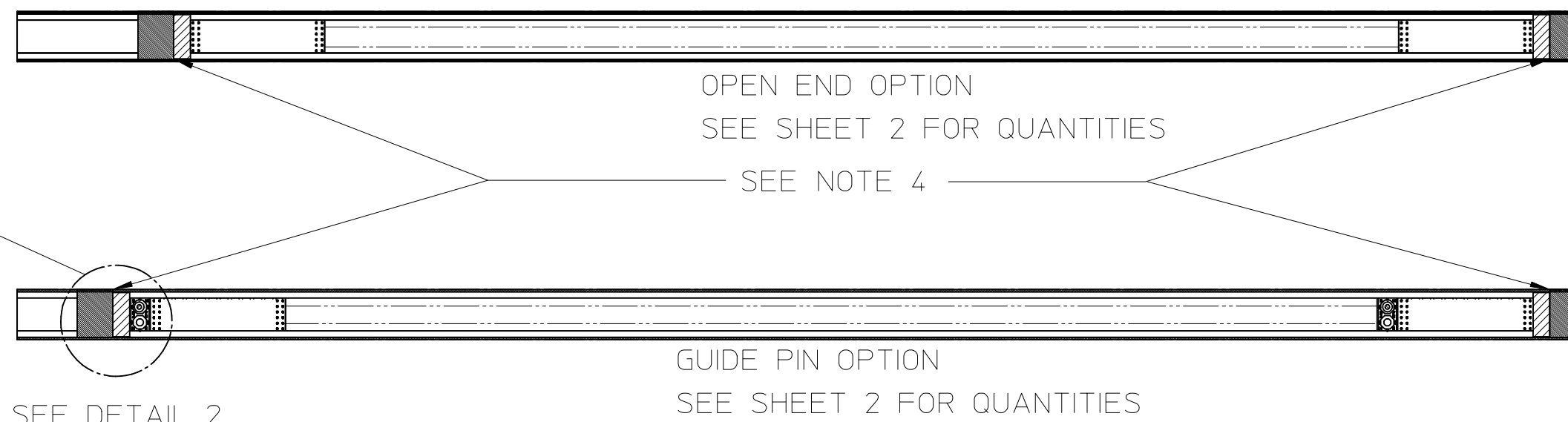
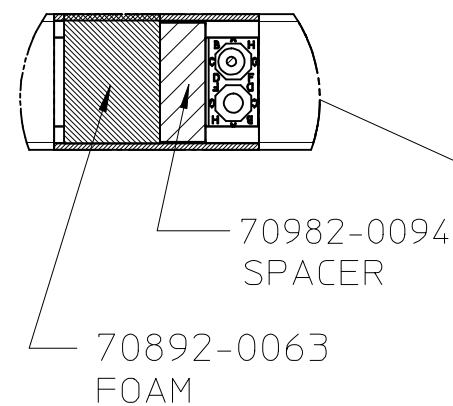
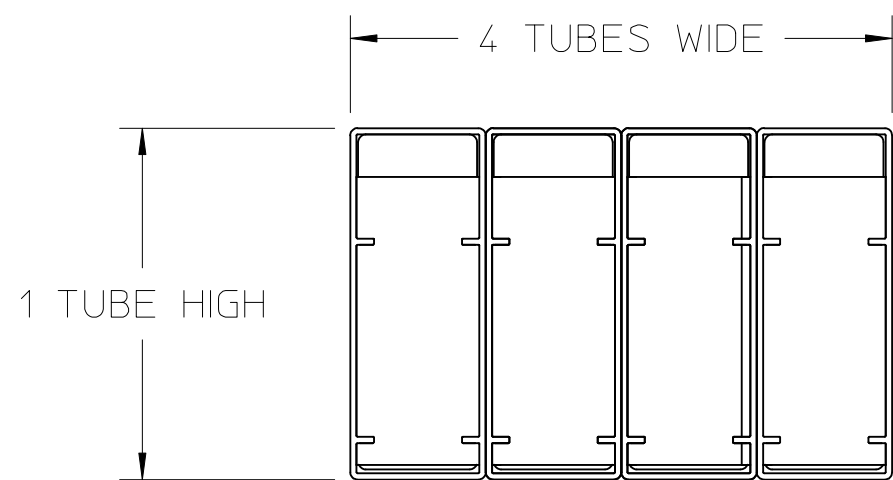


