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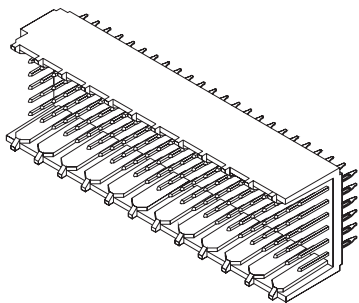


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Jameco Part Number 1976865

2.00mm (.079") Pitch
HDM®
Board-to-Board
Backplane Header
73642/73942
Vertical
Open End Option



Features and Benefits

- High-density 2mm, 6-row connector provides 30 contacts per linear centimeter (over 75 per inch)
- Designed for high-density/high-speed applications
- HDM header modules can mate interchangeably with either shielded (HDM) or unshielded (HDM^{PLUS}) receptacle modules
- Modular components for design flexibility; 72 position (6 row by 12) and 144 position (6 row by 24) modules
- Eye of the needle press-fit for high reliability
- 3 mating pin lengths available for custom configurations
- Surface Mount Compatible

Reference Information

Product Specification: PS-73670-9999
Packaging: Tube
UL File No.: E29179
Mates With: 73632 and 73780
Designed In: Millimeters

Electrical

Current: 1.0A

Contact Resistance:

Row	A	B	C	D	E	F
milliohms max.	13	18	20	25	30	32

Dielectric Withstanding Voltage: 1000V

Insulation Resistance: 1000 Megohms min.

Mechanical

Insertion Force: 135N max. per press-fit pin

Retention Force: 22.5N min. per press-fit pin

Mating Force: 0.35N typical per contact

Unmating Force: 0.15N min.

Signal Normal Force: 0.75N nom./0.60N min.

Durability: 250 cycles

Physical

Housing: Liquid crystal polymer

Contact: Phosphor Bronze

Plating: 30µ" Gold

Operating Temperature: -55 to +105°C

Circuits	Order No.	Termination	Dimension		Lead-free
			Mating Pin Length	PC Tail Length	
72	73942-0000	Solder Tail	5.00 (.197)	2.00 (.079)	Yes
	73942-0200		6.00 (.236)		
	73942-2000		5.00 (.197)	2.50 (.098)	
	73942-2200		6.00 (.236)		
	73942-4000		5.00 (.197)	3.00 (.118)	
	73942-4200		6.00 (.236)		
	73942-6000		5.00 (.197)	3.50 (.138)	
	73942-6200		6.00 (.236)		
	73642-0000	Standard Press-Fit	5.00 (.197)	N/A	No
	73642-0200		6.00 (.236)		
	73642-2000	Tin/Lead Press-Fit	5.00 (.197)		
	73642-2200		6.00 (.236)		

Circuits	Order No.	Termination	Dimension		Lead-free
			Mating Pin Length	PC Tail Length	
144	73942-1000	Solder Tail	5.00 (.197)	2.00 (.079)	
	73942-1200		6.00 (.236)		
	73942-3000		5.00 (.197)	2.50 (.098)	
	73942-3200		6.00 (.236)		
	73942-5000		5.00 (.197)	3.00 (.118)	
	73942-5200		6.00 (.236)		
	73942-7000		5.00 (.197)	3.50 (.138)	
	73942-7200		6.00 (.236)		
	73642-1000	Standard Press-Fit	5.00 (.197)	N/A	
	73642-1200		6.00 (.236)		
	73642-3000	Tin/Lead Press-Fit	5.00 (.197)		
	73642-3200		6.00 (.236)		

Note: HDM® and HDM^{PLUS}® are registered trademarks of Amphenol Corporation



A 3D exploded view of a mechanical assembly. The components include a green base plate, a grey vertical plate with a series of holes, a yellow T-shaped block, a blue block, a red grid block, a purple block, an orange block, a grey pin, and a green plate with a grid of holes.

FILENAME: PS73670C.DOC



PRODUCT SPECIFICATION

1.0 SCOPE

This specification covers the performance requirements and test methods for the following products listed by series numbers:

- * 73642, 73643, 73644, 73650, 73942, 73943, 73944, 74992, 74349, 74301 HDM Backplane Signal Module
- * 73656, 73659 HDM Backplane Power Module
- * 73670 HDM Daughtercard Assembly

The HDM backplane interconnect system consists of 2mm 6 row modular configurations with custom signal, power and guidance modules. These connectors are two-piece devices, which connect two printed circuit boards. The right angle receptacle connectors (daughtercard) and header pin connectors (backplane) are through hole devices with solder or eye-of-the-needle compliant pin terminals.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAMES

HDM (High Density Metric)

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Refer to the appropriate sales drawings for information on dimensions, materials, platings and markings.

