audiovisual devices for the automotive industry, insuring a secure connection is a primary concern.

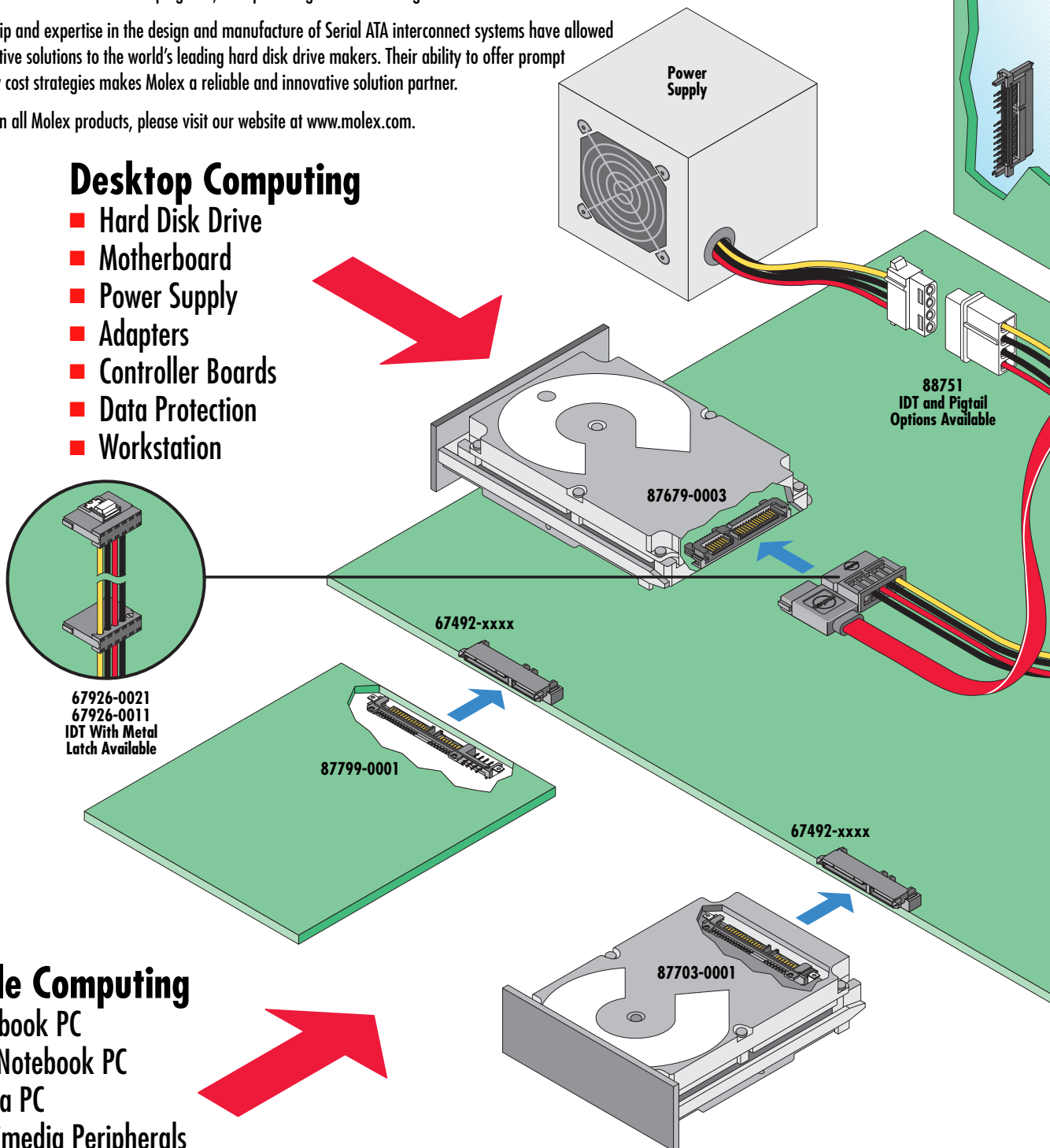
To address this concern Molex has incorporated a stainless steel latch into the design of its Serial ATA cable receptacles. When mated with a latch-designed plug, the metal latch catches the latch window on the plug side, thus providing a secure locking action.

Molex's global leadership and expertise in the design and manufacture of Serial ATA interconnect systems have allowed them to provide innovative solutions to the world's leading hard disk drive makers. Their ability to offer prompt time-to-market and low cost strategies makes Molex a reliable and innovative solution partner.

For more information on all Molex products, please visit our website at [www.molex.com](http://www.molex.com).

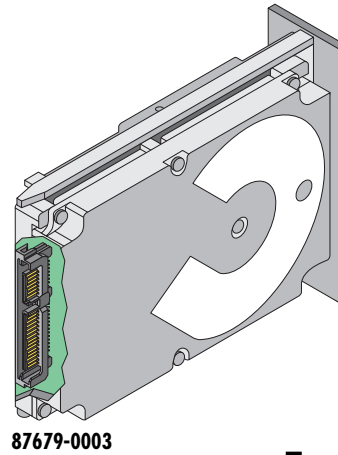
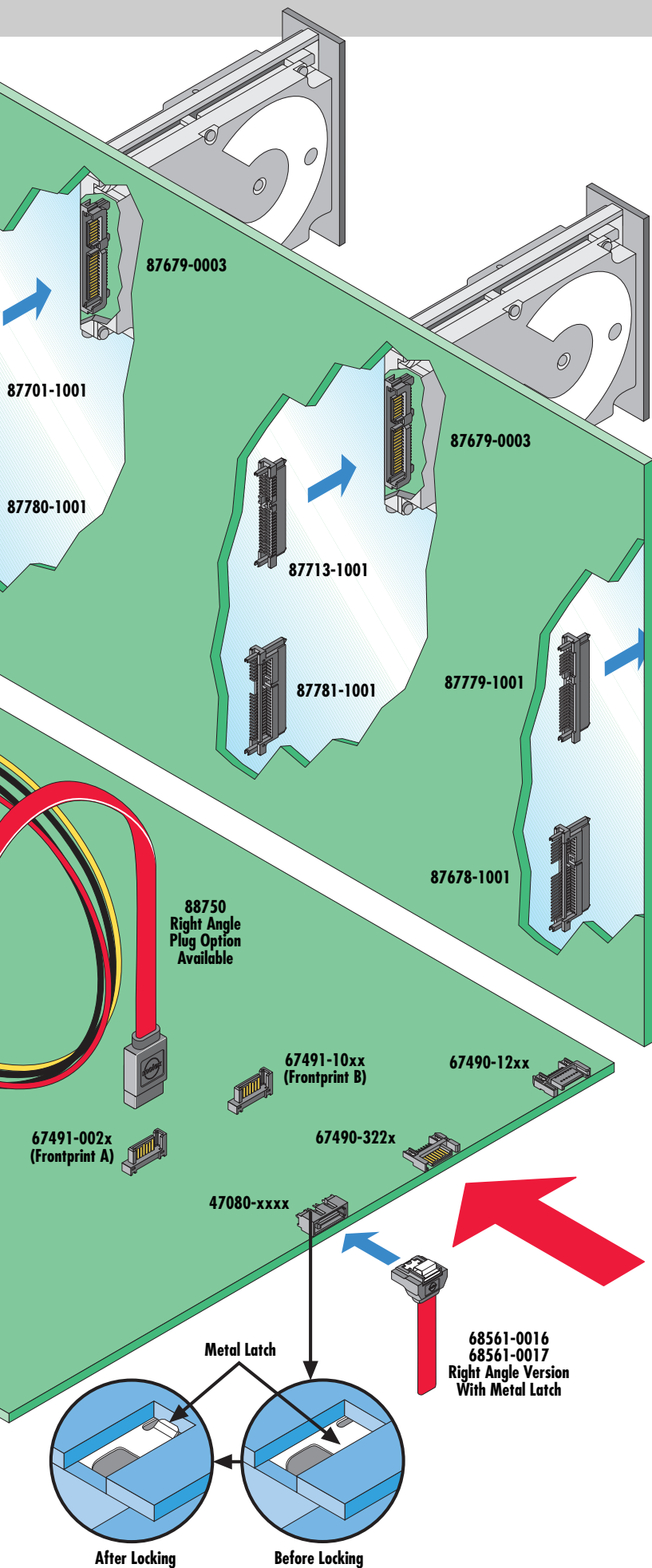
## Desktop Computing