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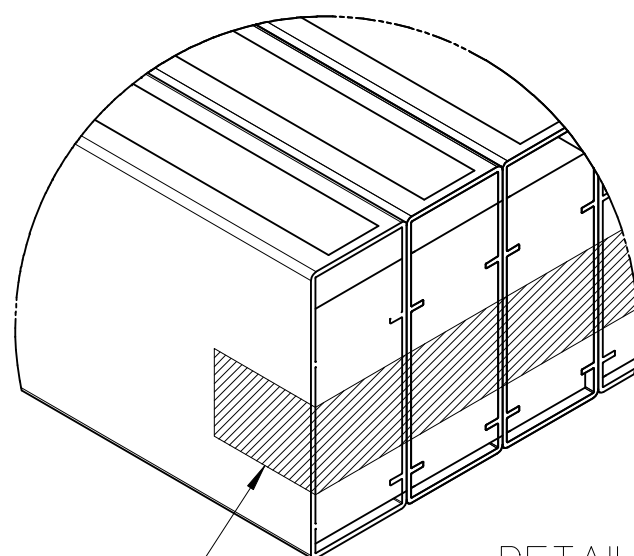
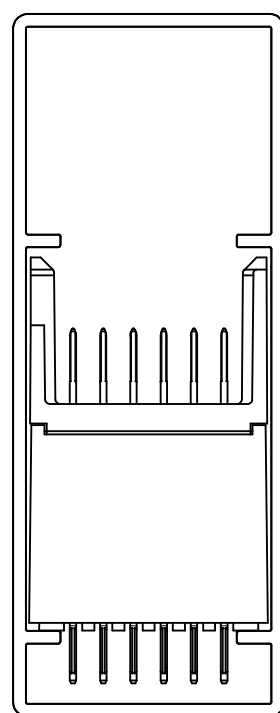
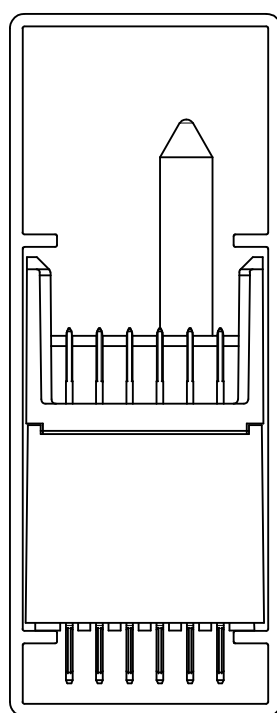
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connect.com](http://www.molex-connect.com)



