

Molex 73642-0000 PDF

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TEST SUMMARY

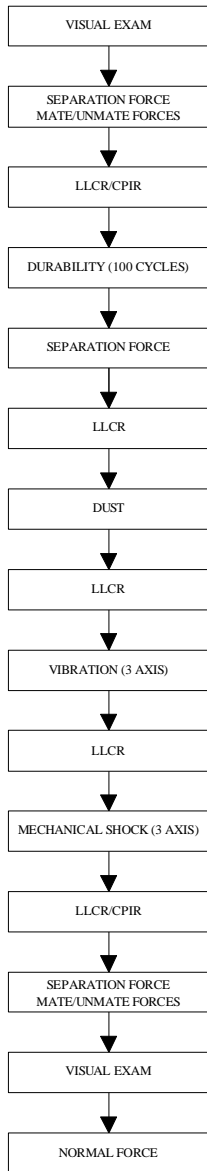


LANGUAGE

ENGLISH

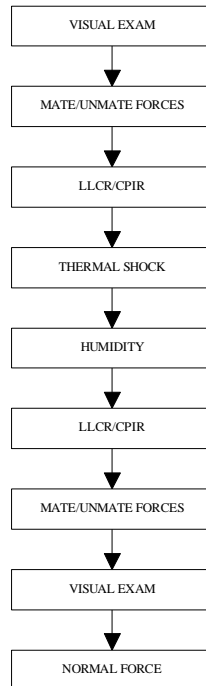
Vibration and Shock

GROUP 1



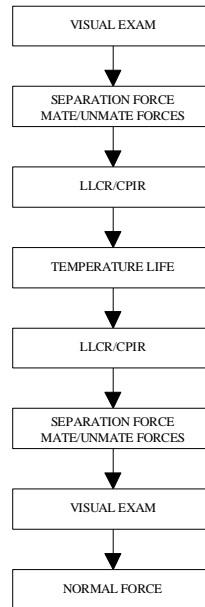
CPIR = COMPLIANT PIN INTERFACE RESISTANCE
LLCR = LOW LEVEL CONTACT RESISTANCE

Thermal Shock and Humidity
GROUP 2



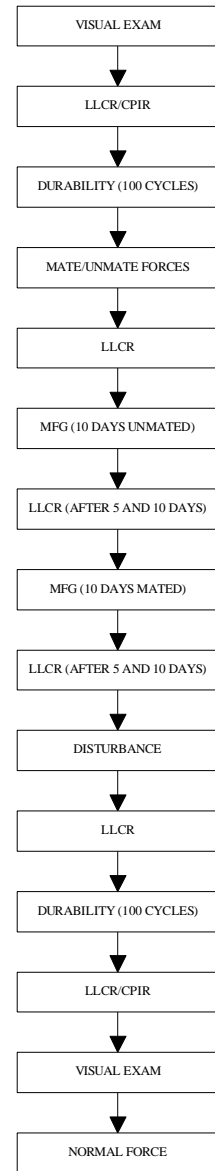
Temperature Life

GROUP 3



Mixed Flowing Gas

GROUP 4



Test Performance
Group 1

A	REVISE ON PC ONLY	TITLE	BELLCORE SUMMARY FOR HDM (HIGH DENSITY METRIC)	
	SEE SHEET 1			
REV.	DESCRIPTION			
DOCUMENT NUMBER TS-73670-990		DIMENSION CLASS: CRITICAL = 0 MAJOR = 0	FILENAME testsum2.lwp	SHEET 2
ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP				



TEST SUMMARY





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Test Condition	Requirement	Units	Minimum	Maximum
Visual	Appearance	No Damage		
Compliant Resistance	Record	mΩ	0.65	1.28
Separation Force	Record	oz.	0.6	1.3
Mating Force	Record	lbs.	25.5	32.0
Unmating Force	Record	lbs.	26.3	30.3
LLCR	Record	mΩ	11.3	38.7
Durability	Appearance	No Damage		
Separation Force	Record	oz.	0.8	1.2
LLCR	10 Max (change from initial)	mΩ	N/A	2.4
Dust	Apply	Applied		
LLCR	10 Max (change from initial)	mΩ	N/A	2.8
Vibration (3 - axis)	Appearance	No Damage		
	10 Max (detect)	nanosecond	Passed	
LLCR	10 Max (change from initial)	mΩ	N/A	3.4
Shock (3 - axis)	Appearance	No Damage		
	10 Max (detect)	nanosecond	Passed	
LLCR	10 Max (change from initial)	mΩ	N/A	3.0
Compliant Resistance	1 Max (change from initial)	mΩ	N/A	0.20
Mating Force	Record	lbs.	28.9	31.2
Unmating Force	Record	lbs.	27.8	29.4
Separation Force	Record	oz.	0.8	1.4
Visual	Appearance	No Damage		
Normal Force	Record	grams	59	77