2.3 SAFETY AGENCY APPROVALS

UL File Number: E29179

CSA File Number: 152514 (LR19980)

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Refer to the appropriate sales drawings and other sections of this specification for the necessary referenced documents and specifications.

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
E	EC No: UCP2008-0159 DATE: 2007/07/24	PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	2 of 7
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-73670-9999	J. BINGHAM	J. LAURX	R. NELSON



PRODUCT SPECIFICATION

4.0 RATINGS

4.1 CURRENT

Signal Contact: 1 Amp
Power: 15 Amps per blade at 30°C rise from ambient temperature

4.2 VOLTAGE

Signal Contact: 250VAC
Power Contact: 500VAC

4.3 CONTACT BULK RESISTANCE

Mated Signal:

A Row	13 milliohms
B Row	18 milliohms
C Row	20 milliohms
D Row	25 milliohms
E Row	30 milliohms
F Row	32 milliohms

Power Blade: 3 milliohms maximum

4.4 TEMPERATURE RANGE

Operating: -55°C to 105°C
Non-operating: -55°C to 85°C

4.5 CONTACT WIPE LENGTH

5.0mm Backplane Pin	1.75mm
5.5mm Backplane Pin	2.25mm
6.0mm Backplane Pin	2.75mm
Short Power Blade	3.75mm
Medium Power Blade	4.75mm
Long Power Blade	5.75mm

<u>REVISION:</u> E	<u>ECR/ECN INFORMATION:</u> <u>EC No:</u> UCP2008-0159 <u>DATE:</u> 2007/07/24	<u>TITLE:</u> PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	<u>SHEET No.</u> 3 of 7
<u>DOCUMENT NUMBER:</u> PS-73670-9999	<u>CREATED / REVISED BY:</u> J. BINGHAM	<u>CHECKED BY:</u> J. LAURX	<u>APPROVED BY:</u> R. NELSON



PRODUCT SPECIFICATION

5.0 PERFORMANCE

5.1 ELECTRICAL PERFORMANCE

ITEM	TEST CONDITION	REQUIREMENT
CONTACT RESISTANCE (LOW LEVEL)	Mated, 100mA max, 20mV per EIA-364-TP-23	10 milliohm maximum change
INSULATION RESISTANCE	Unmated, 500VDC per EIA-364-TP-21	Initial: 5000 megohms minimum Final: 1000 megohms minimum
DIELECTRIC WITHSTANDING VOLTAGE	Unmated, 1500VAC for signal, 2000VAC for power, per EIA-364-TP-20	No breakdown or flashover
SIGNAL CONTINUITY	Mated per EIA-364-TP-87	No interrupts greater than 10 nanoseconds
COMPLIANT PIN INTERFACE RESISTANCE	Contact inserted into PCB per EIA-364-TP-23	1 milliohm maximum

REVISION: E	ECR/ECN INFORMATION: EC No: UCP2008-0159 DATE: 2007/07/24	TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	SHEET No. 4 of 7
DOCUMENT NUMBER: PS-73670-9999	CREATED / REVISED BY: J. BINGHAM	CHECKED BY: J. LAURX	APPROVED BY: R. NELSON



PRODUCT SPECIFICATION

5.2 MECHANICAL PERFORMANCE

ITEM	TEST CONDITION	REQUIREMENT
MATING FORCE	Mate daughtercard and backplane assembly per EIA-364-TP-13	0.6N per signal pin 1.3N per power blade (nominal values)
DURABILITY	250 Cycles, mated and unmated per EIA-364-TP-09	10 milliohm max change in LLCR
VIBRATION	Mated, 10-100Hz, 10g's, 24 hr, 3 axis per EIA-364-TP-28	10 milliohm max change in LLCR
MECHANICAL SHOCK	Mated, 30g half-sine, 11ms, 3 axis per EIA-364-TP-27	10 milliohm max change in LLCR
NORMAL FORCE/ SPRING RATE	Apply perpendicular force to terminal at rate of 25+/-6mm per minute	Signal: 0.5N (50 g) min Spring Rate: 12.5 g/mil deflection (nominal) Power: 1.0N (100 g) min
GUIDE PIN STRENGTH	Apply perpendicular force to guide pin tip at rate of 12.7+/-6mm per minute. Record force at 1mm pin displacement	Guide pin in plastic housing: 75N Stand alone guide pin: 130 N (nominal values)
TORQUE SETTING FOR MOUNTING SCREW	Using torque driver, turn screw into plastic guide module until screw strips out	2.5 in-lbs minimum for 1.6- 4.8mm PCB thickness