PART ORIENTATION

POLAR/GUIDE OPTION

OPEN END OPTION

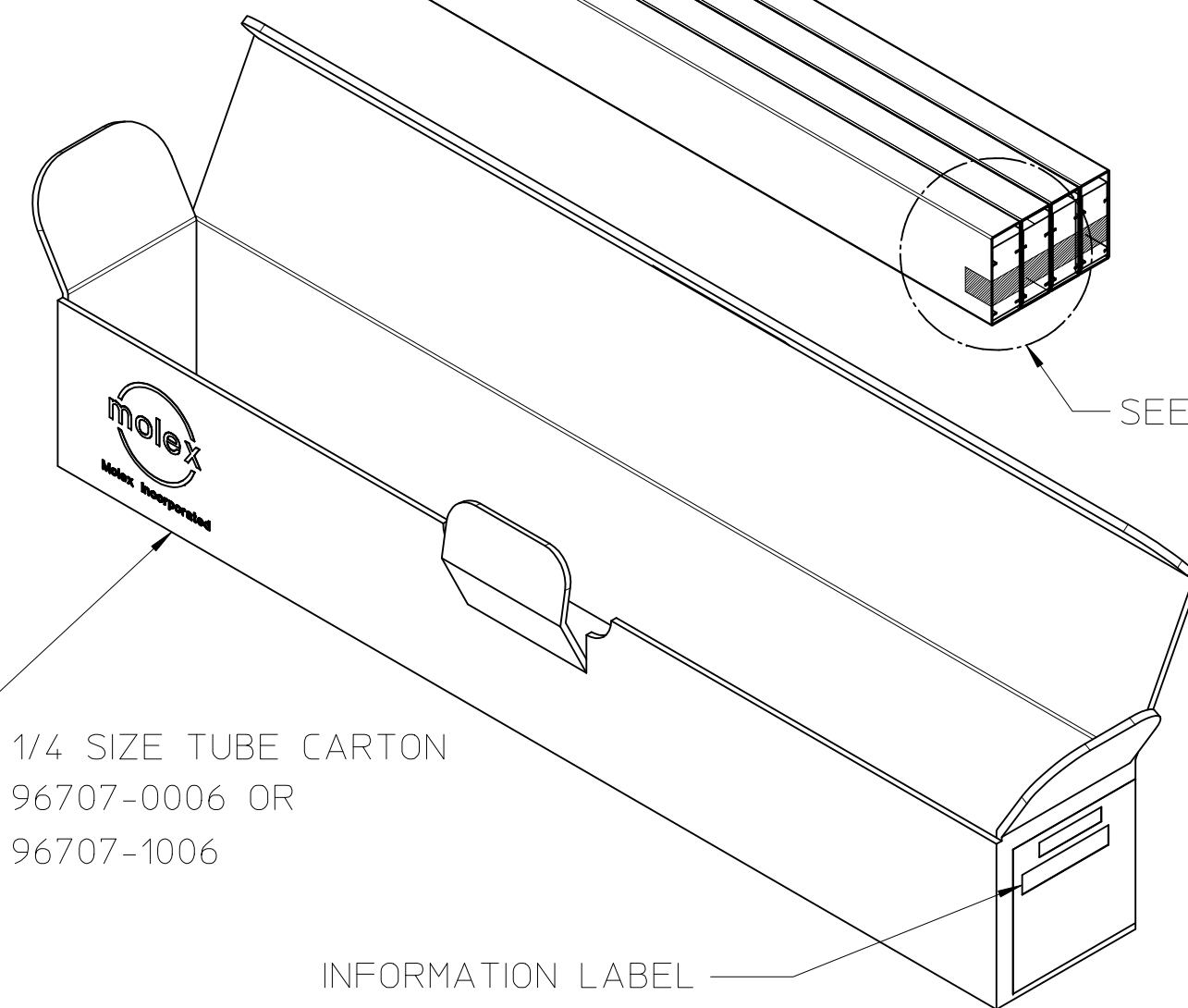


DETAIL Z SCALE 1:1

96717-0002 TUBE CLOSURE SEE NOTE 6

LABEL 73728-0000 SEE NOTE 9

70067-0276 PACKAGING TUBE



1/4 SIZE TUBE CARTON 96707-0006 OR 96707-1006

INFORMATION LABEL SEE NOTE 10

NOTES:

1. STAPLES MUST BE USED TO SET UP STANDARD CARTON ONLY. CARTON CLOSURES MUST BE DONE WITH TAPE.
2. PARTS SHOULD BE PACKAGED PER QUANTITIES SPECIFIED.
3. PARTS TO BE LOADED INTO 70067-0267 TUBES AS SHOWN IN PART ORIENTATION DETAIL.
4. AFTER FILLING TUBES WITH PARTS, THEN PLACE 70892-0094 SPACERS, AND THEN 70892-0063 FOAM PLUGS. SPACERS AND FOAM PLUGS MUST BE INSERTED INTO BOTH ENDS. ASSEMBLED TUBE LENGTHS MUST NOT EXCEED 562 MILLIMETERS.
5. TUBES MUST BE LOADED INTO 1/4 SIZE TUBE CARTON AS SHOWN.
6. TUBE ENDS TO BE CLOSED USING 96717-0002 LABEL. ONE AT EACH END.
7. SEE SHEET 2 FOR PART NUMBER CHART.
8. 4 TOTAL TUBES PER CARTON.
9. MARK CUSTOM LABEL 73728-0000 WITH PART NUMBER & DATE CODE. PLACE ONE LABEL PER TUBE, ON THE OPPOSITE SIDE OF LASER MARK, APPROXIMATELY WHERE SHOWN.
10. INFORMATION LABEL TO BE WRAPPED AROUND THE END OF CARTON SUCH THAT PART NUMBER AND BAR CODE ARE VISIBLE AND CENTERED ON THE END PANEL.