Group 2

Test Condition	Requirement	Units	Minimum	Maximum
Visual	Appearance	No Damage		
Compliant Resistance	Record	mΩ	0.78	1.25

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A	SEE SHEET 1				
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DOCUMENT NUMBER TS-73670-990		DIMENSION CLASS:  CRITICAL = 0  MAJOR =0		FILENAME testsum2.lwp	SHEET 3
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TEST SUMMARY



LANGUAGE

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Mating Force	Record	lbs.	28.2	30.0
Unmating Force	Record	lbs.	25.3	26.5
LLCR	Record		11.7	32.1
Thermal Shock	Appearance	No Damage		
Humidity	Appearance	No Damage		
LLCR	10 Max (change from initial)	mΩ	N/A	3.6
Compliant Resistance	1 Max (change from initial)	mΩ	N/A	0.35
Mating Force	Record	lbs.	31.1	36.9
Unmating Force	Record	lbs.	26.4	35.5
Visual	Appearance	No Damage		
Normal Force	Record	grams	55	70

Group 3

Group 3 (cont.)

Test Condition	Requirement	Units	Minimum	Maximum
Visual	Appearance	No Damage		
Normal Force	Record	grams	54.4	75

Test Condition	Requirement	Units	Minimum	Maximum
Visual	Appearance	No Damage		
Compliant Resistance	Record	mΩ	0.82	1.3
Separation Force	Record	lbs.	0.6	1.3
Mating Force	Record	lbs.	28.2	30.1
Unmating Force	Record	lbs.	20.4	27.4
LLCR	Record	mΩ	11.6	31.7
Temperature Life	Appearance	No Damage		
LLCR	10 Max (change from initial)	mΩ	N/A	1.1
Compliant Resistance	1 Max (change from initial)	mΩ	N/A	0.28
Mating Force	Record	lbs.	17.4	21.6
Unmating Force	Record	lbs.	13.5	17.7
Separation Force	Record	oz.	0.5	1.4

Group 4

Test Condition	Requirement	Units	Minimum	Maximum
Visual	Appearance	No Damage		

REVISE ON PC ONLY		TITLE		
A	SEE SHEET 1	BELLCORE SUMMARY FOR HDM (HIGH DENSITY METRIC)		
REV.	DESCRIPTION	THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		
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				SHEET 4





TEST SUMMARY



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Compliant Resistance	Record	mΩ	0.72	1.28
LLCR	Record	mΩ	11.5	31.7
Durability	Appearance	No Damage		
Mating Force	Record	lbs.	29.4	32.8
Unmating Force	Record	lbs.	23.6	31.8
LLCR	10 Max (change from initial)	mΩ	N/A	0.3
MFG, Unmated	Appearance	No Damage		
LLCR, 5 day	10 Max (change from initial)	mΩ	N/A	0.6
LLCR, 10 day	10 Max (change from initial)	mΩ	N/A	2.2
MFG, Mated	Appearance	No Damage		
LLCR, 5 day	10 Max (change from initial)	mΩ	N/A	1.5
LLCR, 10 day	10 Max (change from initial)	mΩ	N/A	1.3
Disturbance	Appearance	No Damage		
LLCR	10 Max (change from initial)	mΩ	N/A	1.8
Durability	Appearance	No Damage		
LLCR	10 Max (change from initial)	mΩ	N/A	1.5
Compliant Resistance	1 Max (change from initial)	mΩ	N/A	0.58
Visual	Appearance	No Damage		
Normal Force	Record	grams	64.6	76.7

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			SHEET 5
ES-4000-3996 REV. A SHEET 8 95/MAR/10 EC U5-0926 DCBRD07.MWP			