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PS-73670-9999	J. BINGHAM	J. LAURX	R. NELSON



PRODUCT SPECIFICATION

5.3 ENVIRONMENTAL PERFORMANCE

ITEM	TEST CONDITION	REQUIREMENT
THERMAL SHOCK	Mated, 5 cycles from -55°C to 85°C per EIA-364-TP-32	10 milliohm max change in LLCR
TEMPERATURE LIFE	Mated, +105°C for 1000 hours per EIA-364-TP-17	10 milliohm max change in LLCR
HUMIDITY	Mated, 600 hours from +25°C to +65°C per EIA-364-TP-31	10 milliohm max change in LLCR
DUST	Unmated per EIA-364-TP-50	10 milliohm max change in LLCR
MIXED FLOWING GAS	10 days unmated, 10 days mated, per EIA-364-TP-65 and ASTM B827	10 milliohm max change in LLCR

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PS-73670-9999	J. BINGHAM	J. LAURX	R. NELSON



PRODUCT SPECIFICATION

6.0 TEST SEQUENCE

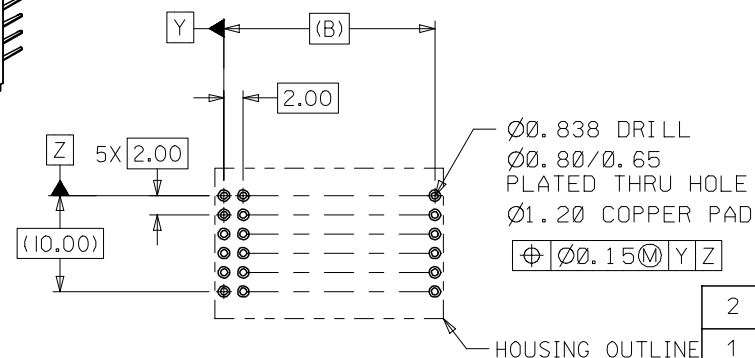
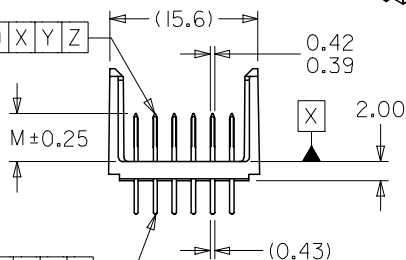
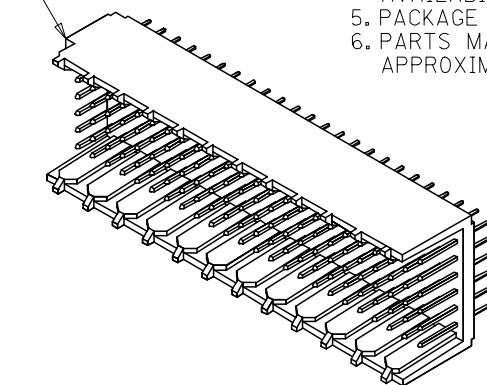
Bellcore Test Plan

GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5
Visual Exam	Visual Exam	Visual Exam	Visual Exam	Visual Exam
Separation Force Mate/Unmate Forces	Mate/Unmate Forces	Separation Force Mate/Unmate Forces	LLCR/CPIR	Normal Force
LLCR/CPIR	LLCR/CPIR	LLCR/CPIR	Durability (100 cycles)	Plating Thickness
Durability (100 cycles)	Thermal Shock	Temperature Life	Mate/Unmate Forces	Porosity
Separation Force	Humidity	LLCR/CPIR	LLCR	
LLCR	LLCR/CPIR	Separation Force Mate/Unmate Forces	MFG (10 days Unmated)	
Dust	Mate/Unmate Forces	Visual Exam	LLCR (After 5 & 10 days)	
LLCR	Visual Exam	Normal Force	MFG (10 days Mated)	
Vibration (3 axis)	Normal Force		LLCR (After 5 & 10 days)	
LLCR			Disturbance	
Mechanical Shock (3 axis)			LLCR	
LLCR/CPIR			Durability (100 cycles)	
Separation Force Mate/Unmate Forces			LLCR/CPIR	
Visual Exam			Visual Exam	
Normal Force			Normal Force	