| | | | | | | | | | | | | |
|---|----------------------|--|---------------------------------------|----------------------|-------------------------|---------------------|--|--|----------------------------|--|------------------|--|
| MOVED TUBE LABEL EC NO: UCP2013-4159 DRWN:RWHIPPLE 2013/03/28 CHKD:MWOLFE 2013/03/28 APPR:SMILLER 2013/05/23 | REV DESCRIPTION N | QUALITY SYMBOLS | GENERAL TOLERANCES (UNLESS SPECIFIED) | | DIMENSION STYLE MM ONLY | | SCALE | DESIGN UNITS METRIC | THIRD ANGLE PROJECTION | | | |
| | | $\nabla = 0$ $\nabla = 0$ $\nabla = 0$ | mm | INCH | DRAWN BY | DATE | TITLE | PACKAGE SPECIFICATIONS HDM BACKPLANE STACKING MODULES, 15 MM STACK HGT molex | | | | |
| | | 4 PLACES ± --- ± --- | 3 PLACES ± --- ± --- | 2 PLACES ± --- ± --- | 1 PLACE ± --- ± --- | 0 PLACE ± --- ± --- | JB INGHAM 1998/02/06 SREED 1998/02/06 CBIXLER 1998/02/06 | | | | | |
| | | DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS | | | ANGULAR ±1/2° | | MATERIAL NO. 70873-0870 | | DOCUMENT NO. PK-70873-0870 | | SHEET NO. 1 OF 2 | |
| THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION | | | | | | | | | | | | |

| PART NUMBER | STYLE | NO. POSITIONS | PARTS/TUBE | PARTS/CARTON |
|-------------|--------------------|---------------|------------|--------------|
| 73769-010* | OPEN END OPTION | 72 | 21 | 84 |
| 73769-110* | OPEN END OPTION | 144 | 10 | 40 |
| 73771-01** | POLAR/GUIDE OPTION | 72 | 16 | 64 |
| 73771-11** | POLAR/GUIDE OPTION | 144 | 9 | 36 |
| 73781-010* | OPEN END OPTION | 72 | 21 | 84 |
| 73781-110* | OPEN END OPTION | 144 | 10 | 40 |
| 73781-210* | OPEN END OPTION | 72 | 21 | 84 |
| 73781-310* | OPEN END OPTION | 144 | 10 | 40 |
| 73781-410* | OPEN END OPTION | 72 | 21 | 84 |
| 73781-510* | OPEN END OPTION | 144 | 10 | 40 |
| 73781-610* | OPEN END OPTION | 72 | 21 | 84 |
| 73781-710* | OPEN END OPTION | 144 | 10 | 40 |
| 73783-01** | POLAR/GUIDE OPTION | 72 | 16 | 64 |
| 73783-11** | POLAR/GUIDE OPTION | 144 | 9 | 36 |
| 73783-21** | POLAR/GUIDE OPTION | 72 | 16 | 64 |
| 73783-31** | POLAR/GUIDE OPTION | 144 | 9 | 36 |
| 73783-41** | POLAR/GUIDE OPTION | 72 | 16 | 64 |
| 73783-51** | POLAR/GUIDE OPTION | 144 | 9 | 36 |
| 73783-61** | POLAR/GUIDE OPTION | 72 | 16 | 64 |
| 73783-71** | POLAR/GUIDE OPTION | 144 | 9 | 36 |
| 73650-0229 | POLAR/GUIDE OPTION | 144 | 9 | 36 |