TEST SUMMARY



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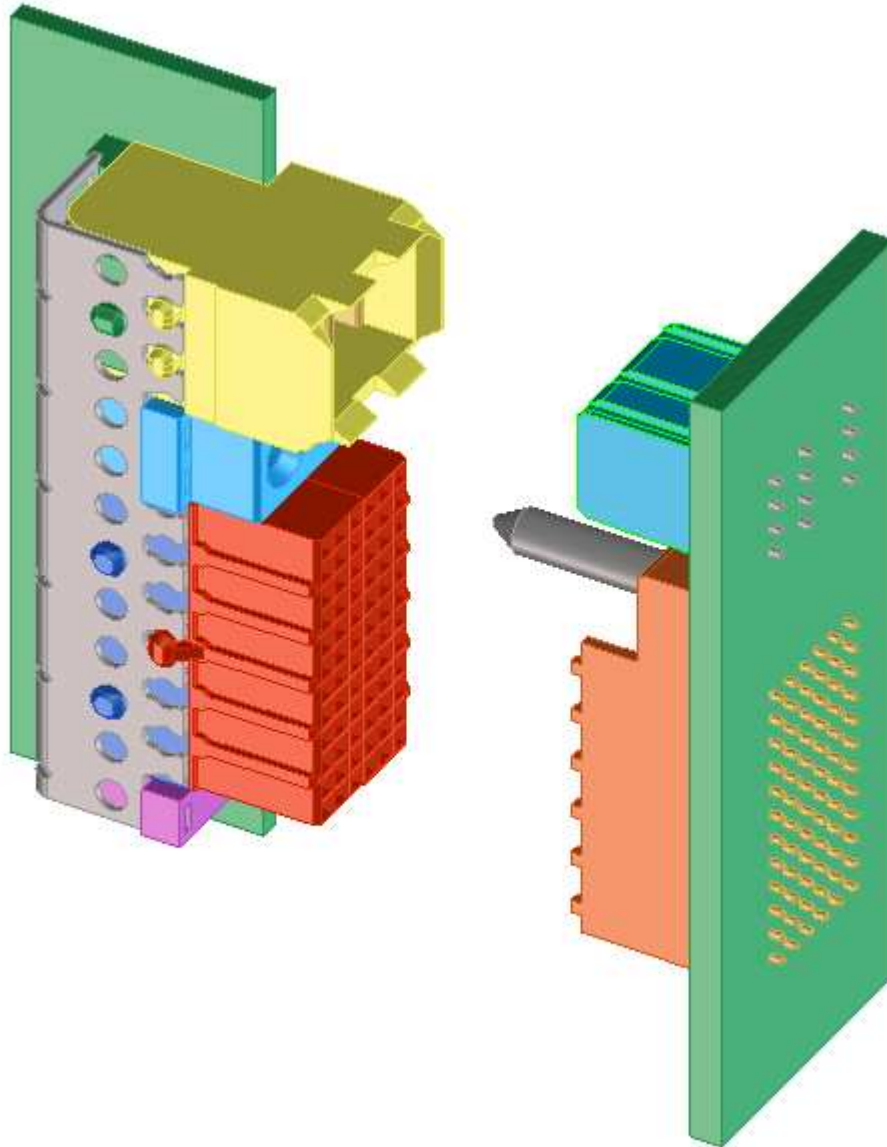
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DOCUMENT NUMBER TS-73670-990		DIMENSION CLASS:  CRITICAL = 0  MAJOR =0	FILENAME SHEET testsum2.lwp 6



PRODUCT SPECIFICATION

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



REVISION: G	ECR/ECN INFORMATION: EC No: UCP2009-2455 DATE: 2009/06/22	TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	SHEET No. 1 of 7
DOCUMENT NUMBER: PS-73670-9999	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
- * 73656, 73659 HDM Backplane Power Module
- * 73670 HDM Daughtercard Assembly
- * 73998 HDM Vertical Daughtercard Power Module

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

- 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

REVISION: G	ECR/ECN INFORMATION: EC No: UCP2009-2455 DATE: 2009/06/22	TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	SHEET No. 2 of 7
DOCUMENT NUMBER: PS-73670-9999	CREATED / REVISED BY: S. DANNELLEY	CHECKED BY: B. SMART	APPROVED BY: S. MILLER



PRODUCT SPECIFICATION

Refer to the appropriate sales drawings and other sections of this specification for additional 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

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

REVISION: G	ECR/ECN INFORMATION: EC No: UCP2009-2455 DATE: 2009/06/22	TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	SHEET No. 3 of 7
DOCUMENT NUMBER: PS-73670-9999	CREATED / REVISED BY: S. DANNELLEY	CHECKED BY: B. SMART	APPROVED BY: S. MILLER



PRODUCT SPECIFICATION

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

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: G	ECR/ECN INFORMATION: EC No: UCP2009-2455 DATE: 2009/06/22	TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	SHEET No. 4 of 7
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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

REVISION: G	ECR/ECN INFORMATION: EC No: UCP2009-2455 DATE: 2009/06/22	TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	SHEET No. 5 of 7
DOCUMENT NUMBER: PS-73670-9999	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: G	ECR/ECN INFORMATION: EC No: UCP2009-2455 DATE: 2009/06/22	TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	SHEET No. 6 of 7
DOCUMENT NUMBER: PS-73670-9999	CREATED / REVISED BY: S. DANIELLEY	CHECKED BY: B. SMART	APPROVED BY: S. MILLER