LLCR = Low Level Contact Resistance
CPIR = Compliant Pin Interface Resistance

REVISION: E	ECR/ECN INFORMATION: EC No: UCP2008-0159 DATE: 2007/07/24	TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	SHEET No. 7 of 7
DOCUMENT NUMBER: PS-73670-9999	CREATED / REVISED BY: J. BINGHAM	CHECKED BY: J. LAURX	APPROVED BY: R. NELSON

1. MATERIALS: HOUSING--LIQUID CRYSTAL POLYMER (LCP), GLASS FILLED,
UL94V-0, COLOR: BLACK,
TERMINAL: PHOSPHOR BRONZE.
2. FINISH: 0.75 MICROMETERS MINIMUM SELECTIVE GOLD (Au) IN MATING AREA;
2.50 MICROMETERS MINIMUM SELECTIVE TIN (Sn) IN TAIL AREA;
NICKEL (Ni) UNDERPLATE OVERALL.
3. THIS PART CONFORMS TO MOLEX PRODUCT SPECIFICATION
PS-73670-9999.
4. FOR MIXED CONTACT MATING LENGTHS, CONSULT FACTORY FOR
AVAILABILITY.
5. PACKAGE PER PK-70873-0818.
6. PARTS MARKED WITH PART NUMBER AND DATE CODE, ON EITHER SIDE,
APPROXIMATELY WHERE SHOWN.



PCB LAYOUT: COMPONENT SIDE
RECOMMENDED PCB THICKNESS: 2.50 MIN.

	2	A
E	1	G
	SHT	REV

- SEE NOTE 6

MODIFY FINISH NOTE EC NO: UCP2007-2259 DRAWN BY: IBARRA 2007/03/13 CHK'D BY: BARKER 2007/03/21 APPR: MILLER 2007/03/22	QUALITY SYMBOLS ▽=0 ▽=0	DESCRIPTION	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE 2:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION		
				mm	INCH	DRAWN BY JB INGHAM	DATE 1998/01/13	TITLE SALES ASSY HDM BACKPLANE OPEN END OPTION SOLDER TAIL VERSION			
			4 PLACES	± ---	± ---	CHECKED BY SREED	DATE 1998/01/13				
			3 PLACES	± ---	± ---	APPROVED BY CB IXLER	DATE 1998/01/13				
			2 PLACES	± 0.05	± ---	MOLEX MOLEX INCORPORATED		DOCUMENT NO.		SHEET NO. 1 OF 2	
			1 PLACE	± 0.10	± ---						
			ANGULAR ±1/2°		SEE CHART		SD-73942-001				
DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SIZE B	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION								

MATERIAL NUMBER ASSIGNMENT

73942-* * 0 0

NUMBER	CIRCUIT SIZE	DIM "A"	DIM "B"	DIM "H"
0	72	23.84	22.00	2.0
1	144	47.84	46.00	2.0
2	72	23.84	22.00	2.5
3	144	47.84	46.00	2.5
4	72	23.84	22.00	3.0
5	144	47.84	46.00	3.0
6	72	23.84	22.00	3.5
7	144	47.84	46.00	3.5

NUMBER	DIM "M"
0	5.0
1	5.5
2	6.0

SEE SHEET 1 EC No. U81577 DRWN:JBINGHAM 98/0203 CHK: SREED 98/0203 APPR:CBIXLER 98/0203 A	DESCRIPTION REV	QUALITY SYMBOLS MAJOR CRITICAL	GENERAL TOLERANCES: (UNLESS SPECIFIED)		SCALE --:--	DESIGN UNITS ☒ mm ☐ INCH	THIRD ANGLE PROJECTION	DIMENSIONS: ☐ mm ☐ INCH ☒ mm ONLY		SHT	REV		
					DRAWN BY & DATE JBINGHAM 98/01/13			TITLE: SALES ASSY, HDM BACKPLANE OPEN END OPTION SOLDER TAIL VERSION		MOLEX INCORPORATED	MATERIAL NO. SEE CHART	DRAWING NO. SD-73942-001	SHEET NO. 2
					CHECKED BY & DATE SREED 98/01/13								
					APPROVED BY & DATE CBIXLER 98/01/13								
					CAD FILENAME S73942X2.DGN								
			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.								