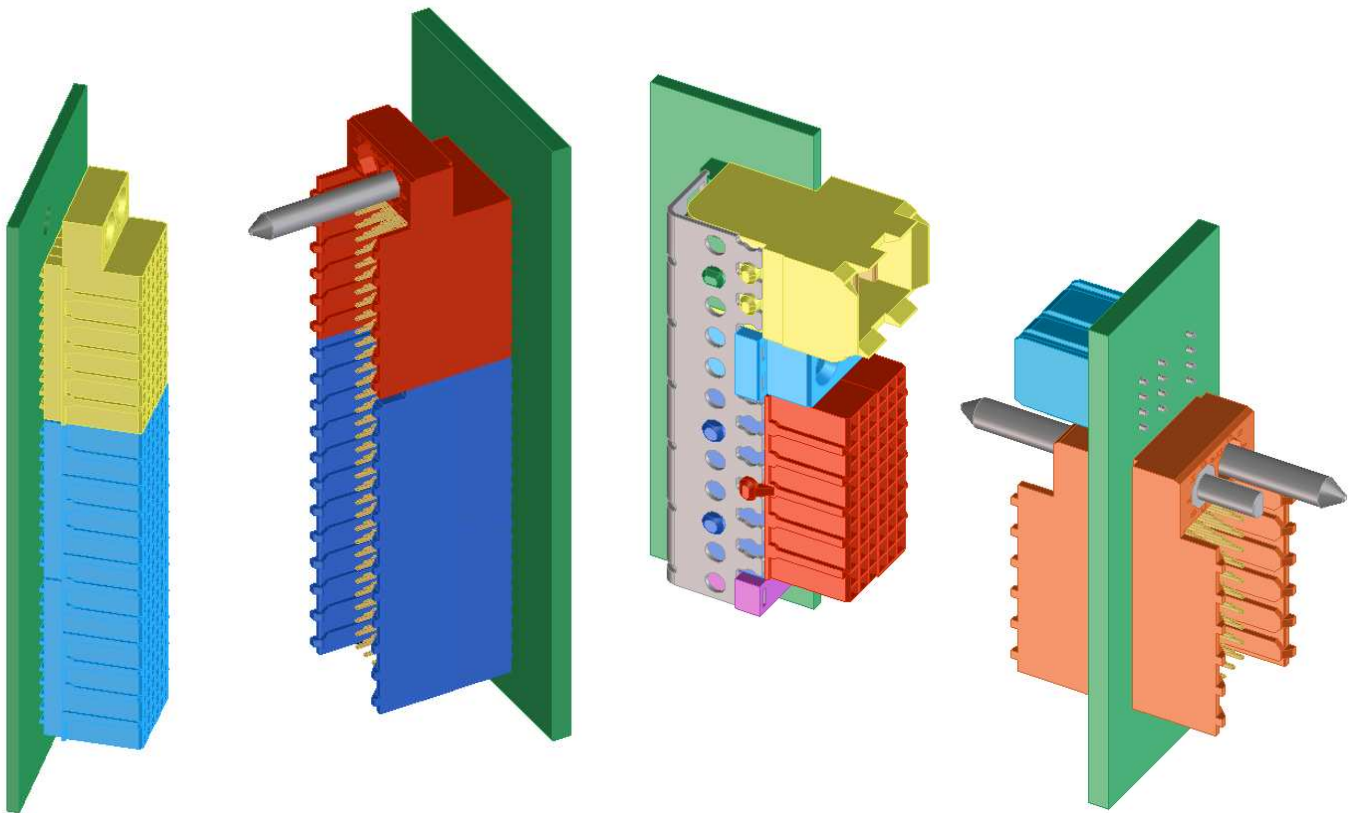
NOTE: SPQ (STANDARD PACK QUANTITY) AND MOQ (MINIMUM ORDER QUANTITY)
 EQUAL ONE (1) 1/4 SIZE TUBE CARTON

| | | | | | | | | | | |
|---|-------------------|--|--|---|--------------|------------------------|--|---|---------------|-----------|
| SEE SHEET 1 EC NO: UCP2013-4159 DRWN:RWHIPPLE 2013/03/28 CHKD:MMOLFE 2013/03/28 APPR:SMILLER 2013/05/23 | QUALITY SYMBOLS | GENERAL TOLERANCES (UNLESS SPECIFIED) | DIMENSION STYLE | SCALE | DESIGN UNITS | THIRD ANGLE PROJECTION | | | | |
| | ▽=0 ▽=0 ▽=0 | mm INCH 4 PLACES ± --- ± --- 3 PLACES ± --- ± --- 2 PLACES ± --- ± --- 1 PLACE ± --- ± --- 0 PLACE ± --- ± --- | MM ONLY DRAWN BY: JBINGHAM DATE: 1998/02/06 CHECKED BY: SREED DATE: 1998/02/06 APPROVED BY: CBIXLER DATE: 1998/02/06 | TITLE PACKAGING SPECIFICATIONS HDM BACKPLANE STACKING MODULES, 15 MM STACK HGT | METRIC | | | | | |
| | | | | | | | ANGULAR ±1/2° | MATERIAL NO. | DOCUMENT NO. | SHEET NO. |
| | | | | | | | DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS | 70873-0870 | PK-70873-0870 | 2 OF 2 |
| | | | | | | | | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION | | |
| | | | | | | | | | | |



PRODUCT SPECIFICATION

PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) BACKPLANE AND DAUGHTERCARD INTERCONNECT SYSTEM (STACKING AND MIDPLANE)



| | | | |
|---|---|--|----------------------------------|
| REVISION: F | ECR/ECN INFORMATION: EC No: UCP2009-1724 DATE: 2009/05/01 | TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM (MIDPLANE & STACKING) | SHEET No. 1 of 7 |
| DOCUMENT NUMBER: PS-73780-999 | CREATED / REVISED BY: S. DANNELLEY | CHECKED BY: B. SMART | APPROVED BY: S. MILLER |