- Hard Disk Drive
- Motherboard
- Power Supply
- Adapters
- Controller Boards
- Data Protection
- Workstation



## Mobile Computing

- Notebook PC
- Sub-Notebook PC
- Media PC
- Multimedia Peripherals



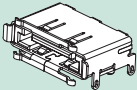
## Enterprise Computing

- Mid Range Servers
- Network Storage
- RAID Storage
- Backplane
- Internet Services

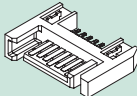
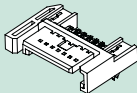
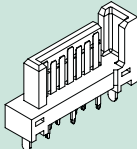
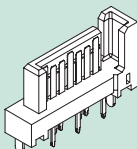
## Emerging Trends

- Set-Top Box
- Digital Audio
- Automotive – Navigation
- Brown Goods
- Optical Drives
- HDTV Home Theatre
- Games – 3D Video

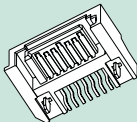
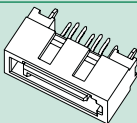
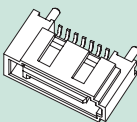
## EXTERNAL SATA RECEPTACLE

	Description	Lead-Free Order No.	Features						
			Plating	Housing Color	PC Tail Length	Peg Type And Length	Packaging		Mates With
	External SATA Receptacle, SMT, Metal Shell	47082-0000	Gold Flash	Black	NA	Flat Metal Peg	Embossed Tape On Reel	With Mylar	External Serial ATA Plug
		47082-2000	0.76µm/30µ" Gold						
		47082-1000	0.38µm/15µ" Gold						

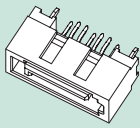
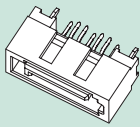
## SIGNAL PLUGS

	Description	Lead-Free Order No.	Features									
			Plating	Housing Color	PC Tail Length	Peg Type And Length	Packaging		Mates With			
	Right Angle SMT Signal Plug (Reverse Mount)	67490-3220	Gold Flash	Black	NA		Tray		<div>Cable Assemblies 88750-5310 8750-5318 88750-5400 88750-5410</div> <div>Signal Cable Assemblies 67489-100y 67489-800y</div>			
		67490-3221	0.76µm/30µ" Gold									
		67490-3225	0.38µm/15µ" Gold									
	Right Angle SMT Signal Plug (Standard Mount)	67490-1220	Gold Flash							Embossed Tape On Reel	With Mylar	
		67490-1221	0.76µm/30µ" Gold									
		67490-1225	0.38µm/15µ" Gold									
		67490-1230	Gold Flash									
		67490-1231	0.76µm/30µ" Gold				Tube					
		67490-1235	0.38µm/15µ" Gold									
		67490-1240	Gold Flash									
		67490-1241	0.76µm/30µ" Gold									
		67490-1245	0.38µm/15µ" Gold									
	88750-5418 Vertical Through Hole Signal Plug (Footprint A)	67491-0020	Gold Flash		2.05mm	Flat Metal Peg	Tray					
		67491-0021	0.76µm/30µ" Gold									
		67491-0022	0.38µm/15µ" Gold									
		67491-0025	Gold Flash		2.35mm							
		67491-0026	0.76µm/30µ" Gold									
		67491-0027	0.38µm/15µ" Gold									
	Vertical Through Hole Signal Plug (Footprint B)	67491-1030	Gold Flash		2.05mm			Tray				
		67491-1031	0.76µm/30µ" Gold									
		67491-1032	0.38µm/15µ" Gold									
		67491-1035	Gold Flash		2.35mm							
		67491-1036	0.76µm/30µ" Gold									
		67491-1037	0.38µm/15µ" Gold									
		67491-1038	Gold Flash		3.00mm							
		67491-1039	0.76µm/30µ" Gold									
		67491-1040	0.38µm/15µ" Gold									

**SIGNAL PLUGS**

	Description	Lead-Free Order No.	Features						
			Plating	Housing Color	PC Tail Length	Peg Type And Length	Packaging		Mates With
	Right Angle SMT Plug With Peg, Latch Type	47080-4001	Gold Flash	Black	NA	Flat Metal Peg 2.60mm	Embossed Tape On Reel	With Mylar	67489 88750-5310 88750-5318 88750-5410 88750-5418
		47080-4002	0.76µm/30µ" Gold						
		47080-4005	0.38µm/15µ" Gold						
		47080-5001	Gold Flash	Natural					
		47080-5002	0.76µm/30µ" Gold						
		47080-5005	0.38µm/15µ" Gold						
		47080-6001	Gold Flash	Blue					
		47080-6002	0.76µm/30µ" Gold						
		47080-6005	0.38µm/15µ" Gold						
	Vertical Through Hole Signal Plug, Latch Type	47155-4001	Gold Flash	Black	2.10mm PC Tail	Flat Metal Peg 2.65mm	Tray		
		47155-4031		Blue					
		47155-4041		Natural					
				Vertical SMT Signal Plug, Latch Type				67800-5001	
67800-5002	0.76µm/30µ" Gold		Round Peg 3.45mm						
67800-5005	0.38µm/15µ" Gold								
67800-5021	Gold Flash								
67800-5022	0.76µm/30µ" Gold								
67800-5025	0.38µm/15µ" Gold								

**SIGNAL PLUGS**

	Description	Lead-Free Order No.	Features					
			Plating	Housing Color	PC Tail Length	Peg Type And Length	Packaging	Mates With
	Vertical Through Hole Signal Plug, Latch Type (Footprint A)	67800-8X0Y	For plating information please see the plating key below	Black	2.45mm	Flat Metal Peg	Tray	Cable Assemblies 68561-0014 68561-0015 68561-0016 68561-0017  Signal Cable Receptacles 67489-000y 67489-200y 67489-700y 67489-200y
		67800-8X1Y			2.85mm			
		67800-8X2Y			3.25mm			
		67800-8X3Y		Blue	2.45mm			
		67800-8X7Y			2.85mm			
		67800-8X8Y			3.25mm			
		67800-8X4Y		Natural	2.45mm			
		67800-8X5Y			2.85mm			
		67800-8X6Y			3.25mm			
	Vertical Through Hole Signal Plug, Latch Type (Footprint B)	67800-7X0Y		Black	2.45mm			
		67800-7X1Y			2.85mm			
		67800-7X2Y			3.25mm			
		67800-7X3Y		Blue	2.45mm			
		67800-7X7Y			2.85mm			
		67800-7X8Y			3.25mm			
		67800-7X4Y		Natural	2.45mm			
		67800-7X5Y			2.85mm			
		67800-7X6Y			3.25mm			

Housing Material

Replace X With:

0 = Thermoplastic

1 = High Temperature Thermoplastic

Contact Plating

Replace Y With:



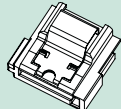

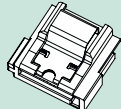

1 = Gold Flash

2 = 0.76µm/30µ" Gold

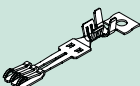
5 = 0.38µm/15µ" Gold

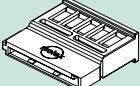


**SIGNAL CABLE RECEPTACLES**

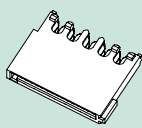
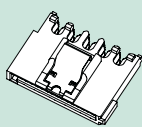
	Description	Lead-Free Order No.	Features						
			Plating	Locking	Packaging	Mates With			
	Right Angle Signal Receptacle	67489-1001	Gold Flash	Friction Locking	Tray	67490 67491			
		67489-1002	0.76µm/30µ" Gold						
		67489-1005	0.38µm/15µ" Gold						
	Vertical Signal Receptacle	67489-8001	Gold Flash				Friction Locking	Tray	67490 67491
		67489-8002	0.76µm/30µ" Gold						
		67489-8005	0.38µm/15µ" Gold						
<div> </div>	Right Angle Signal Receptacle With Metal Latch	67489-0001	Gold Flash	Metal Latch	Tray	47080 47155 67800			
		67489-0002	0.76µm/30µ" Gold						
		67489-0005	0.38µm/15µ" Gold						
		67489-2001	Gold Flash	Metal Latch And Friction Locking					
		67489-2002	0.76µm/30µ" Gold						
		67489-2005	0.38µm/15µ" Gold						
<div> </div>	Vertical Signal Receptacle With Metal Latch	67489-9001	Gold Flash	Metal Latch	Tray		47080 47155 67800		
		67489-9002	0.76µm/30µ" Gold						
		67489-9005	0.38µm/15µ" Gold						
		67489-7001	Gold Flash	Metal Latch And Friction Locking					
		67489-7002	0.76µm/30µ" Gold						
		67489-7005	0.38µm/15µ" Gold						

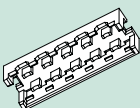
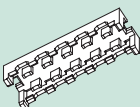
**POWER CONNECTORS**

	Description	Lead-Free Order No.	Features				
			Plating	Reel Direction	Wire Guage	Packaging	Mates With
	Crimp Power Terminal	67581-0000	Gold Flash	Clockwise	18 AWG	Reel	67582
		67581-0001	0.76µm/30µ" Gold	Clockwise			
		67581-0002	0.38µm/15µ" Gold	Clockwise			
		67581-0010	Gold Flash	Anti-Clockwise			
		67581-0011	0.76µm/30µ" Gold	Anti-Clockwise			
		67581-0012	0.38µm/15µ" Gold	Anti-Clockwise			
		47128-1000	Gold Flash	Anti-Clockwise	18 AWG 22 AWG		
		47128-1001	0.76µm/30µ" Gold	Anti-Clockwise			
		47128-1002	0.38µm/15µ" Gold	Anti-Clockwise			
		47128-1009	Unplated	Anti-Clockwise			

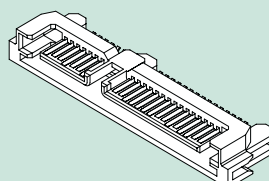
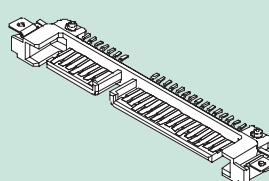
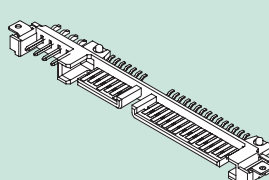
	Description	Lead-Free Order No.	Housing Material	Packaging	Mates With
	Crimp Power Housing	67582-0000	Thermoplastic	Bag	67581 47128

## POWER CONNECTORS

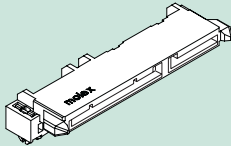
	Description	Lead-Free Order No.	Features			
			Plating	Locking	Packaging	Mates With
<div> Without Latch</div> <div> With Latch</div>	IDT Power Receptacle	67926-0001	Gold Flash	Metal Latch	Tray	87679  Use With: 67926-0040 67926-0041
		67926-0002	0.76µm/30µ" Gold			
		67926-0005	0.38µm/15µ" Gold			
		67926-0011	Gold Flash	Friction Locking		
		67926-0012	0.76µm/30µ" Gold			
		67926-0015	0.38µm/15µ" Gold			
		67926-0021	Gold Flash	Metal Latch And Friction Locking		
		67926-0022	0.76µm/30µ" Gold			
		67926-0025	0.38µm/15µ" Gold			

	Description	Lead-Free Order No.	Termination Style	Unmated Height	Packaging	Mates With
	Feed-To Cover For IDT Power Receptacle	67926-0040	Feed-To	4.99mm (.198")	Bag	67926-000* 67926-001*
	Feed-Through Cover For IDT Power Receptacle	67926-0041	Feed-Through	4.90mm (.193")		

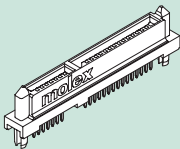
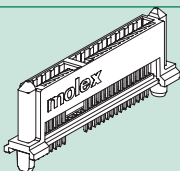
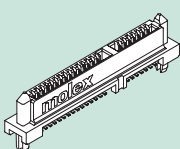
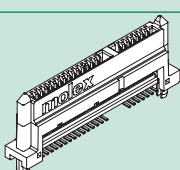
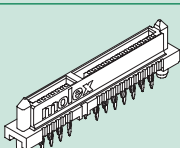
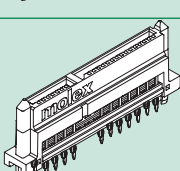
## COMBO PLUGS

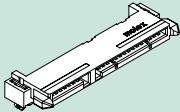
	Description	Lead-Free Order No.	Features					
						Mates With		
						Board-to-Board	Cable-to-Board	
			Plating	Locking	Packaging	Combo Receptacles	Signal	Power
	Device Plug With Latching Straddle Mount	87679-0003	Gold Flash	Metal Latch And Friction Locking	Tray	67492 87678 87701 87713 87779 87780 87781 47162 47018	67489 88750 88762	88751 88757 88761
	Device Plug SMT Without Jumper	87703-0001		Friction Locking				
	Device Plug, SMT With Jumper	87799-0001						

**COMBO RECEPTACLES**

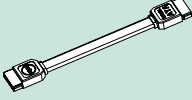
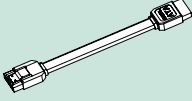
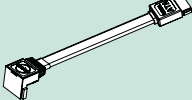
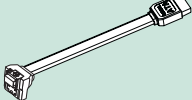
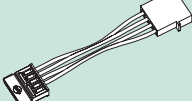
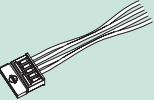
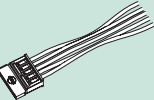
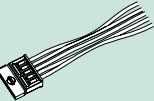
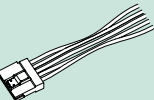
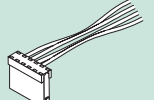
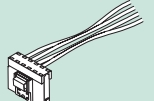
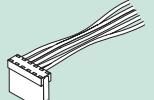
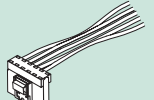
	Description	Lead-Free Order No.	Features				
			Plating	Housing Color	Unmated Height	Packaging	Mates With
	Right Angle SMT Receptacle	67492-1120	Gold Flash	Black	3.55mm (.140")	Tray	Combo Plugs 87679 87703 87799
		67492-1121	0.76µm/30µ" Gold				
		67492-1122	0.38µm/15µ" Gold				
		67492-1123	Gold Flash Over Palladium-Nickel				
		67492-1320	Gold Flash		5.25mm (.207")		
		67492-1321	0.76µm/30µ" Gold				
		67492-1322	0.38µm/15µ" Gold				
		67492-1323	Gold Flash Over Palladium-Nickel				
		67492-1420	Gold Flash		5.90mm (.232")		
		67492-1421	0.76µm/30µ" Gold				
		67492-1422	0.38µm/15µ" Gold				
		67492-1423	Gold Flash Over Palladium-Nickel				
		67492-9220	Gold Flash		6.74mm (.285")		
		67492-9221	0.76µm/30µ" Gold				
		67492-9222	0.38µm/15µ" Gold				
		67492-9223	Gold Flash Over Palladium-Nickel				