PRODUCT SPECIFICATION

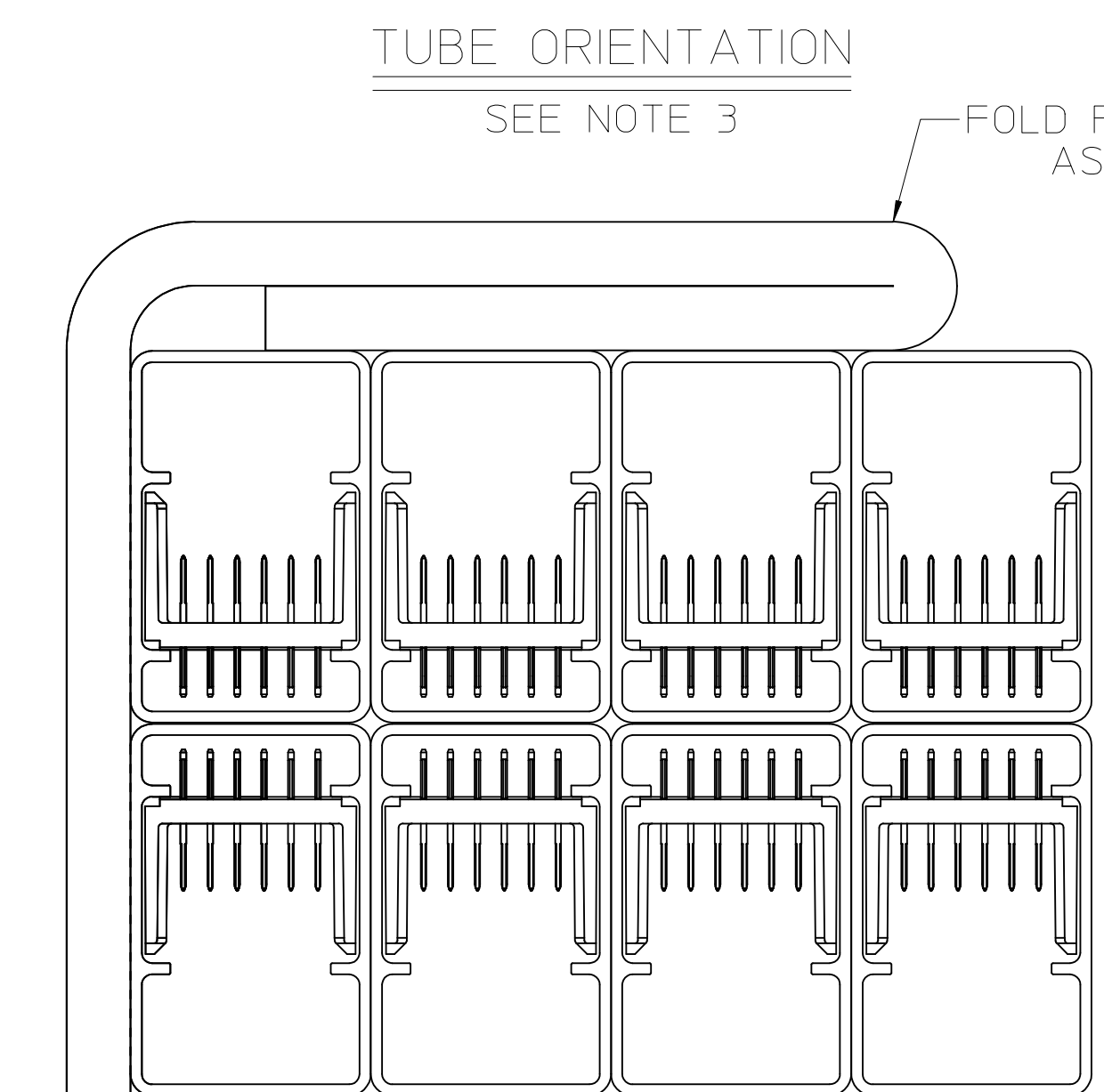
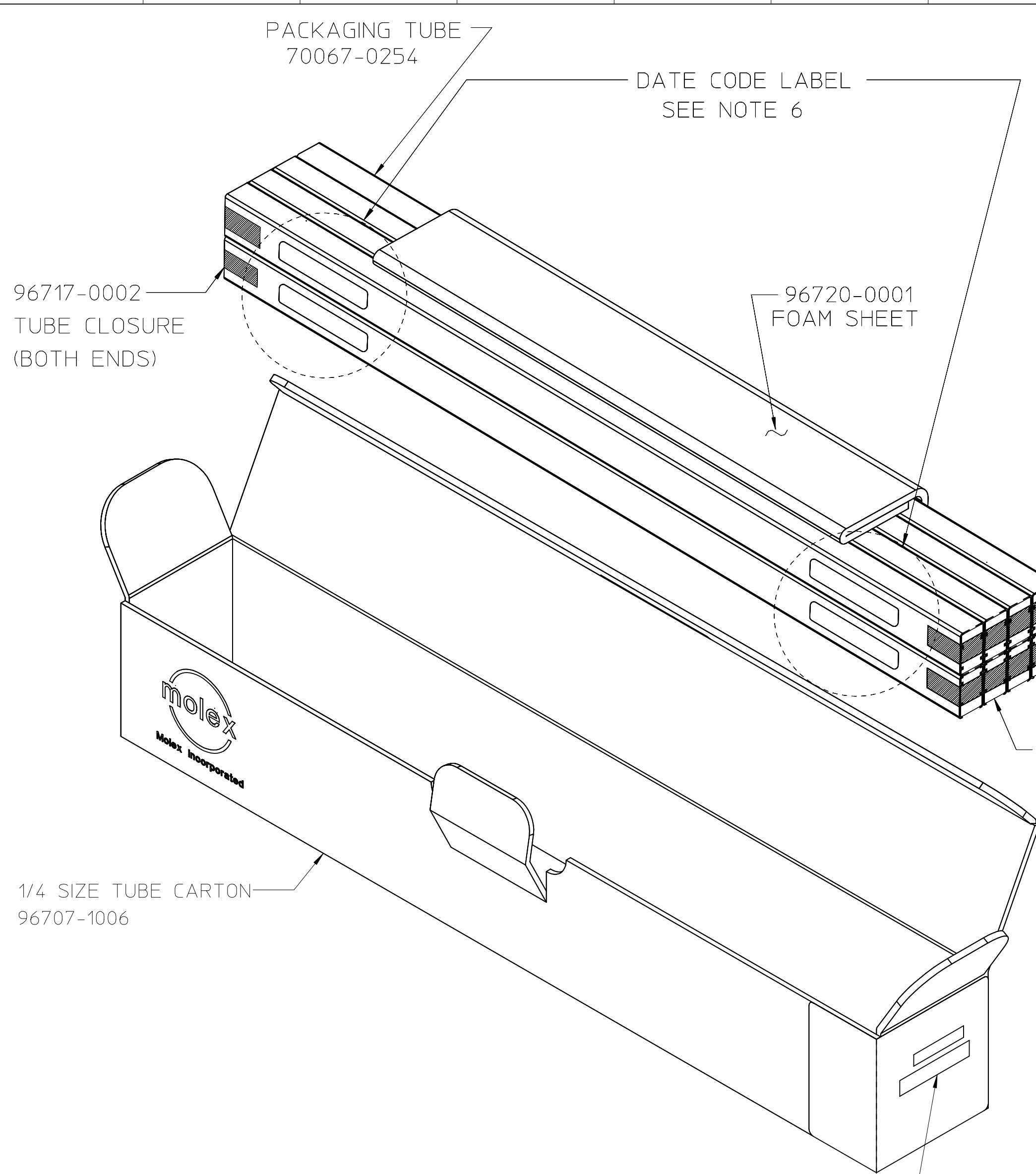
6.0 TEST SEQUENCE