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
- * 73650, 73769, 73770, 73771, 73781, 73782, 73783, 74428, 74993 HDM Backplane Signal Stacking Module
- * 73650, 73797, 73798, 73799, 74349, 74992 HDM Backplane Signal Single-End Midplane Module
- * 73650, 73800, 73801, 73802, 74349, 74992 HDM Backplane Signal Double-End Midplane Module
- * 73656 HDM Midplane Backplane Power
- * 73780, 74300 HDM Daughtercard Signal Stacking Module
- * 73998 HDM Daughtercard Power Stacking Module

The HDM backplane stacking and midplane interconnect systems consist of 6-row, 2mm grid modules providing 30 contacts per linear centimeter (over 75 per inch). The stacking connectors are used for parallel board packaging with stack heights from 15mm to 32mm. The midplane backplane modules allow rear-side mating of cards. Both the daughtercard receptacles and the backplane headers are through-hole connectors with solder tail 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)

| | | | |
|---|---|--|----------------------------------|
| REVISION: F | ECR/ECN INFORMATION: EC No: UCP2009-1724 DATE: 2009/05/01 | TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM (MIDPLANE & STACKING) | SHEET No. 2 of 7 |
| DOCUMENT NUMBER: PS-73780-999 | CREATED / REVISED BY: S. DANNELLEY | CHECKED BY: B. SMART | APPROVED BY: S. MILLER |



PRODUCT SPECIFICATION

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

- AS-73642-9998 Application Specification HDM Compliant Backplane Connectors
- AS-73656-1998 Application Specification HDM Compliant BP Power Modules
- AS-73670-9996 Application Specification HDM Compliant Terminal Performance
- AS-73670-9997 Application Specification HDM Backplane and Daughtercard Trace Routing Guidelines
- AS-73670-9998 Application Specification HDM Compliant and Solder Tail Daughtercard Connectors

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

4.0 RATINGS

4.1 CURRENT

- Signal Contact: 1 Amp
- Power: 15 Amps per blade at 30°C rise from ambient temperature
- Midplane Power: 11 Amps per blade at 30°C rise from ambient temperature

4.2 VOLTAGE

- Signal Contact: 250VAC
- Power Contact: 500VAC

4.3 TEMPERATURE RANGE

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

4.4 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 |

| | | | |
|---|---|--|----------------------------------|
| REVISION: F | ECR/ECN INFORMATION: EC No: UCP2009-1724 DATE: 2009/05/01 | TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM (MIDPLANE & STACKING) | SHEET No. 3 of 7 |
| DOCUMENT NUMBER: PS-73780-999 | CREATED / REVISED BY: S. DANNELLEY | CHECKED BY: B. SMART | APPROVED BY: S. MILLER |



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: F | ECR/ECN INFORMATION: EC No: UCP2009-1724 DATE: 2009/05/01 | TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM (MIDPLANE & STACKING) | SHEET No. 4 of 7 |
| DOCUMENT NUMBER: PS-73780-999 | CREATED / REVISED BY: S. DANNELLEY | CHECKED BY: B. SMART | APPROVED BY: S. MILLER |



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: 12.5g/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 (nominal value) |

| | | | |
|---|---|--|----------------------------------|
| REVISION: F | ECR/ECN INFORMATION: EC No: UCP2009-1724 DATE: 2009/05/01 | TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM (MIDPLANE & STACKING) | SHEET No. 5 of 7 |
| DOCUMENT NUMBER: PS-73780-999 | CREATED / REVISED BY: S. DANNELLEY | CHECKED BY: B. SMART | APPROVED BY: S. MILLER |



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 |

| | | | |
|---|---|--|----------------------------------|
| REVISION: F | ECR/ECN INFORMATION: EC No: UCP2009-1724 DATE: 2009/05/01 | TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM (MIDPLANE & STACKING) | SHEET No. 6 of 7 |
| DOCUMENT NUMBER: PS-73780-999 | CREATED / REVISED BY: S. DANNELLEY | CHECKED BY: B. SMART | APPROVED BY: S. MILLER |



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: F | ECR/ECN INFORMATION: EC No: UCP2009-1724 DATE: 2009/05/01 | TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM (MIDPLANE & STACKING) | SHEET No. 7 of 7 |
| DOCUMENT NUMBER: PS-73780-999 | CREATED / REVISED BY: S. DANIELLEY | CHECKED BY: B. SMART | APPROVED BY: S. MILLER |