**COMBO RECEPTACLES**

	Description	Lead-Free Order No.	Features		
			Plating	PCB Thickness	Mates With
	Vertical Backplane Receptacle, Through Hole, Standard Height	87779-1001	0.76μm/30μ" Gold	0.8mm (0.031") – 2.5mm (0.098")	87703 87679 87799
	Vertical Backplane Receptacle, Through Hole, Extended Height	87678-1001			
	Vertical Host SMT Receptacle, Standard Height	87713-1001			
	Vertical Host Receptacle, SMT, Extended Height	87781-1001			
	Vertical Host Receptacle, Press-Fit, Standard Height	87701-1001		1.50mm (0.059") – 2.0mm (0.079")	
	Vertical Host Receptacle, Press-Fit, Extended Height	87780-1001			

	Description	Lead-Free Order No.	Features		
			Plating	Unmated Height	Mates With
	Host Receptacle, SMT, Right Angle, Top Mount	47018-2000	Gold Flash	4.30mm (.169")	87679 87703 87799
		47018-2001	0.76µm/30µ" Gold		
		47018-2002	0.38µm/15µ" Gold		
		47018-3000	Gold Flash	4.70mm (.185")	
		47018-3001	0.76µm/30µ" Gold		
		47018-3002	0.38µm/15µ" Gold		
		47018-4000	Gold Flash	5.15mm (.203")	
		47018-4001	0.76µm/30µ" Gold		
		47018-4002	0.38µm/15µ" Gold		

**CABLE ASSEMBLIES**

	Description	Lead-Free Order No.	Features		Mates With	
	Signal Cable Assembly, Straight-To-Straight	88750-5310	0.5m, Grey	Contact Plating: 0.76µm/30µ" Gold	Signal Plugs	Combo Plugs
		88750-5318	0.5m, Red		67490 67491	87679 87703 87799
		88750-5418	1.0m, Red			
	Signal Cable Assembly, Straight Latching-To-Straight Latching	68561-0014	0.5m, Red		67800 47080	87679
		68561-0015	1.0m, Red			
	Signal Cable Assembly, Straight-To-Right Angle	88762-5400	0.5m, Red		67490 67491	87679 87703 87799
		88762-5410	1.0m, Red			
	Signal Cable Assembly, Straight Latching-To-Right Angle Latching	68561-0016	0.5m, Red		67800 47080	87679
		68561-0017	1.0m, Red			
	Power Adapter, Crimping Type	88751-1310	6", Gold flash, (5V+12V)		NA	87679 87703 87799
		88751-1311	6", 0.76µm/30µ" Gold, (5V+12V)			
	4-pin Power Harness To Pigtail, Crimping Type	88751-1410	1.5m, Gold Flash, (5V+12V)			
		88751-1411	1.5m, 0.76µm/30µ" Gold, (5V+12V)			
	5-pin Power Harness To Pigtail, Crimping Type	88757-7810	1.5m, Gold Flash, (3.3V+5V+12V)			
		88757-7811	1.5m, 0.76µm/30µ" Gold, (3.3V+5V+12V)			
	Power Adapter, IDT Type	88761-4500	6", Gold Flash, (5V+12V) Feed-To Version			87679 87703 87799
		88761-4510	6", 0.76µm/30µ" Gold, (5V+12V) Feed-To-Version			
	Power Adapter, IDT With Latch Type	68561-0018	6", Gold Flash, (5V+12V) Feed-To Version			
		68561-0019	6", 0.76µm/30µ" Gold, (5V+12V) Feed-To-Version			
	4-pin Power Harness To Pigtail, IDT Type	88761-4600	1.5m, Gold Flash, (5V+12V) Feed-To Version			
		88761-4610	1.5m, 0.76µm/30µ" Gold, (5V+12V) Feed-To-Version			
	4-pin Power Harness To Pigtail, IDT With Latch Type	68561-0020	1.5m, Gold Flash, (5V+12V) Feed-To Version			87679
		68561-0021	1.5m, 0.76µm/30µ" Gold, (5V+12V) Feed-To-Version			
	5-pin Power Harness To Pigtail, IDT Type	88761-4700	1.5m, Gold Flash, (3.3V+5V+12V) Feed-To Version			87679 87703 87799
		88761-4710	1.5m, 0.76µm/30µ" Gold, (3.3V+5V+12V) Feed-To-Version			
	5-pin Power Harness To Pigtail, IDT With Latch Type	68561-0022	1.5m, Gold Flash, (3.3V+5V+12V) Feed-To Version			87679
		68561-0023	1.5m, 0.76µm/30µ" Gold, (3.3V+5V+12V) Feed-To-Version			



# PRODUCT SPECIFICATION

## SERIAL ATA HOST RECEPTACLE

### 1.0 SCOPE

This Product Specification covers the performance requirements of the Serial ATA / High Speed Serialized host receptacle connector.

### 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT NAME AND SERIES NUMBER(S)

##### Product Name

##### Part Number

SERIAL ATA RECEPTACLE, VERTICAL SINGLE-IN-LINE  
SURFACE MOUNT BACKPLANE (STANDARD HEIGHT)

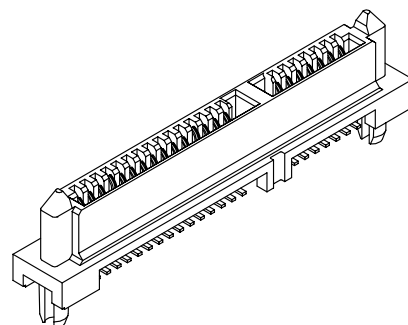
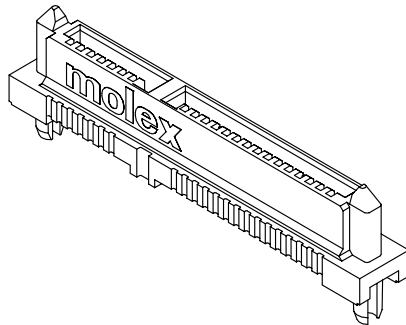
87713-0001

#### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See Sales Drawing SD-87713-001 for information on dimensions, materials, platings and markings.

#### 2.3 SAFETY AGENCY APPROVALS

UL FILE : TBD  
CSA : TBD



REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
<b>2</b>	EC No: <b>S2003-0481</b> DATE: <b>2003 / 04 / 07</b>	<b>SERIAL ATA HOST RECEPTACLE VERTICAL SIL SMT BACKPLANE</b>	<b>1 of 6</b>
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
<b>PS-87713-016</b>	<b>Daniel Koh</b>	<b>K.C. Ling (2002/09/18)</b>	<b>S.K. Toh (2002/09/19)</b>



# PRODUCT SPECIFICATION

## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See the Sales Drawing and other sections of this Specification for the necessary referenced Documents and Specifications.