Bellcore Test Plan

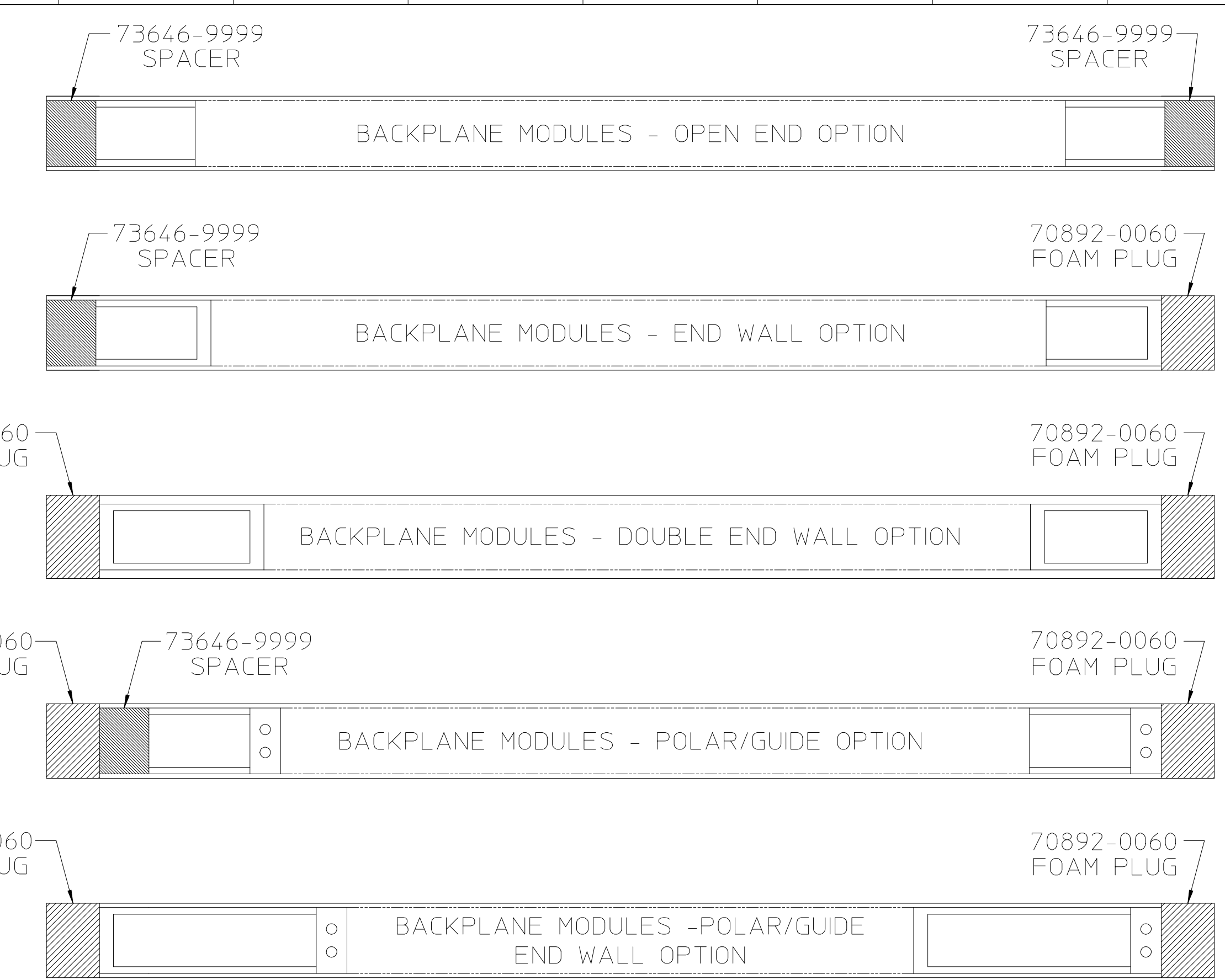
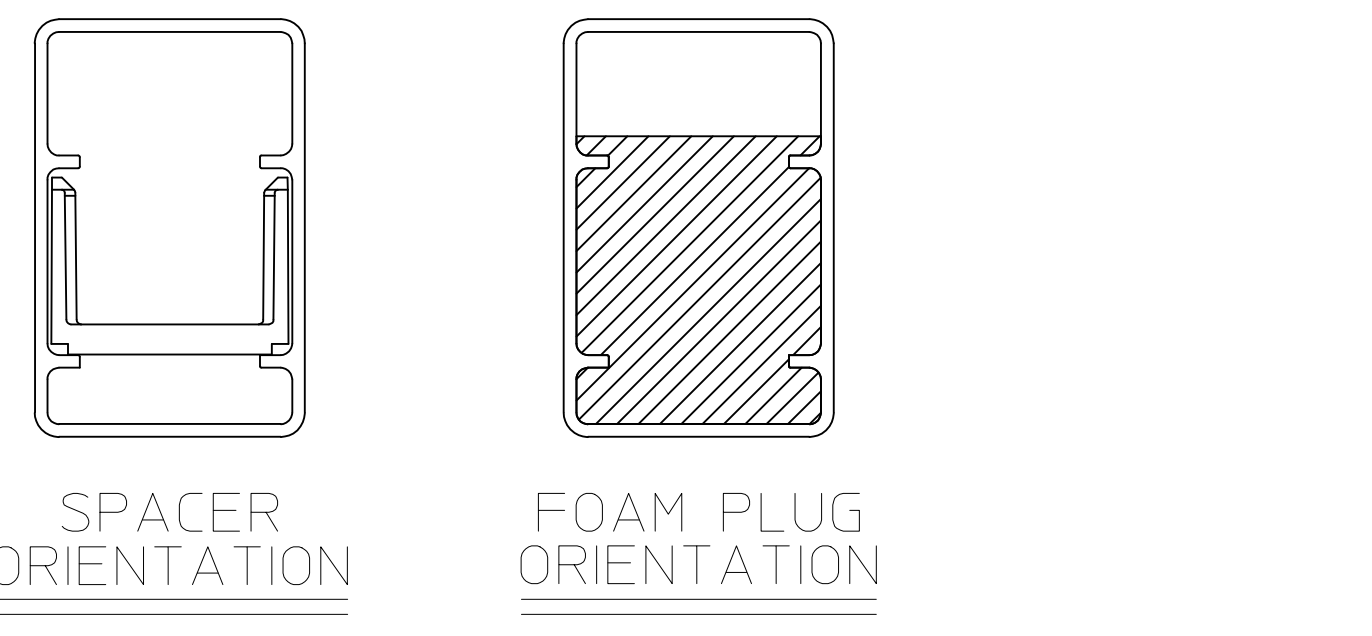
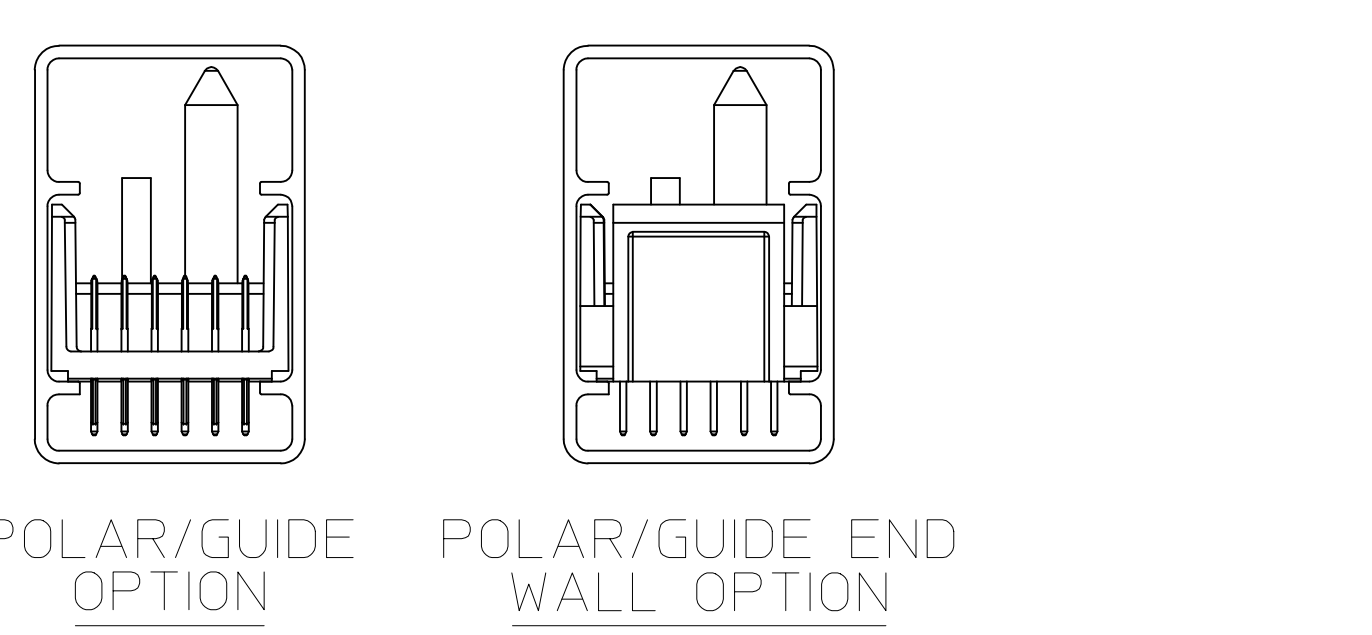
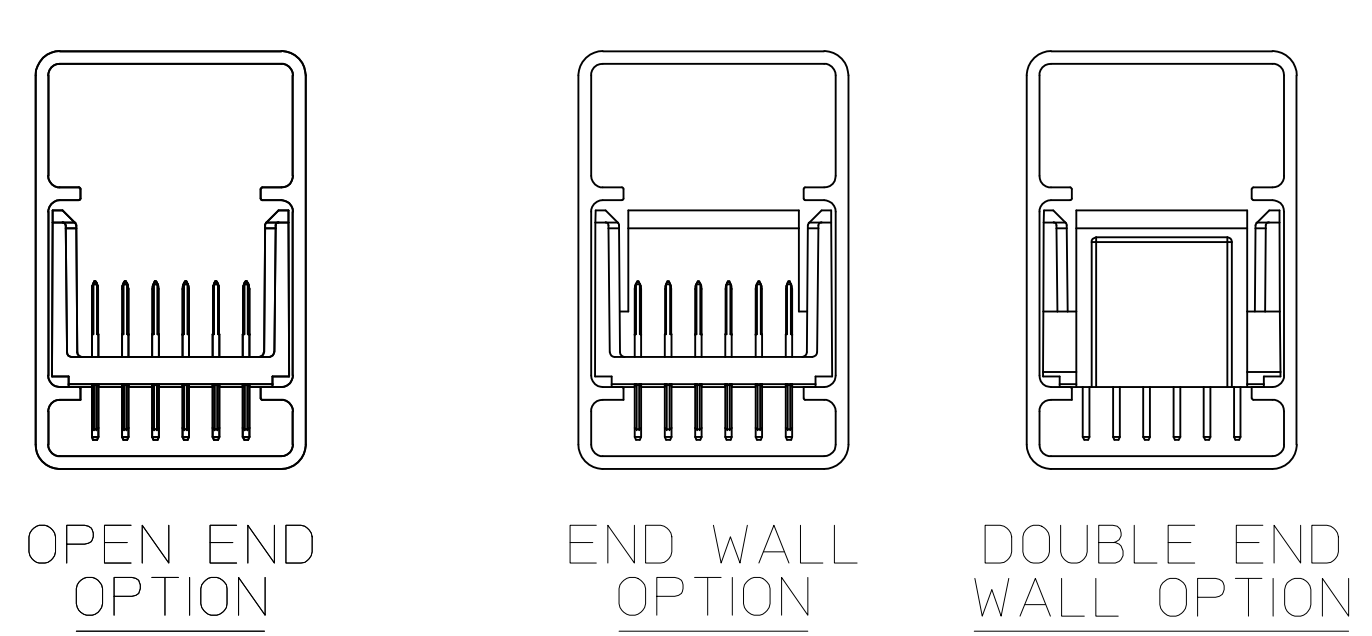
GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5
Visual Exam	Visual Exam	Visual Exam	Visual Exam	Visual Exam
Separation Force Mate/Unmate Forces	Mate/Unmate Forces	Separation Force Mate/Unmate Forces	LLCR/CPIR	Normal Force
LLCR/CPIR	LLCR/CPIR	LLCR/CPIR	Durability (100 cycles)	Plating Thickness
Durability (100 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: G	ECR/ECN INFORMATION: EC No: UCP2009-2455 DATE: 2009/06/22	TITLE: PRODUCT SPECIFICATION FOR HIGH DENSITY METRIC (HDM) INTERCONNECT SYSTEM	SHEET No. 7 of 7
DOCUMENT NUMBER: PS-73670-9999	CREATED / REVISED BY: S. DANNELLEY	CHECKED BY: B. SMART	APPROVED BY: S. MILLER