Serial ATA Workgroup Specification

## 4.0 RATINGS

### 4.1 VOLTAGE

30 Volts Max.

### 4.2 CURRENT

1.5 Amps DC or AC (RMS). Max. @ 60 Hz

### 4.3 TEMPERATURE

Operating: - 40°C to + 105°C

### 4.4 HUMIDITY

20% - 80%

### 4.5 PRESSURE

650 mm – 800 mm Hg

## 5.0 PERFORMANCE

### 5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Low Level Contact Resistance (LLCR)	Subject mated contacts assembled in housing to 20 mV maximum open circuit at 100 mA maximum. (EIA 364-23)	30 mΩ MAXIMUM [initial]  Resistance increase 15 mΩ MAXIMUM [after stress]
2	Contact Current Rating (Power Segment)	Mount connector to a test PCB with ½ oz copper layer. Wire power pins P1, P2, P8 and P9 in parallel for power. Wire ground pins P4, P5, P6, P10 and P12 in parallel for return. Supply 6A total DC current to the power pins in parallel (P1, P2, P8 and P9), returning from the parallel ground pins (P4, P5, P6, P10 and P12). Record temperature rise when thermal equilibrium is reach.	1.5 A per pin MINIMUM  Temperature rise shall not exceed 30°C at any point in the connector when contacts are powered  Still Air at Ambient temperature 25°C

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PS-87713-016	Daniel Koh	K.C. Ling (2002/09/18)	S.K. Toh (2002/09/19)



# PRODUCT SPECIFICATION

3	<b>Insulation Resistance</b>	After <b>500</b> VDC for <b>1</b> minute, measure the insulation resistance between adjacent terminals of the mated and unmated connector assemblies. (EIA 364-21)	<b>1000</b> Megohms MINIMUM
4	<b>Dielectric Withstanding Voltage</b>	Subject a voltage of <b>500</b> VAC for <b>1</b> minute between adjacent terminals of mated and unmated connector at sea level. (EIA 364-20)	No breakdown

## 5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	<b>Connector Insertion and Removal Forces</b>	Mate and Unmate connector assemblies at a rate of <b>12.5</b> mm per minute. (EIA 364-13)	<b>45 N</b> MAXIMUM insertion force & <b>5 N</b> MINIMUM removal force
6	<b>Durability</b>	<b>50</b> cycles for internal cabled application ; <b>500</b> cycles for backplane/blindmate application. All at a maximum rate of <b>200</b> cycles per hour. (EIA 364-09)	No Physical damage  Meet requirements of additional tests as specified in the test sequence in Section 7.0
7	<b>Resistance to Soldering Heat</b>	Subject connector to <b>225°C</b> for <b>1</b> minute, <b>235°C</b> for <b>15</b> seconds and <b>260°C</b> for <b>10</b> seconds.	No damage in appearance of connector  <b>60.0 N</b> MINIMUM housing slip-out force
8	<b>Housing Slip-Out Force</b>	Apply axial pull out force on housing at a rate of <b>25.4</b> mm per minute.	<b>60.0 N</b> MINIMUM housing slip-out force

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DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
<b>PS-87713-016</b>	<b>Daniel Koh</b>	<b>K.C. Ling (2002/09/18)</b>	<b>S.K. Toh (2002/09/19)</b>

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# PRODUCT SPECIFICATION

## 5.3 ENVIROMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
9	Humidity	Subject the connector to temperature and humidity of <b>40°C</b> at <b>95%</b> RH for <b>96</b> hours. (EIA 364-31 Method II Test Condition A)	No Physical damage  Meet requirements of additional tests as specified in the test sequence in Section 7.0
10	Physical Shock	Subject mated connector to <b>30 g's</b> half-sine shock pulses of <b>11 msec</b> duration. Three shocks in each direction applied along three mutually perpendicular planes for a total of <b>18</b> shocks. (EIA 364-27 Condition H)	No Physical damage  No discontinuities of <b>1 μs</b> or longer duration  Test Set-Up in Section 8.0
11	Random Vibration	Subject mated connector to <b>5.35 g's</b> RMS. <b>30</b> minutes in each of the three mutually perpendicular planes. (EIA 364-28 Condition V Test letter A)	No discontinuities of <b>1 μs</b> or longer duration  Test Set-Up in Section 8.0
12	Solderability	Immerse the end terminals in rosin for <b>5-10</b> seconds then immerse them in a soldering bath of <b>245°C ± 5°C</b> for <b>5</b> seconds.	No discontinuities of <b>1 μs</b> or longer duration  Test Set-Up in Section 8.0
13	Temperature Life	Subject mated connector to temperature life at <b>+85°C</b> for <b>500</b> hours. (EIA 364-17 Test Condition III Method A)	No Physical damage  Meet requirements of additional tests as specified in the test sequence in Section 7.0
14	Thermal Shock	Subject connector to <b>10</b> cycles between <b>-55°C</b> and <b>+85°C</b> . (EIA 364-32 Test Condition I)	No Physical damage  Meet requirements of additional tests as specified in the test sequence in Section 7.0

## 6.0 PACKAGING

Refer to Sales Drawing SD-87713-001 for packaging details.

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<b>2</b>	EC No: <b>S2003-0481</b> DATE: <b>2003 / 04 / 07</b>	<b>SERIAL ATA HOST RECEPTACLE VERTICAL SIL SMT BACKPLANE</b>	<b>4 of 6</b>
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
<b>PS-87713-016</b>	<b>Daniel Koh</b>	<b>K.C. Ling (2002/09/18)</b>	<b>S.K. Toh (2002/09/19)</b>



# PRODUCT SPECIFICATION

## 7.0 TEST SEQUENCES

### 5.3 ENVIROMENTAL REQUIREMENTS

Test Group →	A	B	C	D	E	F
Test or Examination ↓						
Examination of the connector(s)	1, 5	1, 9	1, 8	1, 8	1	
Low Level Contact Resistance (LLCR)	2, 4	3, 7	2, 4, 6			
Insulation Resistance				2, 6		
Dielectric Withstanding Voltage				3, 7		
Current Rating			7			
Insertion Force		2				
Removal Force		8				
Durability	3	4 <sup>(a)</sup>				
Physical Shock		6				
Vibration		5				
Humidity				5		
Temperature Life			3			
Reseating (manually unplug/plug three times)			5			
Thermal Shock				4		
Terminal/Pin Retention Force					2, 4	
Resistance to Soldering Heat					3	
Solderability						1
Note – (a) Preconditioning, 20 cycles for the 50-durability cycle requirement, 50 cycles for the 500-durability cycles requirement. The insertion and removal cycle is at the maximum rate of 200 cycles per hour.						

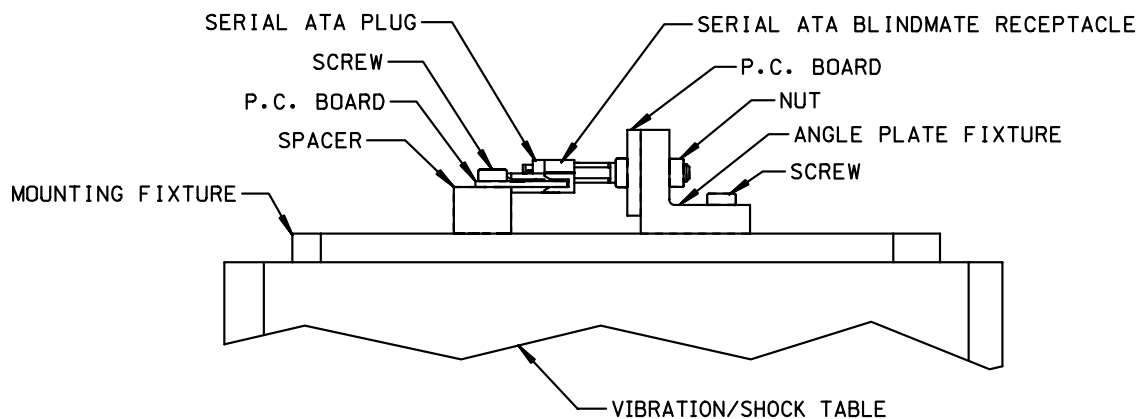
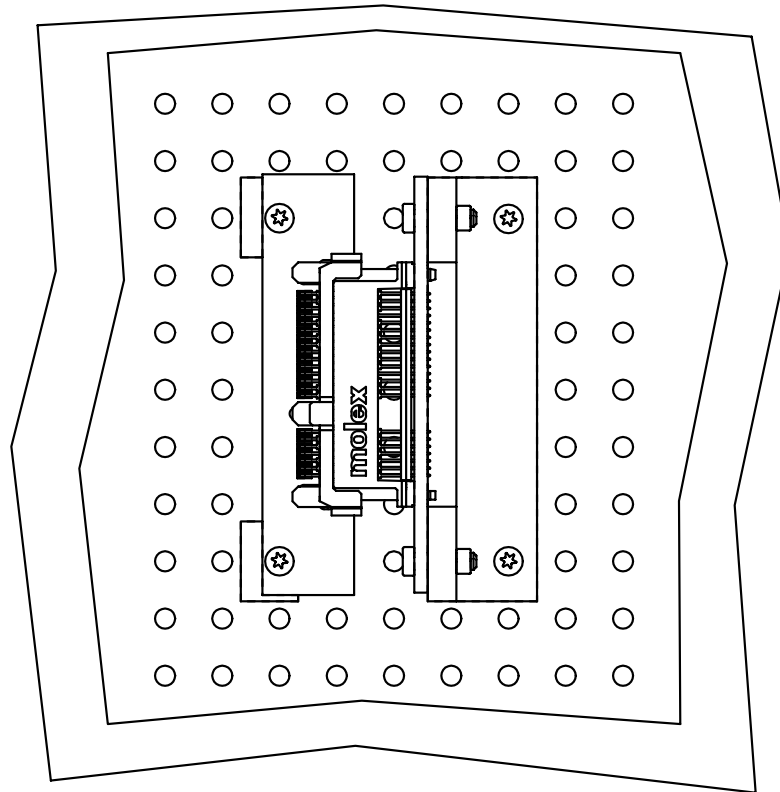
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<b>2</b>	EC No: <b>S2003-0481</b> DATE: <b>2003 / 04 / 07</b>	<b>SERIAL ATA HOST RECEPTACLE VERTICAL SIL SMT BACKPLANE</b>	<b>5 of 6</b>
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
<b>PS-87713-016</b>	<b>Daniel Koh</b>	<b>K.C. Ling (2002/09/18)</b>	<b>S.K. Toh (2002/09/19)</b>
TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A4](V.1).DOC			



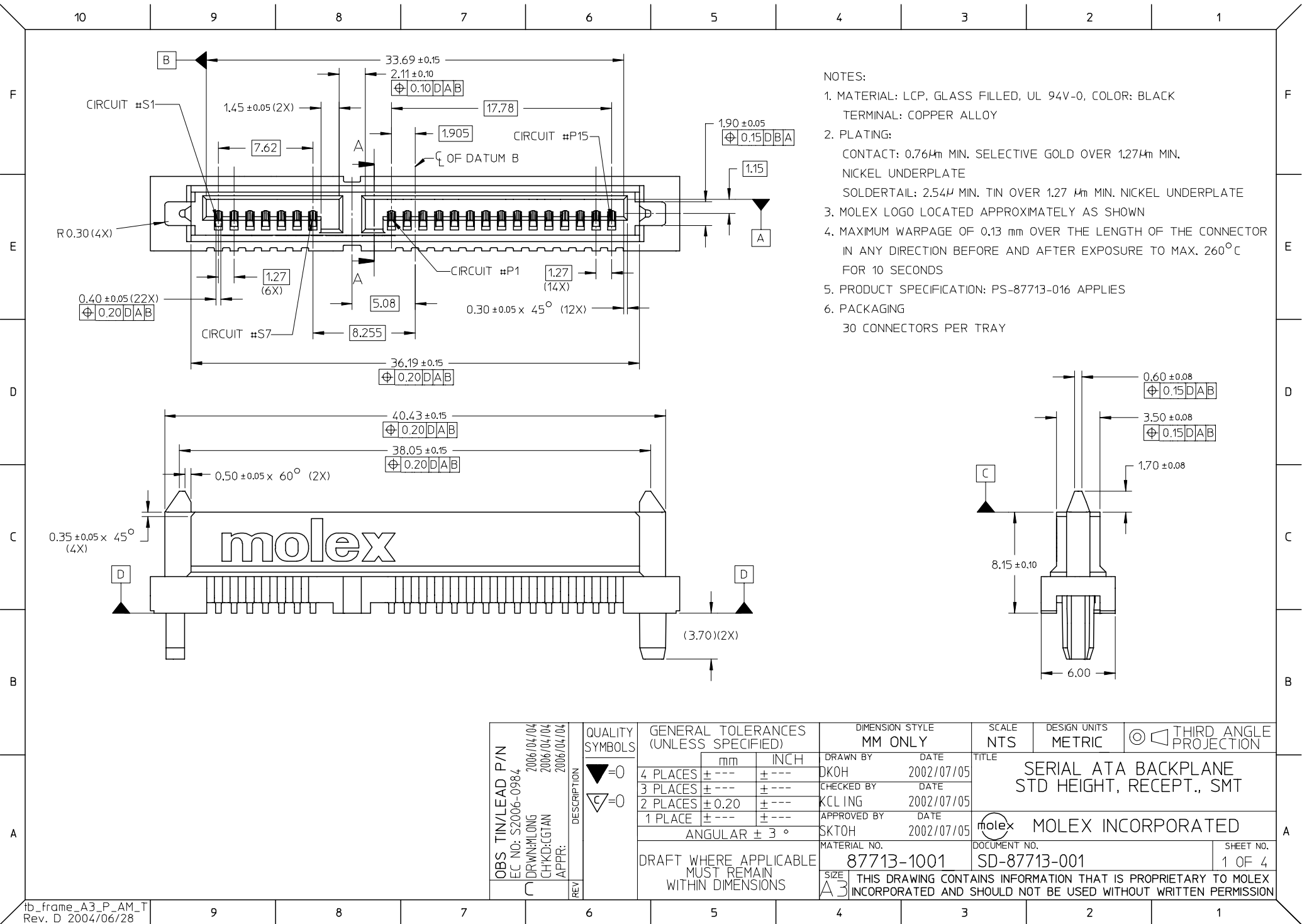
# PRODUCT SPECIFICATION

## 8.0 VIBRATION/SHOCK TEST SET-UP

Serial ATA Plug with Blindmate Receptacle



REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
<b>2</b>	EC No: <b>S2003-0481</b> DATE: <b>2003 / 04 / 07</b>	<b>SERIAL ATA HOST RECEPTACLE VERTICAL SIL SMT BACKPLANE</b>	<b>6 of 6</b>
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
<b>PS-87713-016</b>	<b>Daniel Koh</b>	<b>K.C. Ling (2002/09/18)</b>	<b>S.K. Toh (2002/09/19)</b>
TEMPLATE FILENAME: PRODUCT_SPEC[SIZE_A4](V.1).DOC			