BACKPLANE MODULE ORIENTATION
SEE NOTE 3



FOAM & SPACER PLACEMENT IN TUBE
PLACE 70892-0060 FOAM PLUG AND 73646-9999 SPACER AT ENDS OF TUBE AS SHOWN
SEE NOTE 4

- NOTES:**
- CARTON CLOSURES MUST BE DONE WITH TAPE.
 - PARTS SHOULD BE PACKAGED PER QUANTITIES SPECIFIED IN CHART.
 - PARTS TO BE LOADED INTO 70067-0254 PACKAGING TUBE AS SHOWN. TUBES TO BE ORIENTED AS SHOWN WITH TOP FOUR TUBES IN ONE DIRECTION AND BOTTOM FOUR TUBES IN OPPOSITE DIRECTION.
 - AFTER FILLING TUBES, 73646-9999 SPACER AND 70892-0060 FOAM PLUG MUST BE INSERTED INTO ENDS OF TUBE AS SHOWN. TUBE ENDS TO BE CLOSED USING 96717-0002 LABEL. ONE PER END.
 - INFORMATION LABEL TO BE WRAPPED AROUND END OF CARTON SUCH THAT PART NUMBER AND BAR CODE ARE COMPLETELY VISIBLE ON END PANEL.
 - MARK CUSTOM LABEL 73728-0000 WITH PART NUMBER & DATE CODE. PLACE ONE LABEL PER TUBE, TO BE PLACED APPROXIMATELY WHERE SHOWN, SUCH THAT, THE LASER MARKS ON THE PARTS ARE NOT COVERED.
 - SPQ (STANDARD PACK QUANTITY) AND MOQ (MINIMUM ORDER QUANTITY) EQUAL ONE (1) 1/4-SIZE TUBE CARTON UNLESS OTHERWISE SPECIFIED IN SAP.
 - CARTON SHOULD ALWAYS BE PACKED WITH EIGHT (8) PACKAGING TUBES AS SHOWN. IF NECESSARY, USE EMPTY TUBES TO SATISFY THIS REQUIREMENT.

POLAR/GUIDE END WALL	144	9	72	0	2
	72	15	120	0	2
POLAR/GUIDE	144	9	72	1	2
	72	16	128	1	2
DOUBLE END WALL	144	9	72	0	2
	72	16	128	0	2
END WALL	144	10	80	1	1
	72	19	152	1	1
OPEN END	144	11	88	2	0
	72	22	176	2	0

BACKPLANE MODULE OPTION	CIRCUIT SIZE	TUBE	1/4-SIZE CARTON	QUANTITY OF SPACERS	QUANTITY OF FOAM PLUGS	
		QUANTITY PER				
MOVED TUBE LABEL EC NO: UCP2013-4159 DRWN:RWHIPPLE 2013/03/28 CHKD:WOLFE 2013/03/29 APPR:SMILLER 2013/05/03 REV	QUALITY SYMBOLS	GENERAL TOLERANCES (UNLESS SPECIFIED)	DIMENSION STYLE	SCALE	DESIGN UNITS	THIRD ANGLE PROJECTION
	▽=0	mm INCH	MM ONLY	1:2	METRIC	
	▽=0	4 PLACES ± --- ± ---	DRAWN BY	DATE	TITLE	
	▽=0	3 PLACES ± --- ± ---	JB INGHAM	1997/02/13	PACKAGING SPECIFICATION FOR HDM BACKPLANE SIGNAL MODULES	
CH	DESCRIPTION	0 PLACES ± --- ± ---	CHECKED BY	DATE	DOCUMENT NO.	SHEET NO.
		ANGULAR ±1/2°	SREED	1997/02/13	PK-70873-0818	1 OF 1
		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS	APPROVED BY	DATE	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION	
			CB IXLER	1997/02/13		