10 9 8 7 6 5 4 3 2 1

F

E

D

C

B

A

F

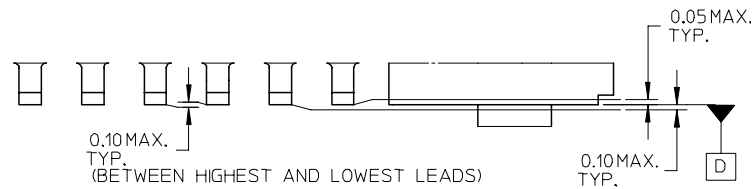
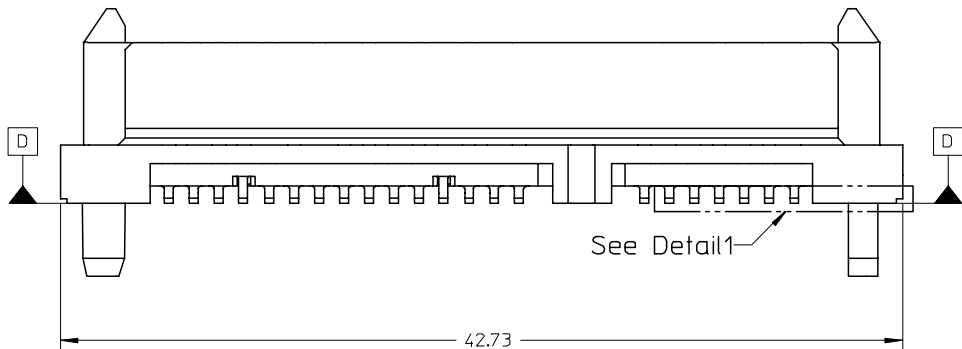
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D

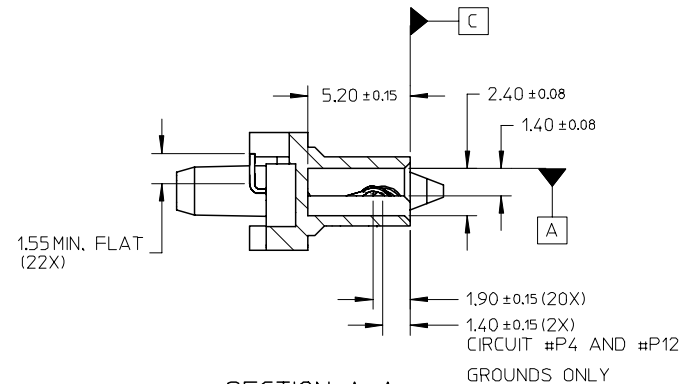
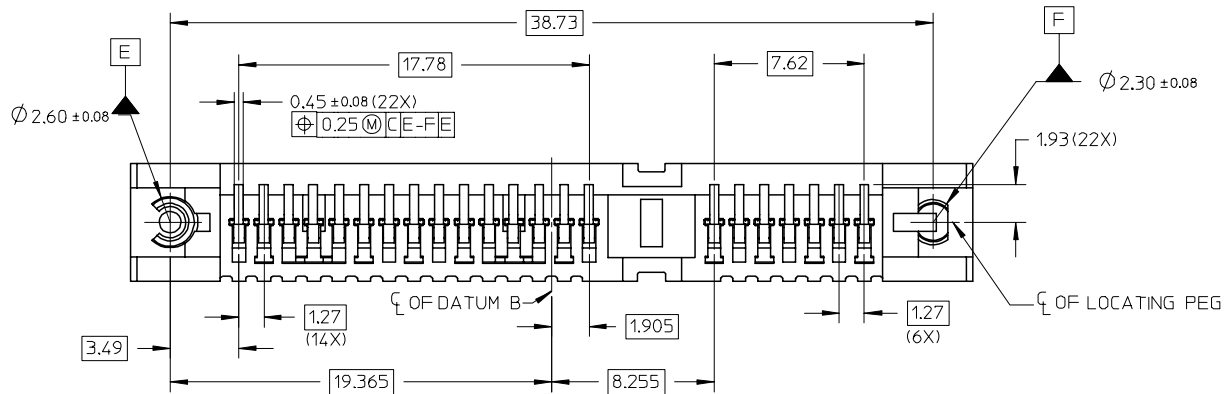
C

B

A



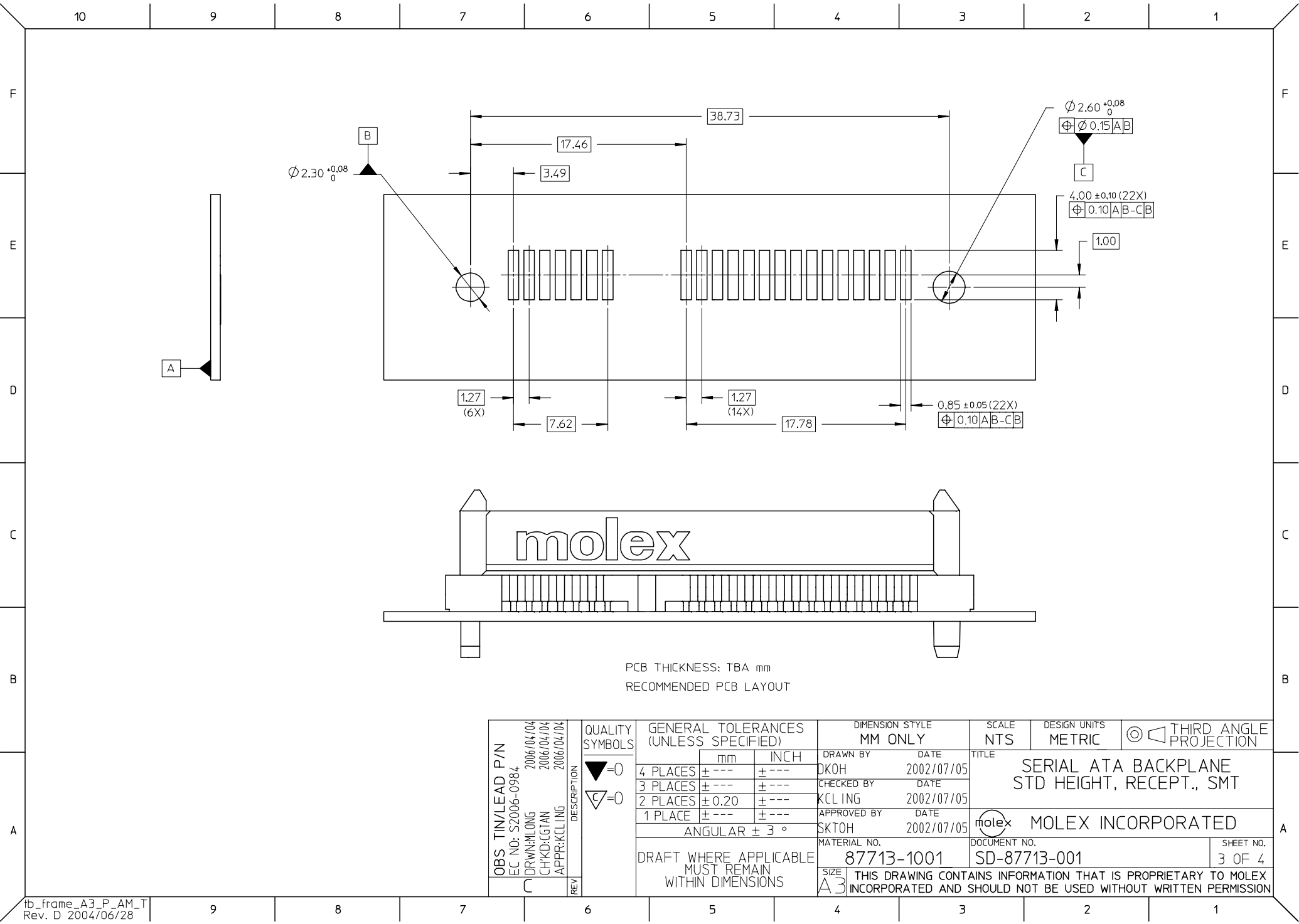
DETAIL 1



SECTION A-A

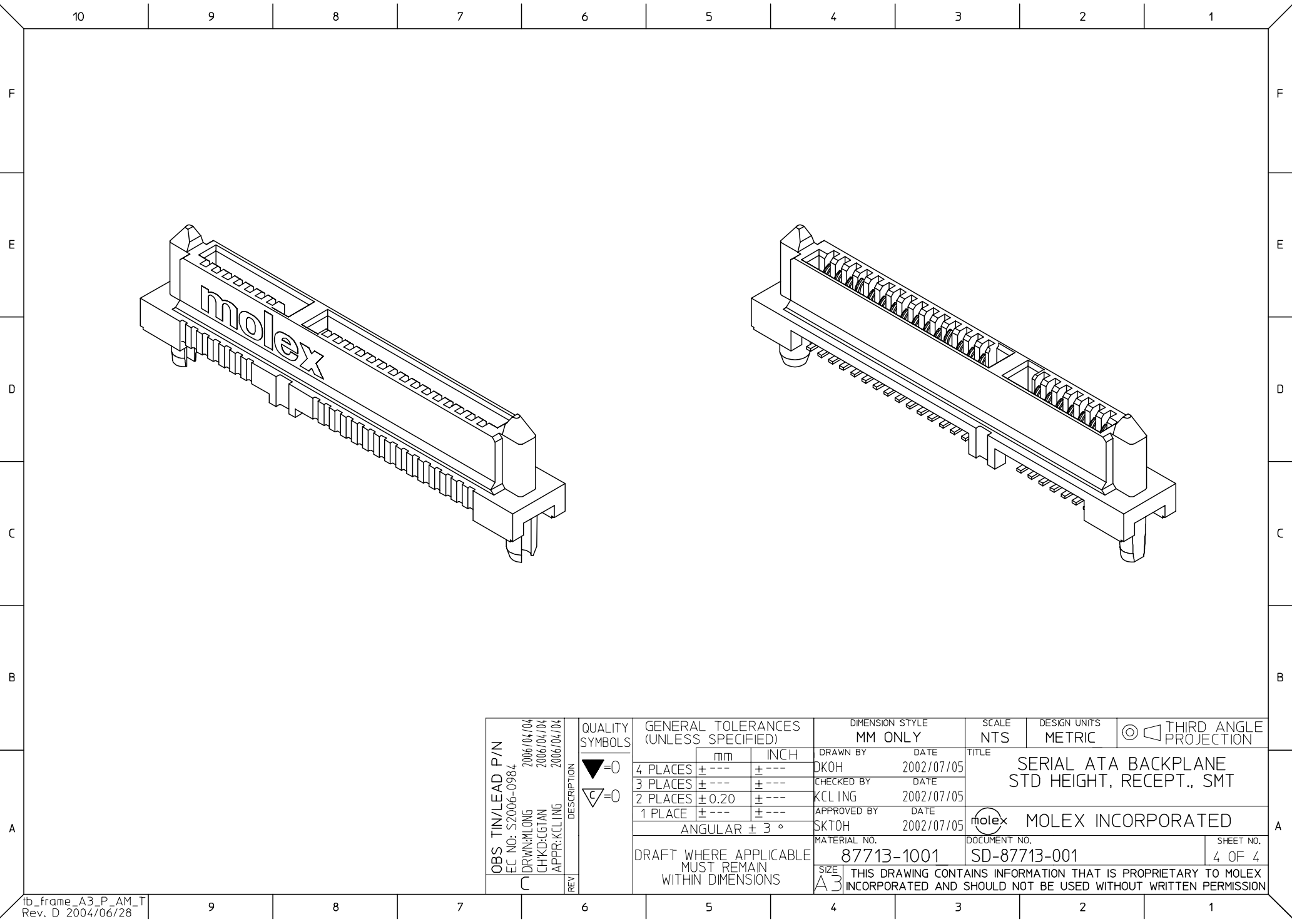
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					mm	INCH	DRAWN BY DKOH	DATE 2002/07/05	TITLE SERIAL ATA BACKPLANE STD HEIGHT, RECEPT., SMT			
				4 PLACES	± ---	± ---	CHECKED BY KCLING	DATE 2002/07/05				
				3 PLACES	± ---	± ---						
				2 PLACES	± 0.20	± ---	APPROVED BY SKTOH	DATE 2002/07/05	MOLEX INCORPORATED			
				1 PLACE	± ---	± ---						
				ANGULAR ± 3 °		MATERIAL NO. 87713-1001	DOCUMENT NO. SD-87713-001		SHEET NO. 2 OF 4			
				DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION						

9 8 7 6 5 4 3 2 1



PCB THICKNESS: TBA mm  
RECOMMENDED PCB LAYOUT

OBS EC NO: S2006-0984 DRWN:MLONG CHKD:CGTAN APPR:KCLING	DESCRIPTION 2006/04/04 2006/04/04 2006/04/04	QUALITY SYMBOLS  ▽=0  ◻=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE		SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION		
					MM ONLY		NTS	METRIC			
					mm	INCH	SERIAL ATA BACKPLANE STD HEIGHT, RECEPT., SMT				
					4 PLACES	± --- ± ---				DRAWN BY	DATE
					3 PLACES	± --- ± ---				CHECKED BY	DATE
					2 PLACES	± 0.20 ± ---				KCL ING	2002/07/05
1 PLACE	± --- ± ---	APPROVED BY	DATE								
		ANGULAR ± 3 °		SKTOH	2002/07/05	MOLEX MOLEX INCORPORATED					
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS				MATERIAL NO.		DOCUMENT NO.		SHEET NO.			
				87713-1001		SD-87713-001		3 OF 4			
				SIZE A3	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION						



OBS TIN/LEAD P/N EC NO: S2006-0984 DRWN:MLONG 2006/04/04 CHKD:CGTAN 2006/04/04 APPR:KCLING 2006/04/04	DESCRIPTION REV	QUALITY SYMBOLS  ▽=0 ◇=0	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE NTS	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION		
				mm	INCH	DRAWN BY DKOH	DATE 2002/07/05	TITLE SERIAL ATA BACKPLANE STD HEIGHT, RECEPT., SMT			
			4 PLACES	± ---	± ---	CHECKED BY KCLING	DATE 2002/07/05				
			3 PLACES	± ---	± ---	APPROVED BY SKTOH	DATE 2002/07/05				
			2 PLACES	± 0.20	± ---	ANGULAR ± 3 °		MOLEX INCORPORATED			
C	REV		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		MATERIAL NO. 87713-1001		DOCUMENT NO. SD-87713-001		SHEET NO. 4 OF 4		
					SIZE A3		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION				