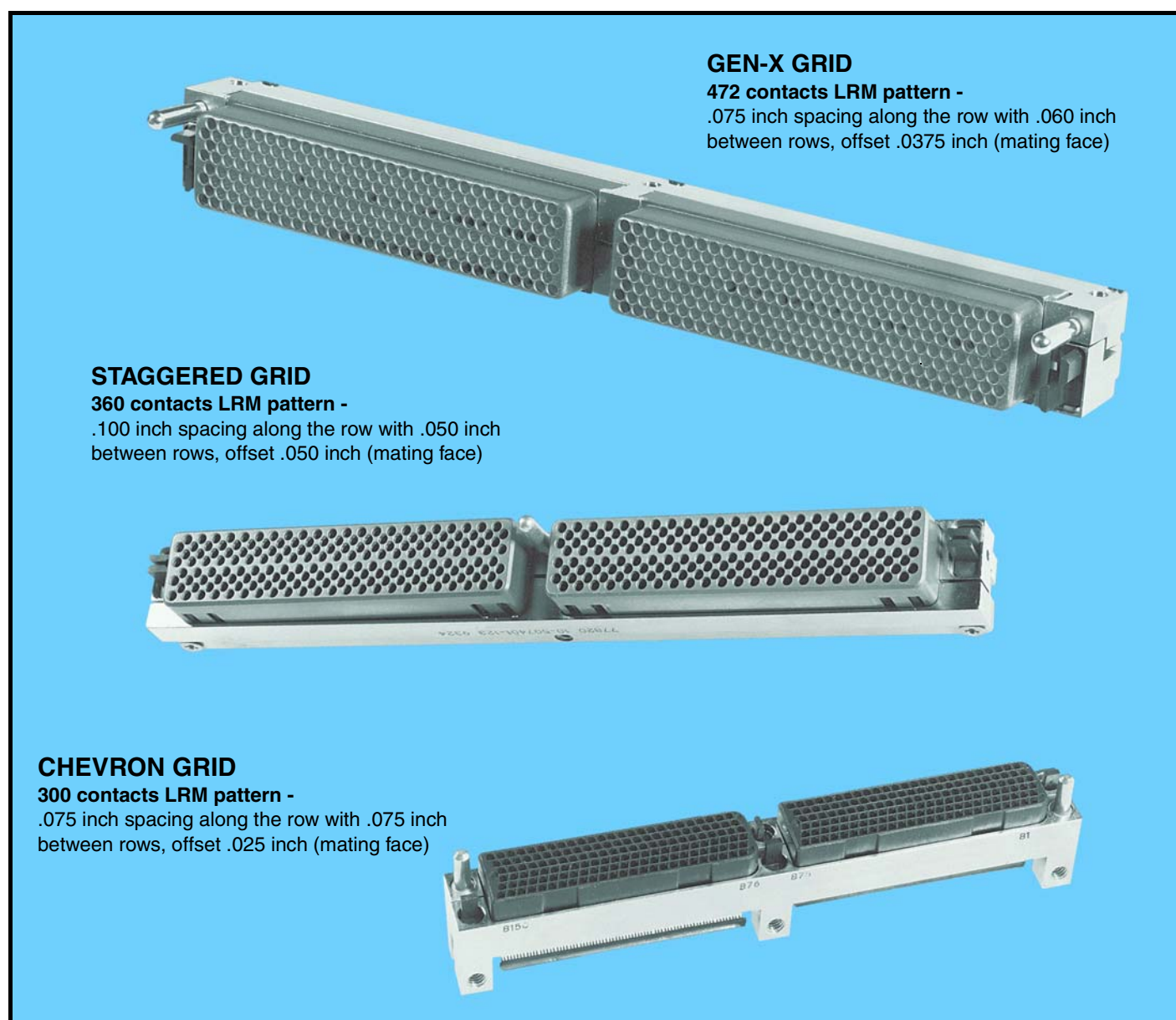


Amphenol® LRM Surface Mount Connectors Designer's Guide

L-2081-2

High Density Interconnect System with MIL-C-55302 type
Bristle® Brush® contacts available in three patterns.



This document contains the most common LRM drawings for designer's reference only.
Contact Amphenol for verification of the latest drawing versions.

Amphenol

This publication provides an engineering drawing package for use as a designer's guide to LRM surface mount connectors.

CAUTION - It is important that the designer check with Amphenol LRM product representatives for the most current drawings, as these drawings included here may become out-dated. The drawings are to be used as reference only, and all final product ordering information should be verified with Amphenol.

Please contact Amphenol Aerospace at the address listed below:

**Amphenol Corporation
Amphenol Aerospace
40 – 60 Delaware Avenue
Sidney, New York 13838-1395
Telephone: 607-563-5342 (New Products Development Group)
Fax: 607-563-5157**

Publication L-2104, “Amphenol® LRM Surface Mount Connectors Reference Guide”, gives general product data on LRM surface mount connectors, and should be used in conjunction with this publication for additional information.

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TAB1 (Web Pg. 2)
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Staggered Grid (Digital) Module How to Order Part Numbers(14 Pages)

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Staggered Grid Hybrid Insert Illustrations
Staggered Grid Hybrid How to Order Part Numbers(4 Pages)

TAB 6 (Web Pg. 48)
Chevron Pattern LRM Connectors Insert Arrangements, Ordering Procedure (1 Page)

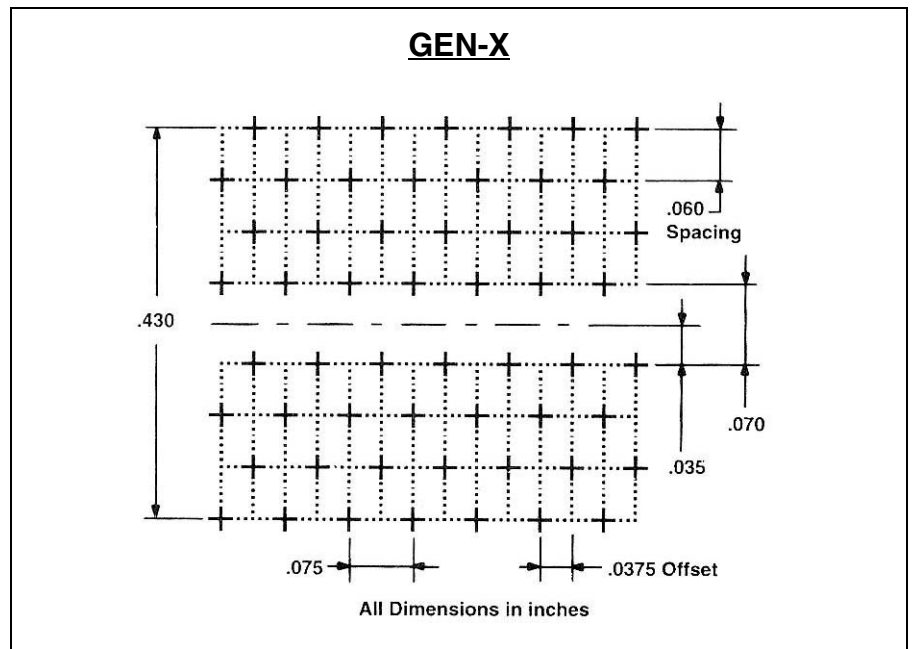
GEN-X Grid Pattern (472 contacts)

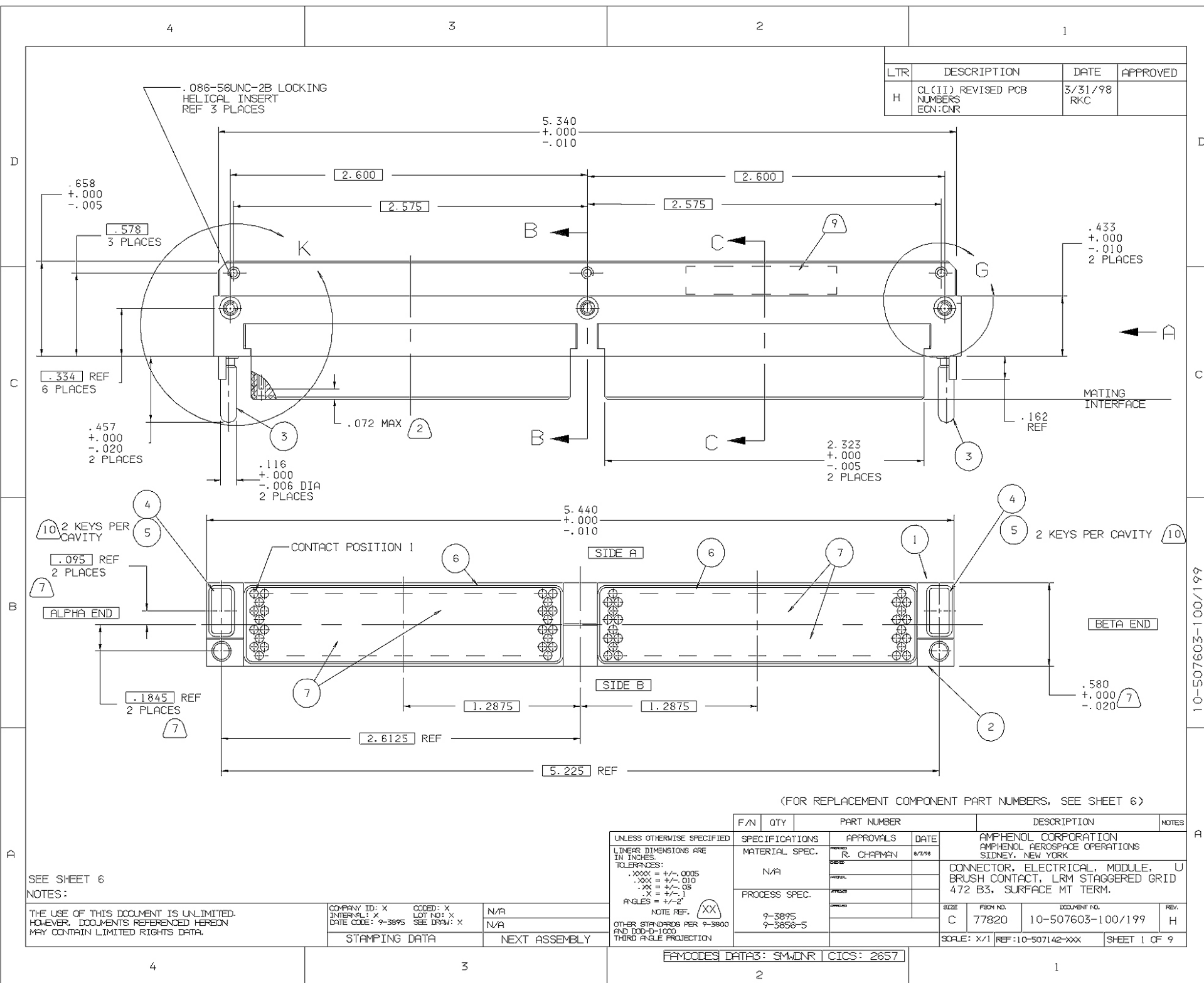
Drawing Package for Double Bay **Module Connectors**

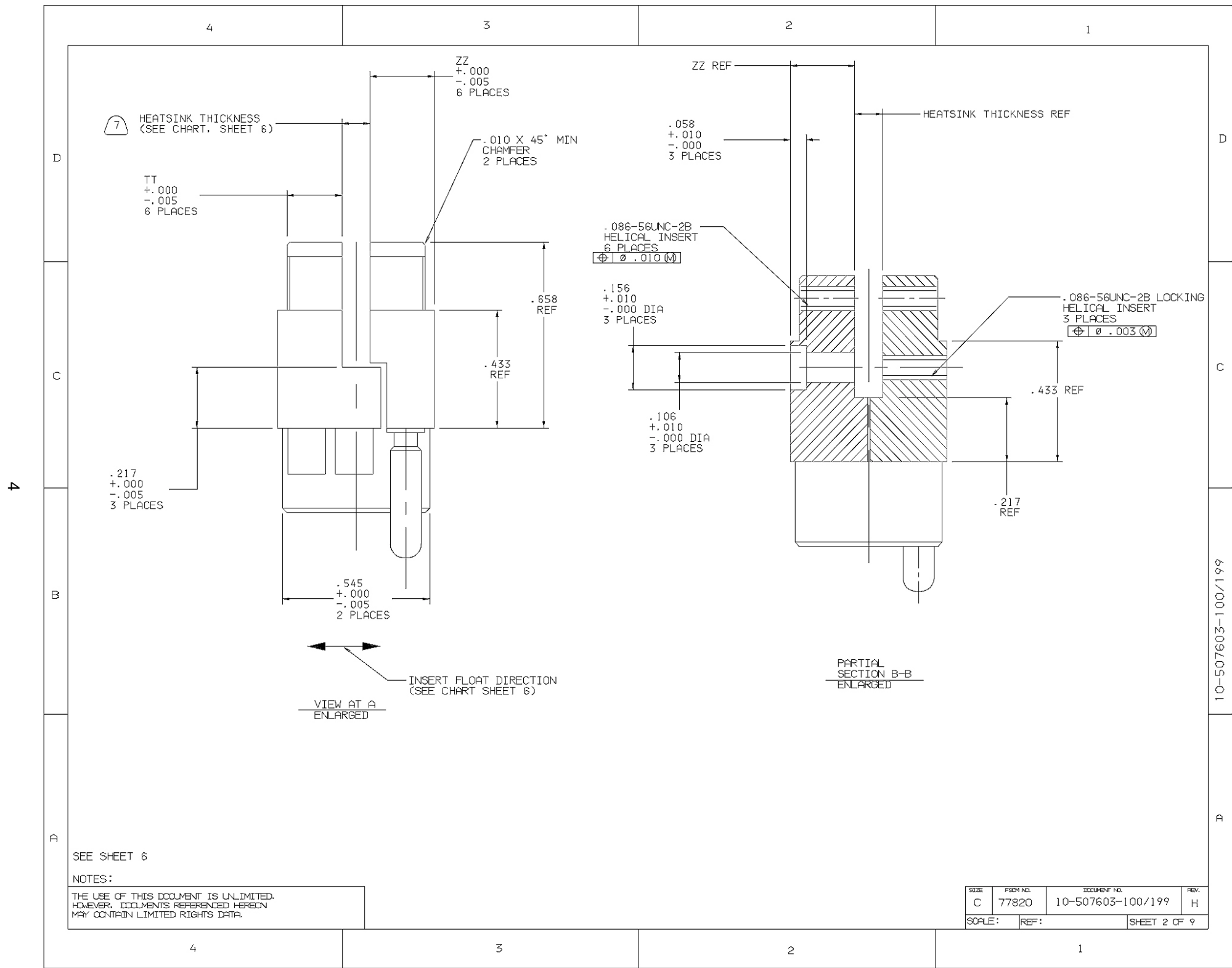
Including how to order part numbers.

The LRM GEN-X 472 contact pattern allows for surface mount leads on a .035 inch center line.

The following diagram shows the contact pattern of the GEN-X grid LRM Connector, .075 inch spacing along the row with .060 inch between rows, offset .0375 inch (mating face).







10-507603-100/199

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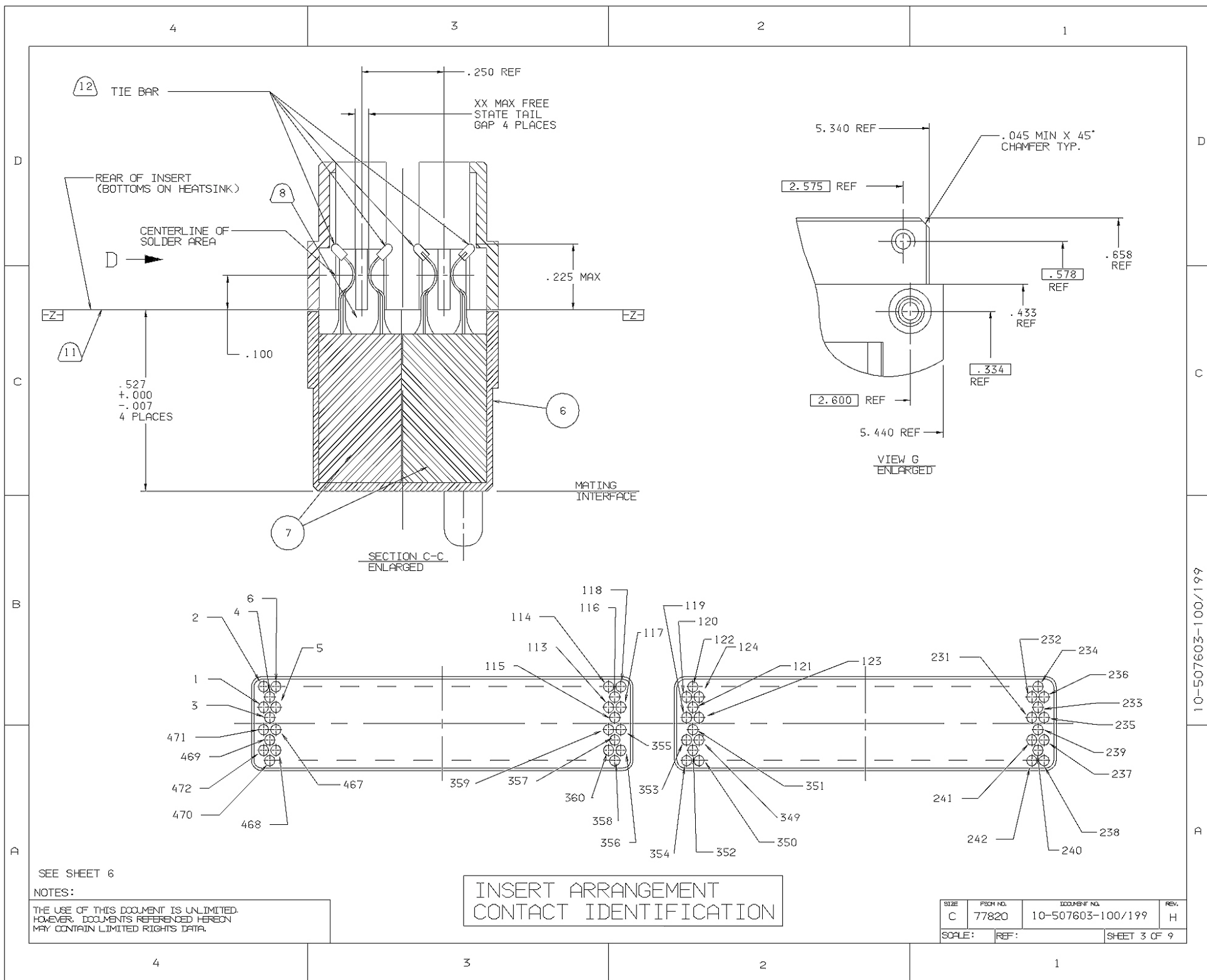
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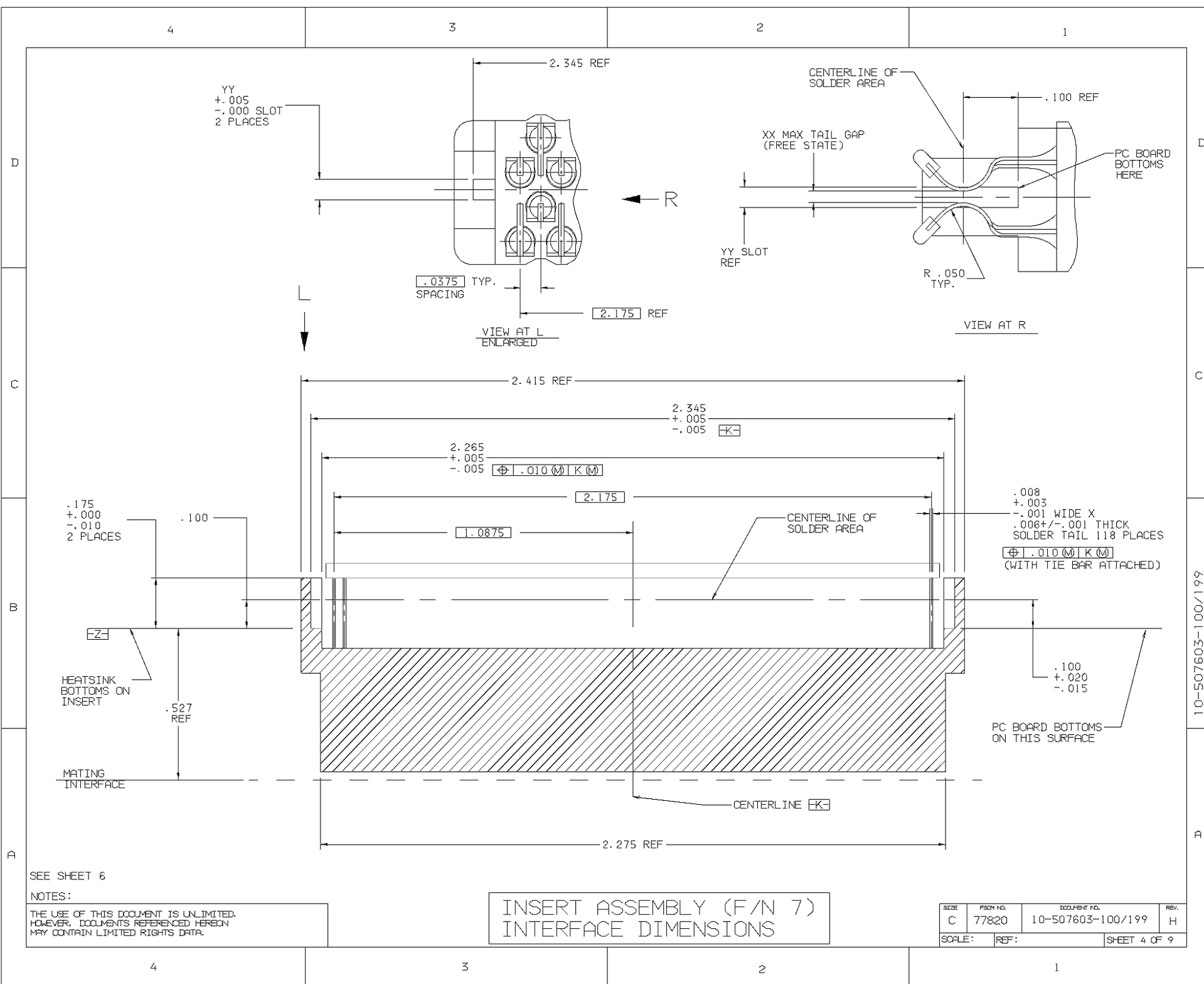
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HEATSINK

MODULE COVER

MODULE COVER

COVER MOUNTING SCREW
(.086-56 X .188 LG
FLAT HEAD MACH. SCREW)
MS24693 REF
NOT SUPPLIED.

8

(CONNECTOR MOUNTING
SCREW NAS1101E2-7)

SHELL TOP

SHELL BOTTOM

VIEW OF CONNECTOR ATTACHMENT METHOD
(SECTION THRU SHELL END MOUNT)

SEES SHEET 6

NOTES:

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HEATSINK

P. C. BOARD

FLEX REGION

TERMINATION BOARD

CONNECTOR SOLDER
TERMINATIONSINSERT
SHIELD

INSERT ASSEMBLY

MATING
INTERFACE

VIEW OF CONNECTOR TERMINATION METHOD
(SECTION THRU INSERT ASSEMBLY)
COVERS REMOVED

10-507603-100/199

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4

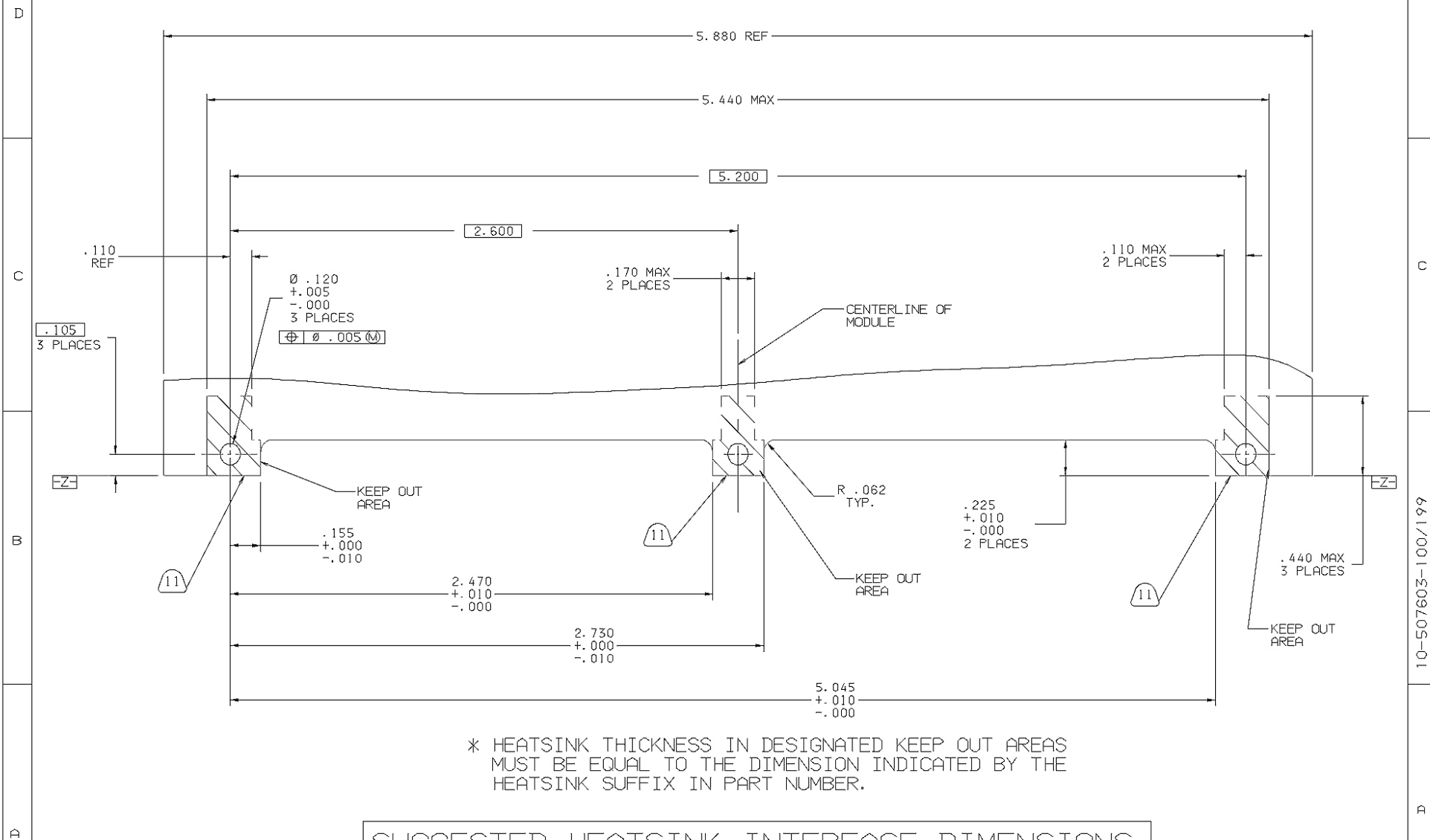
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SIZE	PSDM NO.	DOCUMENT NO.	REV.
C	77820	10-507603-100/199	H
SCALE:	REF:	SHEET 5 OF 9	

	4	3	2	1						
8	D	CONNECTOR PART NUMBER (TO COMPLETE P/N SEE SUFFIX CHART) 10-507603-1() ()		SHELL ASSEMBLY PART NUMBER (TO COMPLETE SEE SUFFIX CHART) 10-507972-11() F/N 1 10-507972-12() F/N 2	INSERT ASSEMBLY PART NUMBER (TO COMPLETE SEE SUFFIX CHART) 10-507985-1() F/N 7	TERMINATION STYLE	REPLACEMENT COMPONENT PART NUMBERS			
		HEATSINK THICKNESS TERMINATION STYLE	HEATSINK THICKNESS							
		PART NUMBER SUFFIX CHART								
		HEATSINK THICKNESS		ZZ	TT	TERMINATION STYLE/BOARD THICKNESS RANGE		XX	YY	
		SUFFIX	DESCRIPTION			SUFFIX	DESCRIPTION			
		1	.100+/- .003	.2385	.2045	1	STRADDLE MOUNT / .027-.035 BOARD	.025	.036	
		2	.075+/- .003	.2510	.217	2	TBD	TBD		
		3	.062+/- .003	.2575	.2235	3	TBD	TBD		
		4	N/A	N/A	N/A	4	TBD	TBD		
		5	.050+/- .003	.2635	.2295	5	TBD	TBD		
C		6	.070+/- .003	.2535	.2195	6	TBD	TBD		
		7				7	TBD	TBD		
		8				8				
		9				9				
		0	NONE	N/A		0	NONE			
		A				A				
		CONNECTOR INSERT FLOAT CHART								
		HEATSINK THICKNESS		LATERAL DISPLACEMENT						
		SUFFIX	THICKNESS	MIN	MAX					
		1	.100+/- .003	+/- .006	+/- .028					
2	.075+/- .003	+/- .010	+/- .028							
3	.062+/- .003	+/- .010	+/- .028							
4	N/A	N/A	N/A							
B		5	.050+/- .003	+/- .010	+/- .028					
		6	.070+/- .003	+/- .010	+/- .028					
		7	TBD							
		7. INDICATED DIMENSIONS ARE APPLICABLE ONLY WHEN ASSEMBLED TO THE APPROPRIATE HEATSINK SHOWN IN CHART.						12. TIE BARS MUST BE REMOVED.		
		6. FOR APPROPRIATE HEATSINK THICKNESS, SEE COLUMN.						11. INDICATED SURFACE OF INSERTS BOTTOM ON INDICATED EDGE OF HEATSINK.		
		5. BRUSH CONTACT TERMINATION FINISH IS Sn60 OR Sn63 SOLDER DIPPED.						10. A TOTAL OF 4 KEYS AND 2 RETAINING RINGS ARE REQUIRED TO COMPLETE THE ASSEMBLY. RETAINING RINGS ARE NOT REUSABLE AND MUST BE REPLACED WHEN REKEYING CONNECTOR.		
		4. FOR MATING BACKPLANE CONNECTOR ASSEMBLY, SEE DRAWING 10-507702-100/199.						9. BLACK INK STAMP "AMPHENOL" 77820 PART NUMBER AND DATE CODE ON INDICATED SURFACES PER 9-3856-5. DATE CODE PER 9-3895. CHARACTERS TO BE .062+/- .020 HIGH. ADDITIONAL INFORMATION MAYBE REQUESTED BY PURCHASE ORDER.		
		3. PARTS ARE SHOWN ASSEMBLED. THESE PARTS WILL BE SHIPPED UNASSEMBLED (SEE SHEET 9).						8. REAR SURFACE OF INSERTS ARE SEALED IN BRUSH CONTACT AREA ONLY CONTACTS ARE NOT REMOVABLE.		
		2. INDICATED DIMENSION IS TO POINT OF ELECTRICAL ENGAGEMENT.								
		A		1. FOR SUGGESTED HEATSINK SEE SHEET 8. FOR BOARD LAYOUT SEE SHEET 7.						
NOTES:										
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SIZE C						PSBY NO. 77820	DOCUMENT NO. 10-507603-100/199	REV. H		
SCALE:						REF:	SHEET 6 OF 9			
4	3			2	1					



SEE SHEET 6

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SIZE	PSOM NO.	DOCUMENT NO.	REV.
C	77820	10-507603-100/199	H
SCALE:	REF:	SHEET 8 OF 9	

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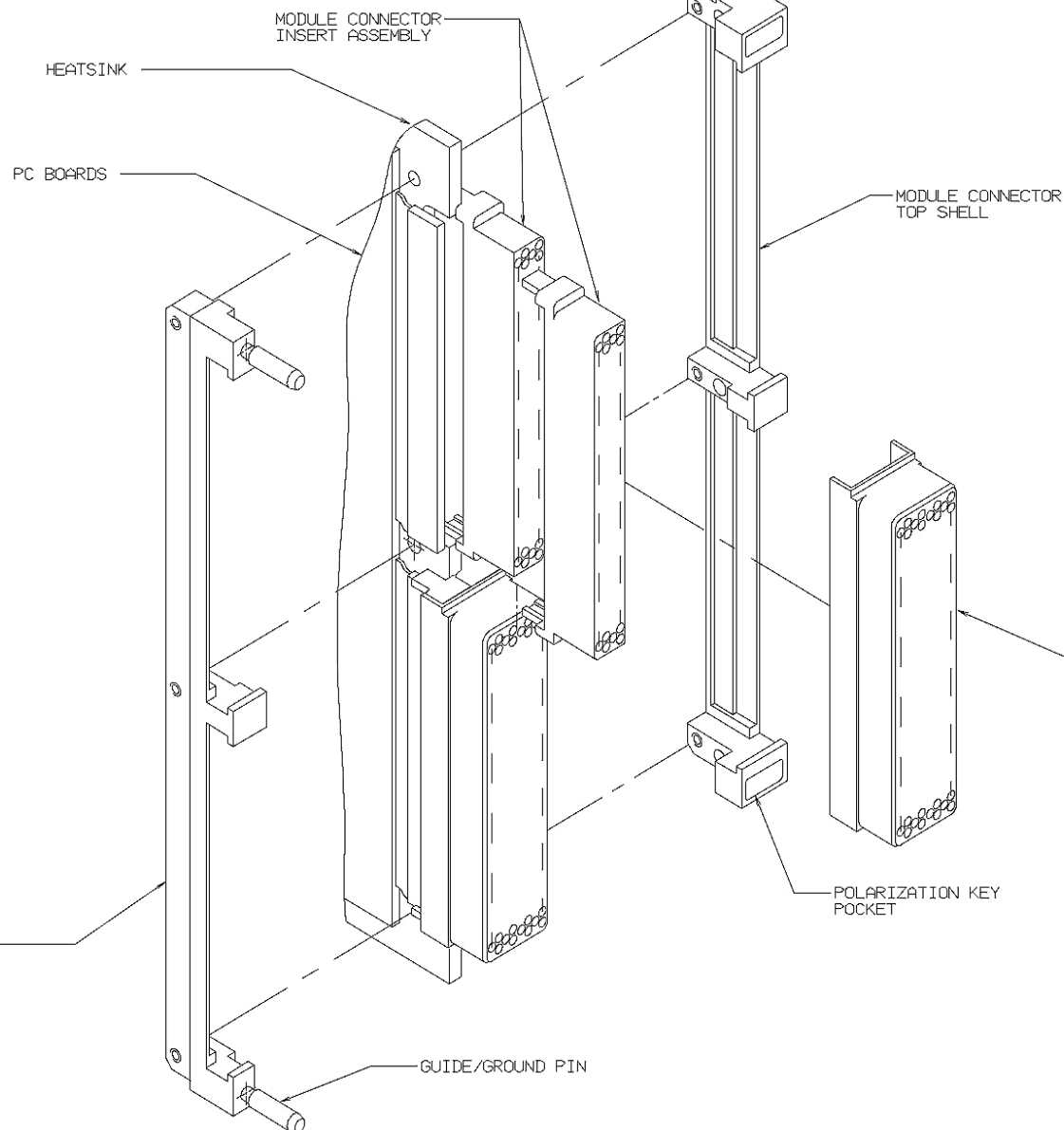
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10-507603-100/199

D

LRM CONNECTOR
SHELL BOTTOM

GUIDE/GROUND PIN

MODULE/CONNECTOR ASSEMBLY EXPLODED VIEW

(MODULE COVERS REMOVED)

SEE SHEET 6

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SIZE	PSOM NO.	DOCUMENT NO.	REV.
C	77820	10-507603-100/199	H
SCALE:	REF:	SHEET 9 OF 9	

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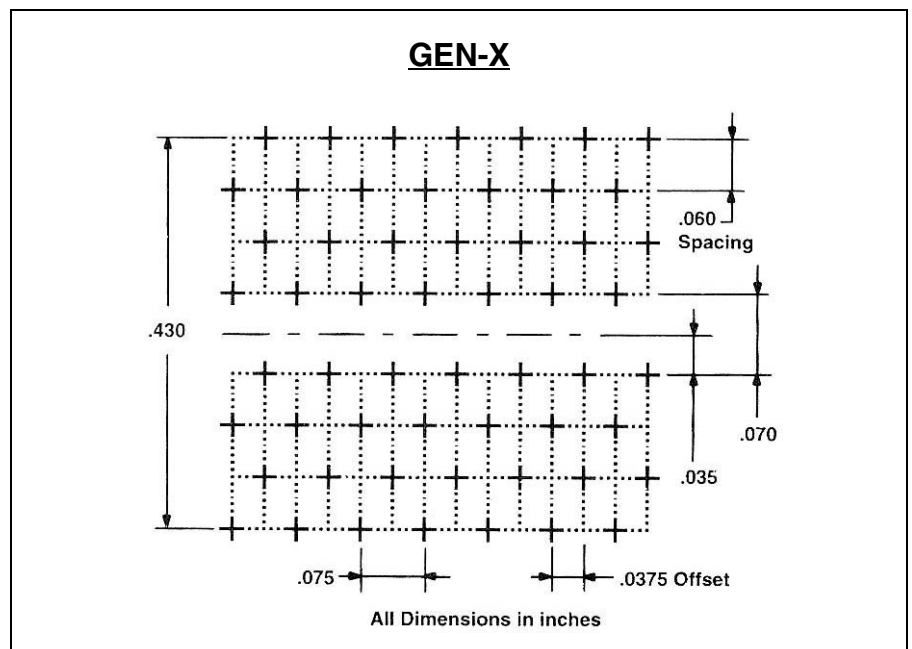
GEN-X Grid Pattern (472 contacts)

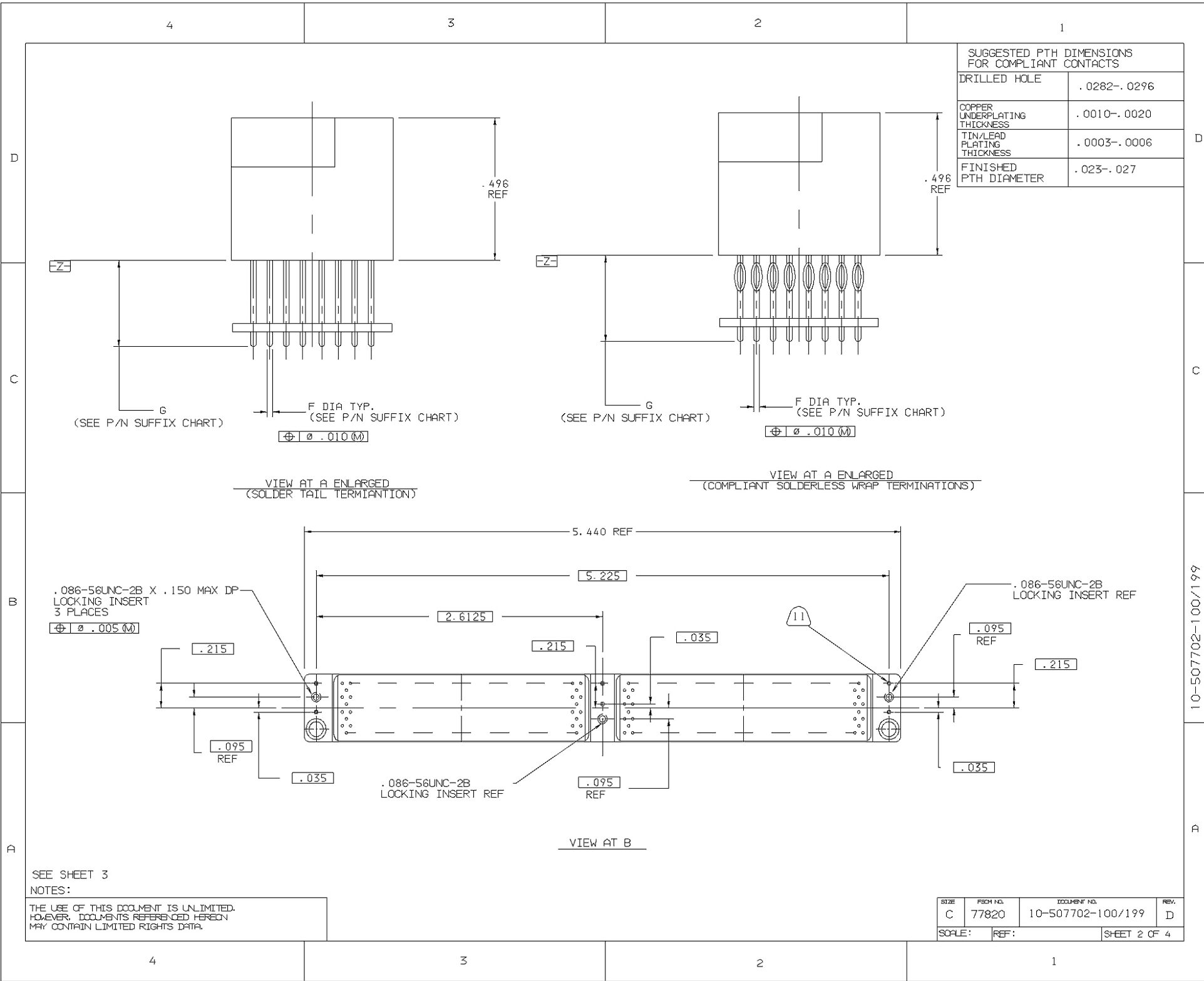
Drawing Package for Double Bay **Backplane Connectors**

Including how to order part numbers.

The LRM GEN-X 472 contact pattern allows for surface mount leads on a .035 inch center line.

The following diagram shows the contact pattern of the GEN-X grid LRM Connector, .075 inch spacing along the row with .060 inch between rows, offset .0375 inch (mating face).





SIZE	PCH NO.	DOCUMENT NO.	REV.
C	77820	10-507702-100/199	D
SCALE:	REF:	SHEET 2 OF 4	

4

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2

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CONNECTOR PART
NUMBER (TO COMPLETE
P/N SEE SUFFIX CHART)

10-507702-1()()

TERMINATION STYLE
TERMINATION STICKOUT

INSERT ASSEMBLY
PART NUMBER
(TO COMPLETE
P/N SEE SUFFIX CHART)

10-507989-1()()

TERMINATION STYLE
TERMINATION STICKOUT

PART NUMBER SUFFIX CHART

TERMINATION STYLE		TERMINATION STICKOUT	
SUFFIX	DESCRIPTION (DIM "F")	SUFFIX	DESCRIPTION (DIM "G")
1	.021+/- .002 DIA PCB TAIL	1	.150+/- .020 (PCB)
2	.016+/- .002 DIA PCB TAIL	2	.200+/- .020 (PCB)
3	.012+/- .002 DIA PCB TAIL	3	.250+/- .020 (PCB)
4	N/A	4	.300+/- .020 (PCB)
5	COMPLIANT	5	.350+/- .020 (PCB)
6	TBD	6	.400+/- .020 (PCB)
7		7	.185+/- .020 (PCB)
8		8	.450+/- .020 (PCB)
9		9	.500+/- .020 (PCB)
0	NONE	A	NA
A		B	NA
		C	.157+/- .020 (COMPLT., NO WRAP)
		D	.217+/- .020 (COMPLT., 1 WRAP)
		E	.317+/- .020 (COMPLT., 2 WRAP)
		F	.417+/- .020 (COMPLT., 3 WRAP)

REPLACEMENT COMPONENT PART NUMBERS

F/N	QTY	PART NUMBER	DESCRIPTION	NOTES
1	1	10-507988-11	SHELL ASSEMBLY	
2	2	SEE COLUMN	INSERT ASSEMBLY	
3	4	10-507903-3	POLARIZATION KEY	2
4	2	10-507929-3	RETAINING RING	2
5	6	10-507912-1	COMPLIANT PINS	2
6	AR	10-507931-1	REPLACEMENT KEY KIT (100 PCS EACH F/N 3 & 4)	10
7	AR	10-507818-12	COMPLIANT CONTACT (NO WRAP)	10
8	AR	10-507818-22	COMPLIANT CONTACT (1 WRAP)	10
9	AR	10-507818-32	COMPLIANT CONTACT (2 WRAP)	10
10	AR	10-507818-42	COMPLIANT CONTACT (3 WRAP)	10

5. BRUSH CONTACTS WITH PCB TAIL TERMINATIONS ARE NOT
REMOVABLE. THE REAR OF THE INSERT IS SEALED. COMPLAINT
CONTACTS ARE REMOVABLE FROM THE FRONT.

4. CONTACT TERMINATION FINISH:
PCB TERMINATION FINISH IS 60/40 TIN/LEAD SOLDER DIPPED.

COMPLIANT TERMINATION FINISH IS GOLD PLATE PER MIL-G-45204,
TYPE II, .000050 MIN THK OVER .000050 MIN THK NICKEL.

3. FOR MATING MODULE CONNECTOR ASSEMBLY, SEE DRAWING 10-507602-100/199.

2. INDICATED PARTS ARE SHOWN ASSEMBLED. THESE PARTS WILL
BE SHIPPED UNASSEMBLED.

1. INDICATED DIMENSIONB IS TO POINT OF ELECTRICAL ENGAGEMENT.

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11. REF HOLES (6 PLACES) ARE FOR GROUNDING THE SHELL TO THE BACKPLANE
USING INCLUDED DOUBLE ENDED COMPLIANT PINS F/N 5. WHEN GROUNDING
IS REQUIRED TRANSFER THE 6 HOLE LOCATIONS TO THE BACKPLANE LAYOUT
AND SPECIFY A FINISHED HOLE SIZE OF .040+/- .003 DIA.

10. INDICATED ITEMS ARE REPAIR OR REPLACEMENT COMPONENT PART NUMBERS.

9. A TOTAL OF 4 KEYS AND 2 RETAINING RINGS ARE REQUIRED TO
COMPLETE THE ASSEMBLY. RETAINING RINGS ARE NOT REUSABLE
AND MUST BE REPLACED WHEN REKEYING CONNECTOR.

8. COMPLIANT TERMINATION WRAP NUMBERS ASSUME A .125 INCH THICK BACKPLANE.

7. INDICATED POSITIONAL TOLERANCE ID FOR PCB TERMINATION ONLY.
THIS TOLERANCE APPLIES WHEN BOTTOM OF INDICATED ORGANIZER
IS WITHIN .020 INCH OF TAIL END.

6. BLACK INK STAMP "AMPHENOL" 77820, PART NUMBER AND DATE CODE
ON INDICATED SURFACE PER 9-3856-5. DATE CODE PER 9-3895.
CHARACTERS TO BE .062+/- .020 HIGH. ADDITIONAL INFORMATION
MAYBE REQUESTED BY PURCHASE ORDER.

SIZE
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PCH NO.
77820

DOCUMENT NO.
10-507702-100/199

REV.
D

SCALE:

REF:

SHEET 3 OF 4

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VIEW P
ENLARGED

(CONNECTOR SIDE SHOWN)
FOR SUGGESTED PTH DIMENSIONS
FOR COMPLIANT CONTACTS, SEE SHEET 2

SIZE	PSCH NO.	DOCUMENT NO.	REV.
C	77820	10-507702-100/199	D
SCALE:		REF:	SHEET 4 OF 4

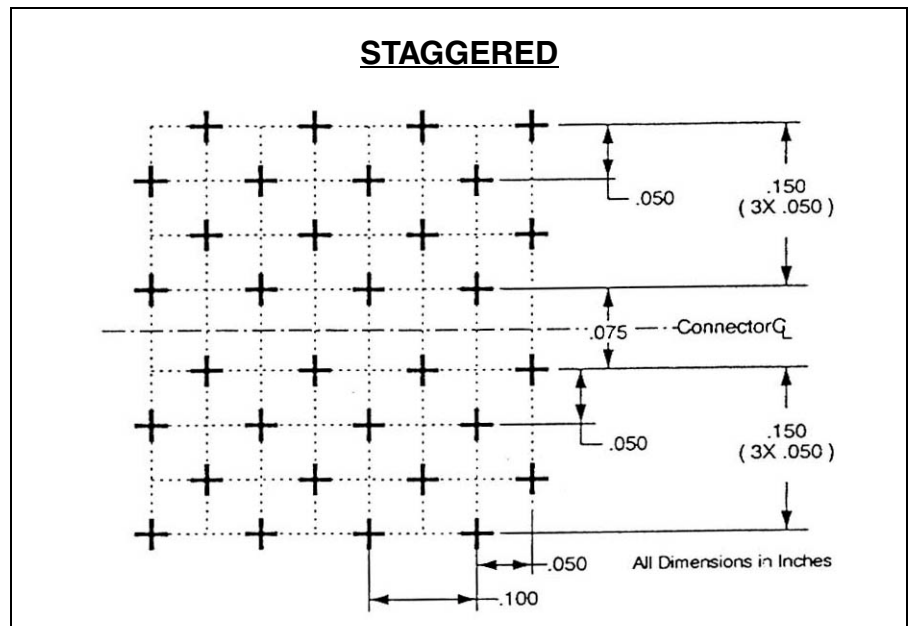
Staggered Grid Pattern (Digital)

Drawing Package for Single, Double and 3-Bay **Module Connectors**

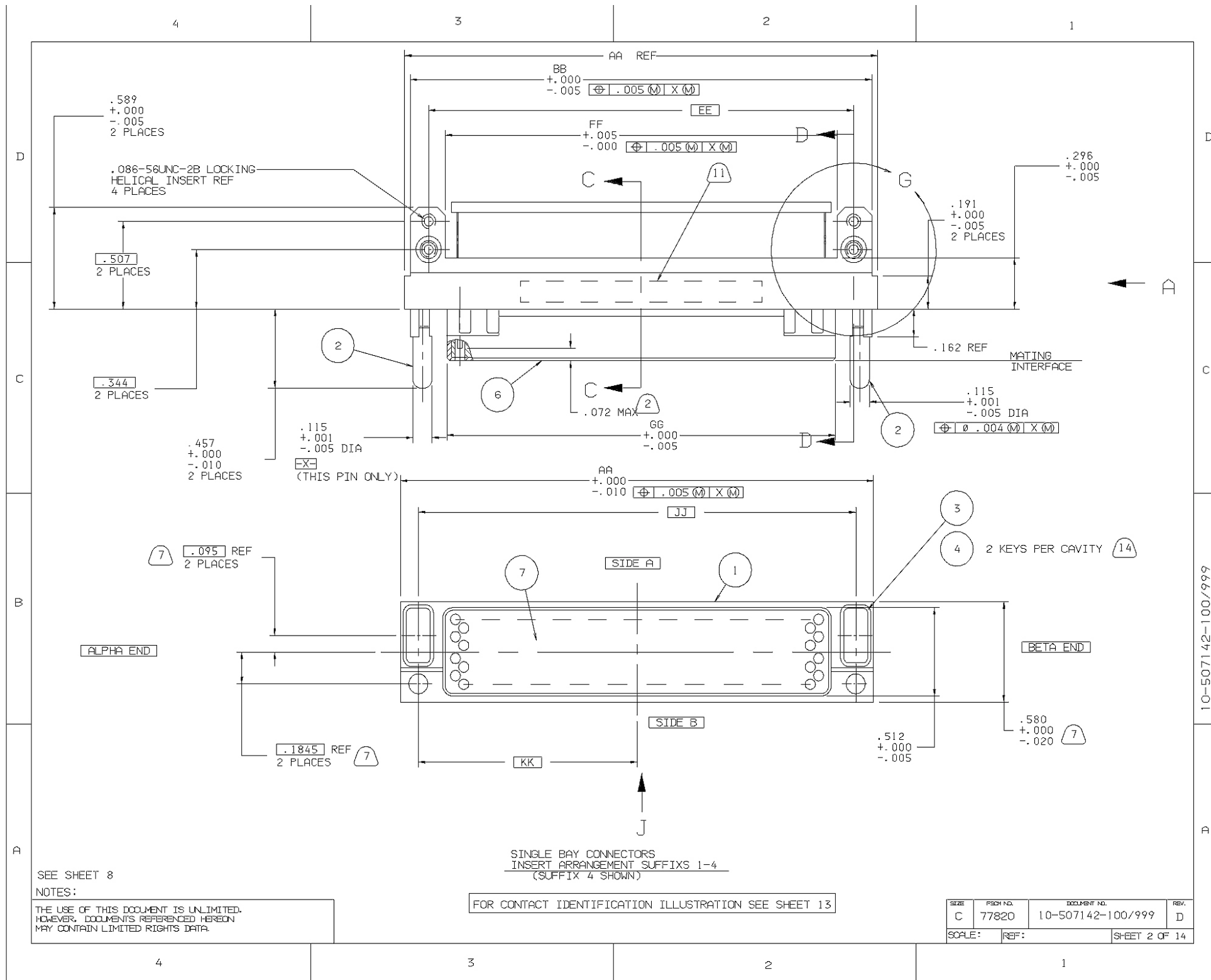
Including how to order part numbers.

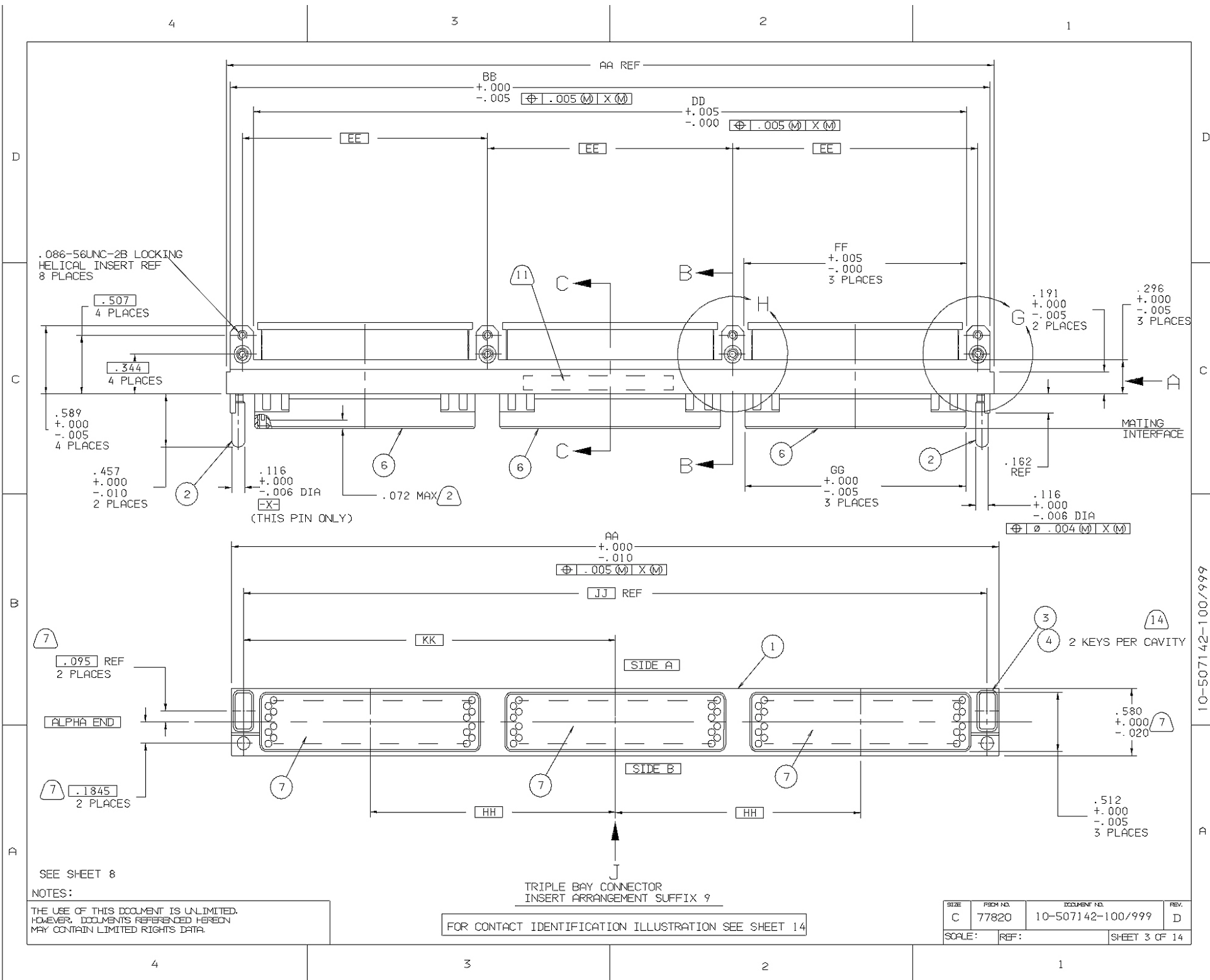
The LRM Staggered pattern allows for surface mount leads on a .025 inch center line.

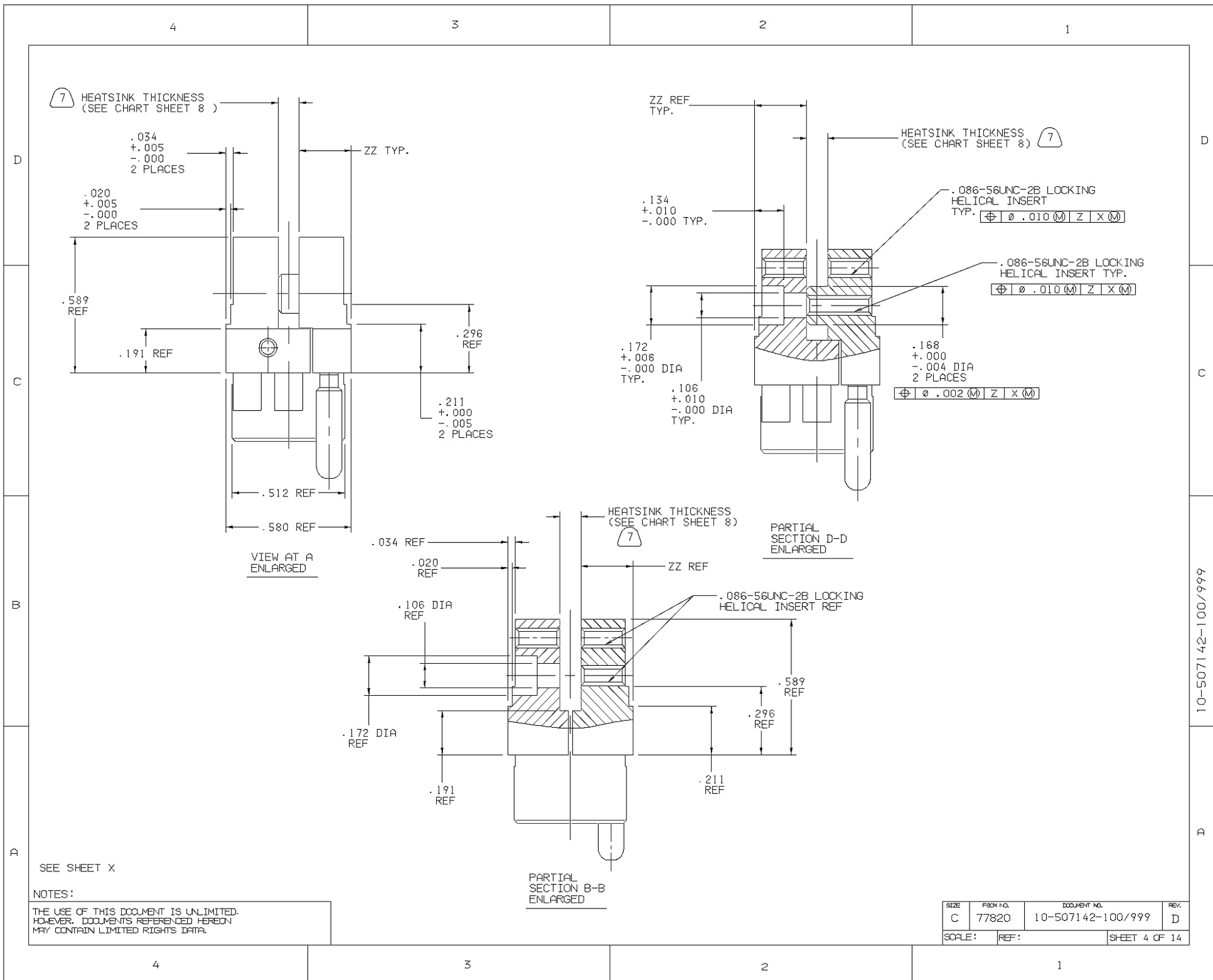
The following diagram shows the contact pattern of the staggered grid LRM Connector, .100 inch spacing along the row with .050 inch between rows, offset .050 inch (mating face).

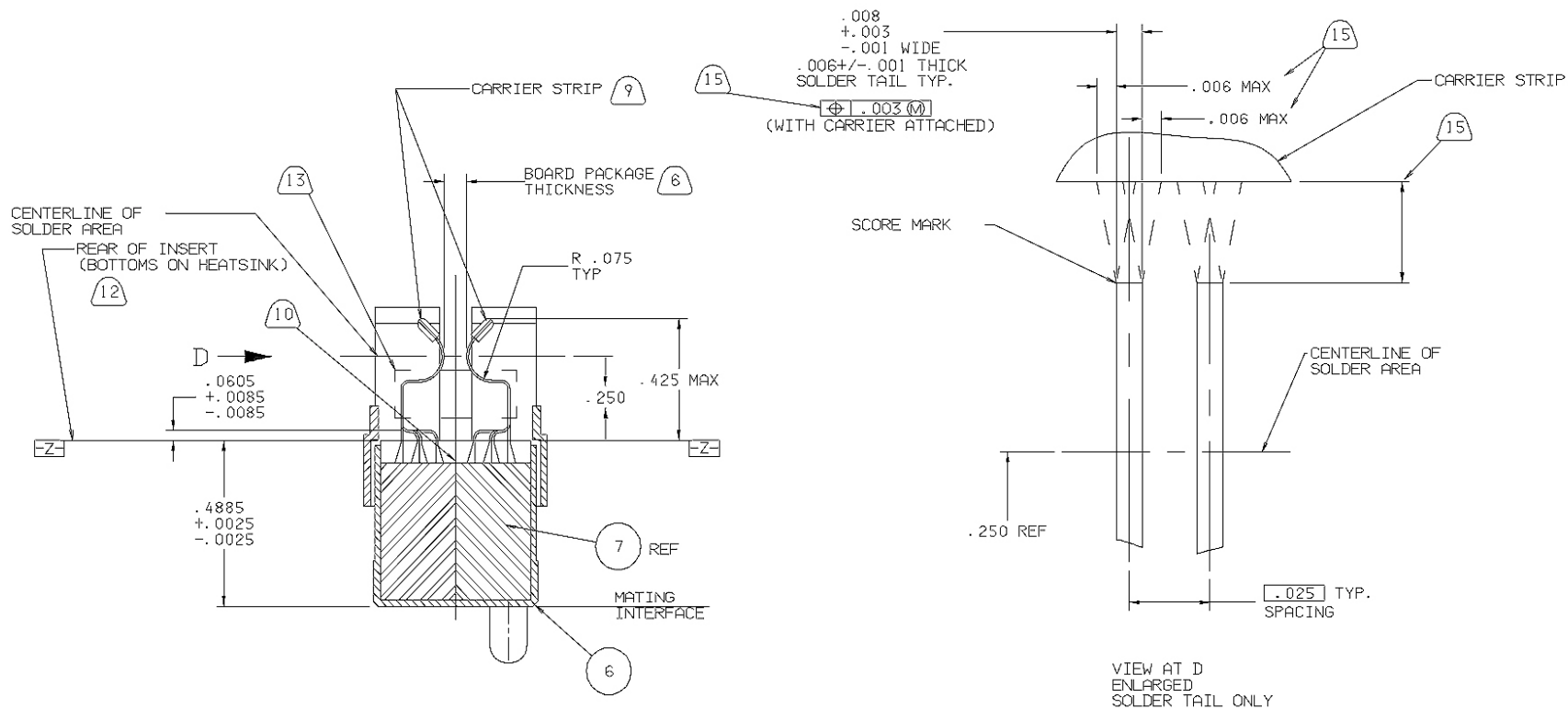




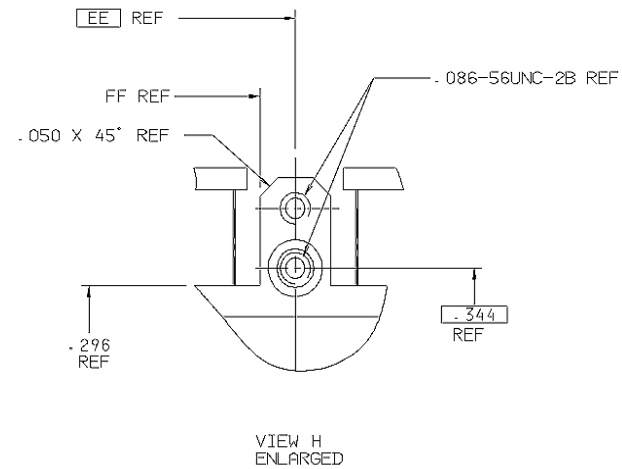
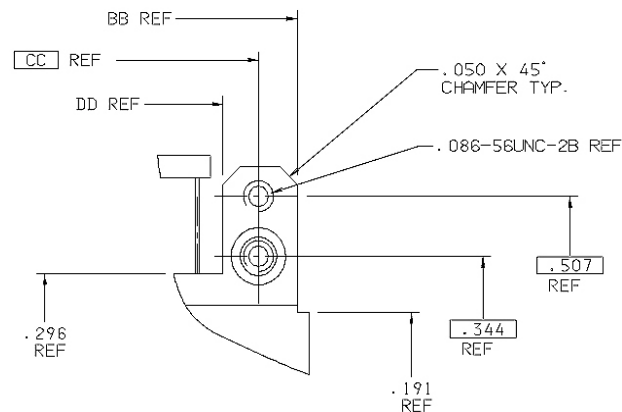








SECTION C-C ENLARGED



SEE SHEET 8

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SIZE	FIG. NO.	DOCUMENT NO.	REV.
C	77820	10-507142-100/999	D
SCALE:	REF:	SHEET 5 OF 14	

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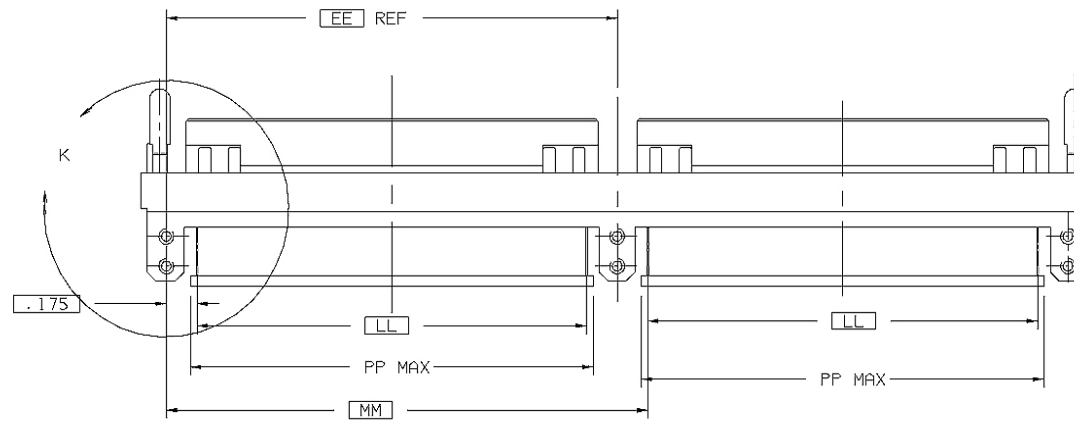
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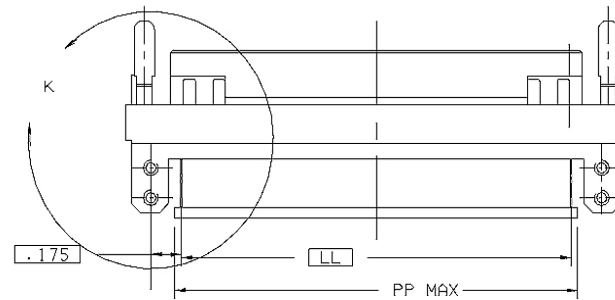
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DOUBLE BAY CONNECTOR (ARRANGEMENT SUFFIXS 5-8)

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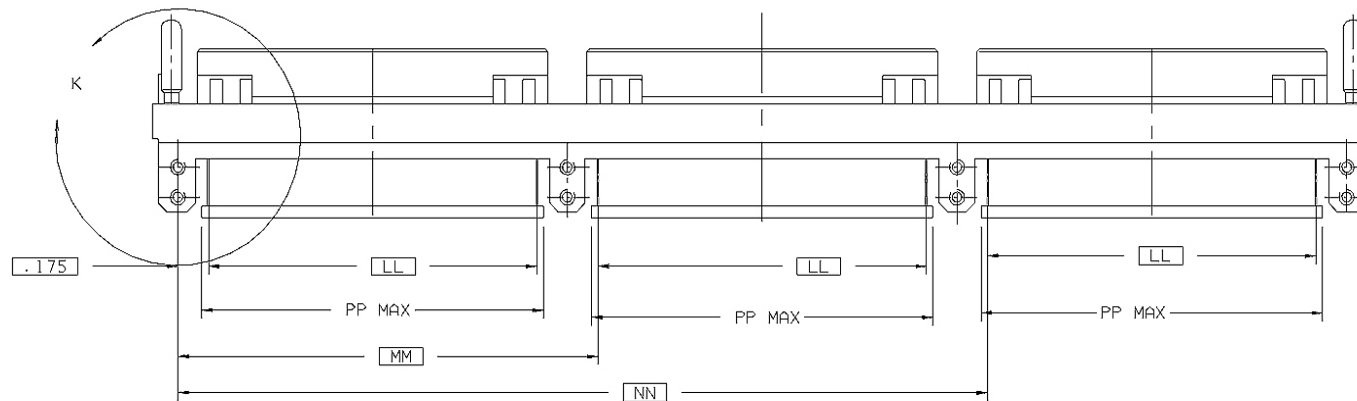
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SINGLE BAY CONNECTOR (ARRANGEMENT SUFFIXS 1-4)

B

10-507142-100/999



TRIPE BAY CONNECTOR (ARRANGEMENT SUFFIX 9)

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SEE SHEET 8

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VIEW AT J

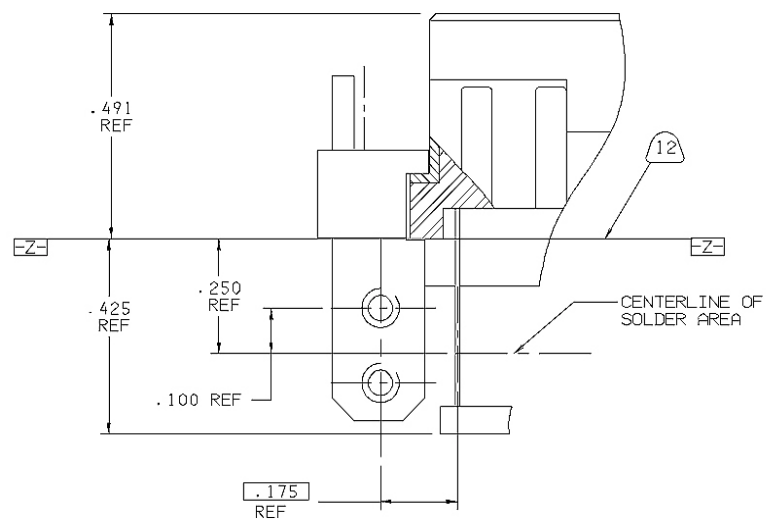
SIZE	FORM NO.	DOCUMENT NO.	REV.
C	77820	10-507142-100/999	D
SCALE:	REF:	SHEET 6 OF 14	

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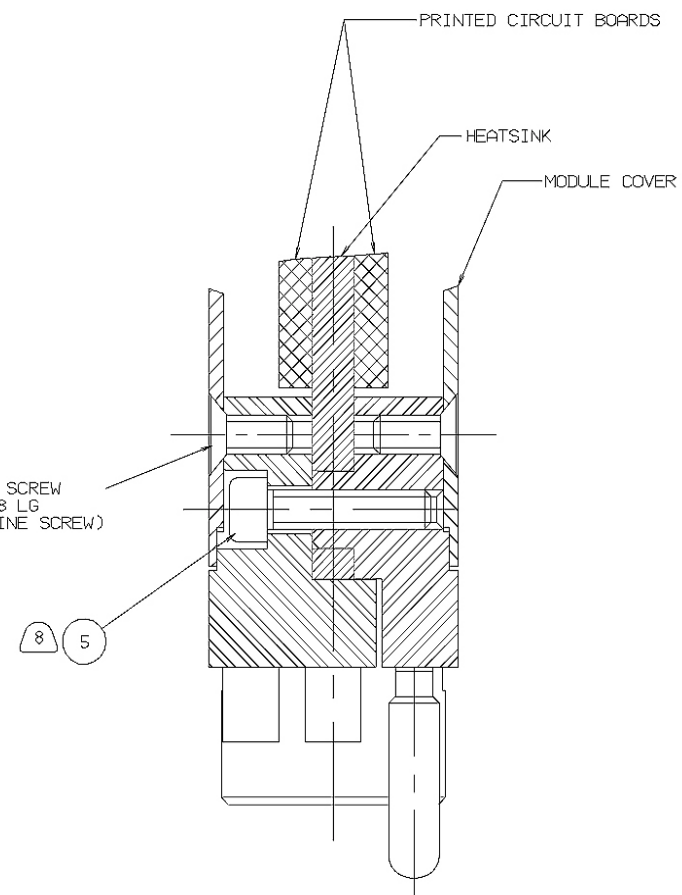
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COVER MOUNTING SCREW
(.086-56 X .188 LG
FLAT HEAD MACHINE SCREW)
NOT SUPPLIED.



VIEW OF CONNECTOR ATTACHMENT METHOD
(SECTION THRU END MOUNTING TAB)

SEE SHEET 8

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SIZE	PCBN NO.	DOCUMENT NO.	REV.
C	77820	10-507142-100/999	D
SCALE:	REF:	SHEET 7 OF 14	

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1

CONNECTOR PART
NUMBER (TO COMPLETE
P/N SEE SUFFIX CHART)

10-507142-() () ()

INSERT ARRANGEMENT
HEATSINK THICKNESS
TERMINATION STYLE

SOLDER FIXTURE
PART NUMBER (TO COMPLETE
SEE SUFFIX CHART)

10-507952-() ()

ARRANGEMENT SUFFIX
HEATSINK THICKNESS

REPLACEMENT COMPONENT PART NUMBERS

F/N	QTY	PART NUMBER	DESCRIPTION
1	1	SEE COLUMN	SHELL ASSEMBLY
2	2	10-507906-2	GUIDE PIN
3	2	10-507929-1	RETAINING RING
4	4	10-507903-3	POLARIZATION KEY
5	AR	10-507905-12	MOUNTING SCREW
6	AR	SEE COLUMN	INSERT SHIELD
7	AR	SEE COLUMN	INSERT ASSEMBLY
8	--	SEE COLUMN	SOLDER FIXTURE
9	--	10-507930-1	CARRIER REMOVAL
10	--	10-507931-2	REPLACEMENT KEY KIT (100 PCS EACH OF F/N 3 & 4)

PART NUMBER SUFFIX CHART

INSERT ARRANGEMENT		HEATSINK THICKNESS		ZZ +.0025 -.0025	TERMINATION STYLE/PACKAGE THICKNESS	
SUFFIX	DESCRIPTION	SUFFIX	DESCRIPTION		SUFFIX	DESCRIPTION
1	80 DIGITAL (SINGLE BAY)	1	.125+/- .005	.2225	1	SURFACE MOUNT / .090-.130 PACKAGE
2	108 DIGITAL (SINGLE BAY)	2	.100+/- .005	.235	2	SURFACE MOUNT / .130-.190 PACKAGE
3	152 DIGITAL (SINGLE BAY)	3	.075+/- .005	.2475	3	SURFACE MOUNT / .190-.250 PACKAGE
4	180 DIGITAL (SINGLE BAY)	4	.062+/- .005	.254	4	SURFACE MOUNT / .060-.100 PACKAGE
5	160 DIGITAL (DOUBLE BAY)	5	.035+/- .005	.2675	5	SURFACE MOUNT / .100-.160 PACKAGE
6	216 DIGITAL (DOUBLE BAY)	6	TBD	TBD	6	SURFACE MOUNT / .160-.220 PACKAGE
7	304 DIGITAL (DOUBLE BAY)	7			7	TBD
8	360 DIGITAL (DOUBLE BAY)	8			8	
9	456 DIGITAL (TRIPLE BAY)	9			9	
0	NONE	0	NONE	N/A	0	NONE
A	TBD	A			A	

CONNECTOR PART NUMBER	AA	BB	CC	DD	EE	FF	GG	HH	JJ	KK	LL	MM	NN	PP	SHELL ASSEMBLY ADD H/S SUFFIX TO COMPLETE)	INSERT SHIELD	INSERT ASSEMBLY (ADD TERM. SUFFIX TO COMPLETE)
10-507142-1XX	1.615	1.547	N/A	N/A	1.325	1.123	1.103	N/A	1.400	.700	.975	N/A	N/A	1.050	10-507956-1()	10-507910-102	10-507958-80()
10-507142-2XX	1.965	1.897	N/A	N/A	1.675	1.473	1.453	N/A	1.750	.875	1.325	N/A	N/A	1.400	10-507956-2()	10-507910-152	10-507958-10()
10-507142-3XX	2.515	2.447	N/A	N/A	2.225	2.023	2.003	N/A	2.300	1.150	1.875	N/A	N/A	1.950	10-507956-3()	10-507910-92	10-507958-15()
10-507142-4XX	2.865	2.797	N/A	N/A	2.575	2.373	2.353	N/A	2.650	1.325	2.225	N/A	N/A	2.300	10-507956-4()	10-507910-42	10-507958-18()
10-507142-5XX	2.940	2.872	2.650	2.448	1.325	1.123	1.103	.6625	2.725	1.3625	.975	1.500	N/A	1.050	10-507956-5()	10-507910-102	10-507958-80()
10-507142-6XX	3.640	3.572	3.350	3.148	1.675	1.473	1.453	.8375	3.425	1.7125	1.325	1.850	N/A	1.400	10-507956-6()	10-507910-152	10-507958-10()
10-507142-7XX	4.740	4.672	4.450	4.248	2.225	2.023	2.003	1.1125	4.525	2.2625	1.875	2.400	N/A	1.950	10-507956-7()	10-507910-92	10-507958-15()
10-507142-8XX	5.440	5.372	5.150	4.948	2.575	2.373	2.353	1.2875	5.225	2.6125	2.225	2.750	N/A	2.300	10-507956-8()	10-507910-42	10-507958-18()
10-507142-9XX	6.965	6.897	N/A	6.473	2.225	2.023	2.003	2.225	6.750	3.375	1.875	2.400	4.625	1.950	10-507956-9()	10-507910-92	10-507958-15()

9. CONDUCTIVE CARRIER STRIPS MUST BE REMOVED. NON-CONDUCTIVE CARRIER STRIPS ARE NOT SCORED AND MAYBE LEFT IN PLACE.
8. THE CONNECTOR IS ATTACHED USING SUPPLIED MOUNTING SCREWS. SEE SHEET 7.
7. INDICATED DIMENSIONS ARE APPLICABLE ONLY WHEN ASSEMBLED TO THE APPROPRIATE HEATSINK THICKNESS SHOWN IN CHART.
6. FOR APPROPRIATE PCB/HEATSINK PACKAGE THICKNESS, SEE COLUMN.
5. BRUSH CONTACT TERMINATION FINISH IS Sn60 OR Sn63 SOLDERED DIPPED.
4. FOR MATING BACKPLANE CONNECTOR ASSEMBLY, SEE DRAWING 10-507143-100/999.
3. INDICATED PARTS ARE SHOWN ASSEMBLED. THESE PARTS WILL BE SHIPPED UNASSEMBLED.
2. INDICATED DIMENSION IS TO POINT OF ELECTRICAL ENGAGEMENT.
1. FOR SUGGESTED HEATSINK/BOARD LAYOUT SEE SHEETS 9, 10, & 11.

NOTES:

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15. INDICATED GEOMETRIC TOLERANCE APPLIES BETWEEN THE BACK OF THE INSERT AND THE SCORE MARK ONLY. BETWEEN THE SCORE MARK AND THE CARRIER STRIP, THE POSITION OF THE LEADS MAY NOT VARY MORE THAN .006 INCHES FROM THE ACTUAL POSITION OF THE LEAD BELOW THE SCORE MARK.
14. A TOTAL OF 4 KEYS AND 2 RETAINING RINGS ARE REQUIRED TO COMPLETE THE ASSEMBLY. RETAINING RINGS ARE NOT REMOVABLE AND MUST BE REPLACED WHEN REKEYING CONNECTOR.
13. CONFIGURATION OF SOLDER TAILS VARIES WITH PACKAGE THICKNESS.
12. INDICATED SURFACE OF INSERTS BOTTOM ON INDICATED EDGE OF HEATSINK.
11. BLACK INK STAMP "BENDIX 77820 PART NUMBER AND DATE CODE ON INDICATED SURFACE PER 9-3856-5. DATE CODE PER 9-3895. CHARACTERS TO BE .062+/- .020 HIGH. ADDITIONAL INFORMATION MAYBE REQUESTED BY PURCHASE ORDER.
10. REAR SURFACE OF INSERTS ARE SEALED IN BRUSH CONTACT AREA ONLY. CONTACT ARE NOT REMOVABLE.

SIZE	PDSX NO.	DOCUMENT NO.	REV.
C	77820	10-507142-100/999	D
SCALE:	REF:	SHEET 8 OF 14	

4

3

2

1

10-507142-100/999

A

D

C

B

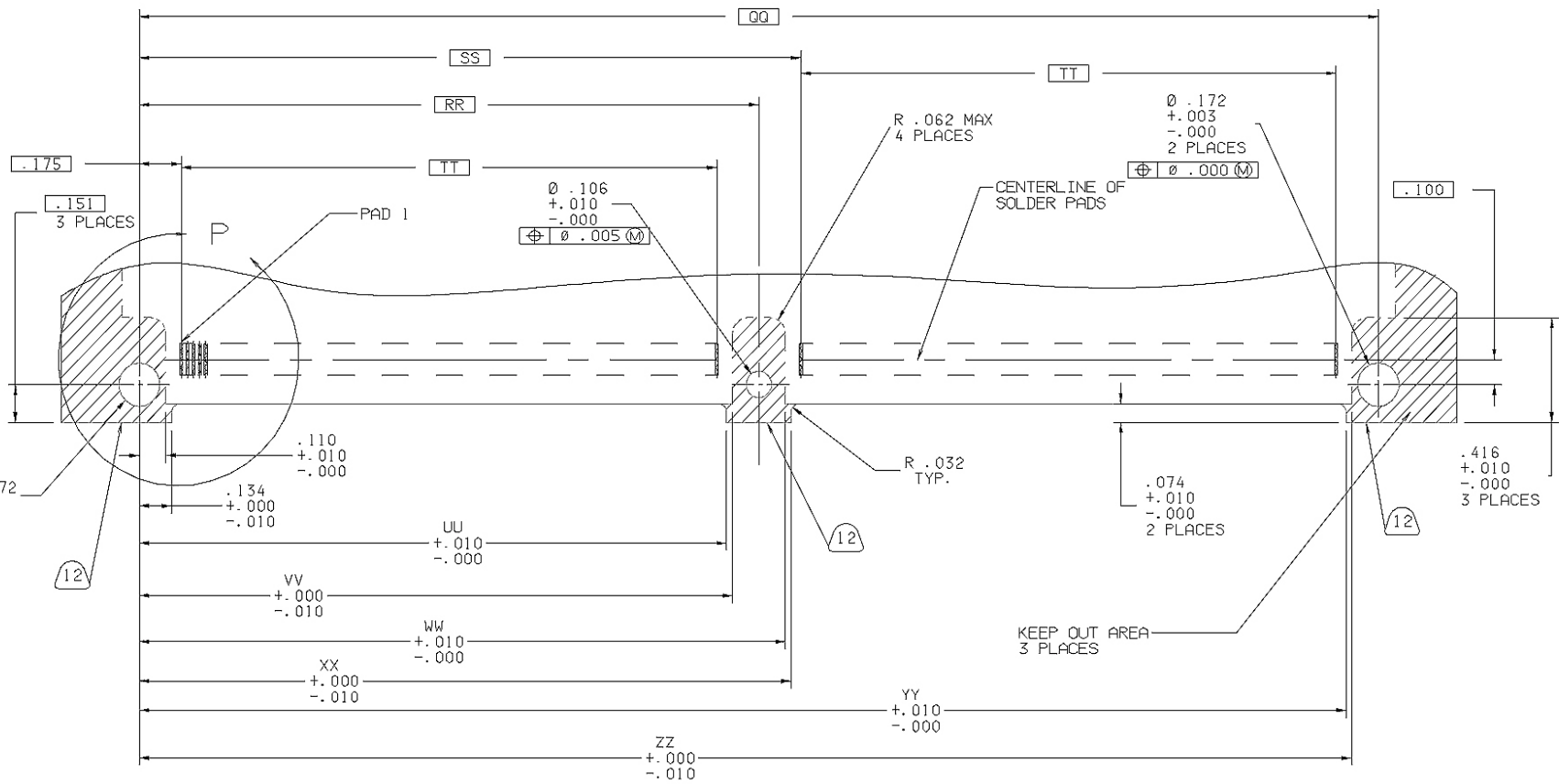
A

D

C

10-507142-100/999

A



CONNECTOR PART NUMBER	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ
10-507142-5XX	2.650	1.325	1.500	.975	1.191	1.215	1.435	1.459	3.766	3.790
10-507142-6XX	3.350	1.675	1.850	1.325	1.541	1.565	1.785	1.809	4.116	4.140
10-507142-7XX	4.450	2.225	2.400	1.875	2.091	2.115	2.335	2.359	4.316	4.340
10-507142-8XX	5.150	2.575	2.750	2.225	2.441	2.465	2.685	2.709	5.016	5.040

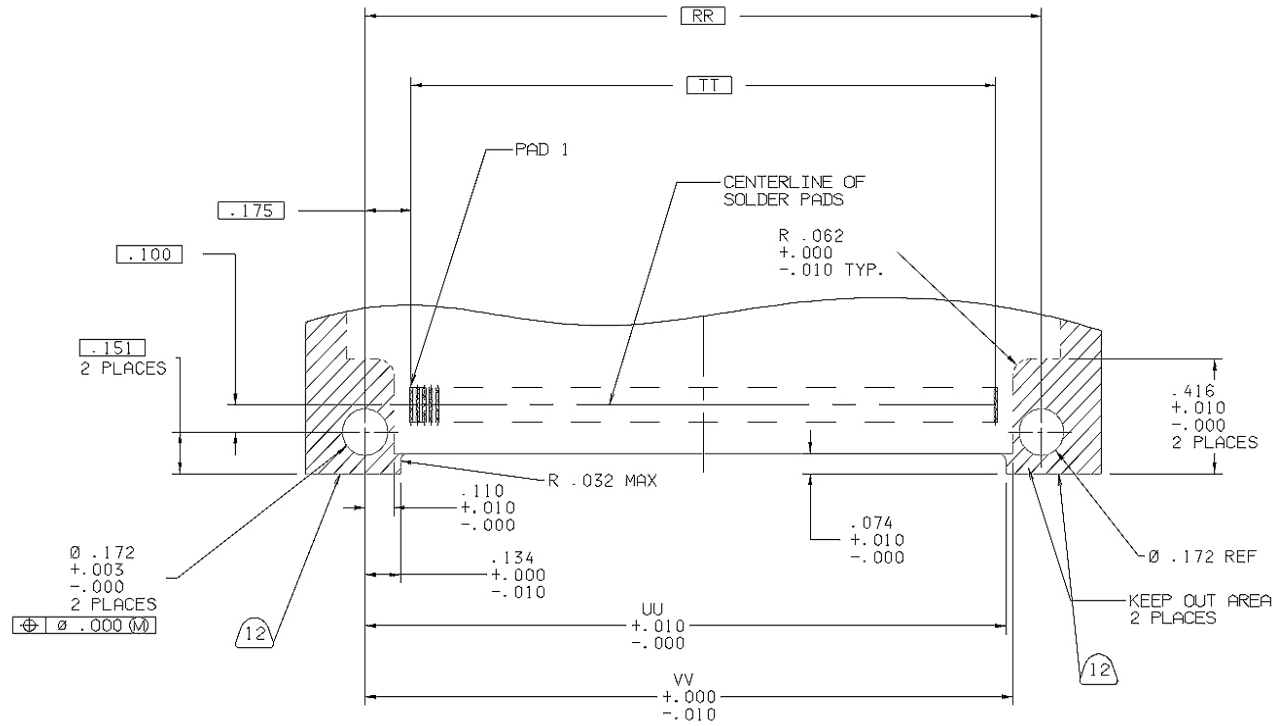
SEE SHEET 8
NOTES:

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HOWEVER, DOCUMENTS REFERENCED HEREON
MAY CONTAIN LIMITED RIGHTS DATA.

DOUBLE BAY CONNECTOR PC BOARD/HEATSINK
INTERFACE DIMENSIONS

SIZE	FIG. NO.	DOCUMENT NO.	REV.
C	77820	10-507142-100/999	D
SCALE:	REF:	SHEET 9 OF 14	

4 3 2 1



CONNECTOR PART NUMBER	RR	TT	UU	VV
10-507142-1XX	1.325	.975	1.191	1.215
10-507142-2XX	1.675	1.325	1.541	1.565
10-507142-3XX	2.225	1.875	2.091	2.115
10-507142-4XX	2.575	2.225	2.441	2.465

(SEE SHEET 9 FOR VIEW P)

SEE SHEET 8

NOTES:

THE USE OF THIS DOCUMENT IS UNLIMITED. HOWEVER, DOCUMENTS REFERENCED HEREON MAY CONTAIN LIMITED RIGHTS DATA.

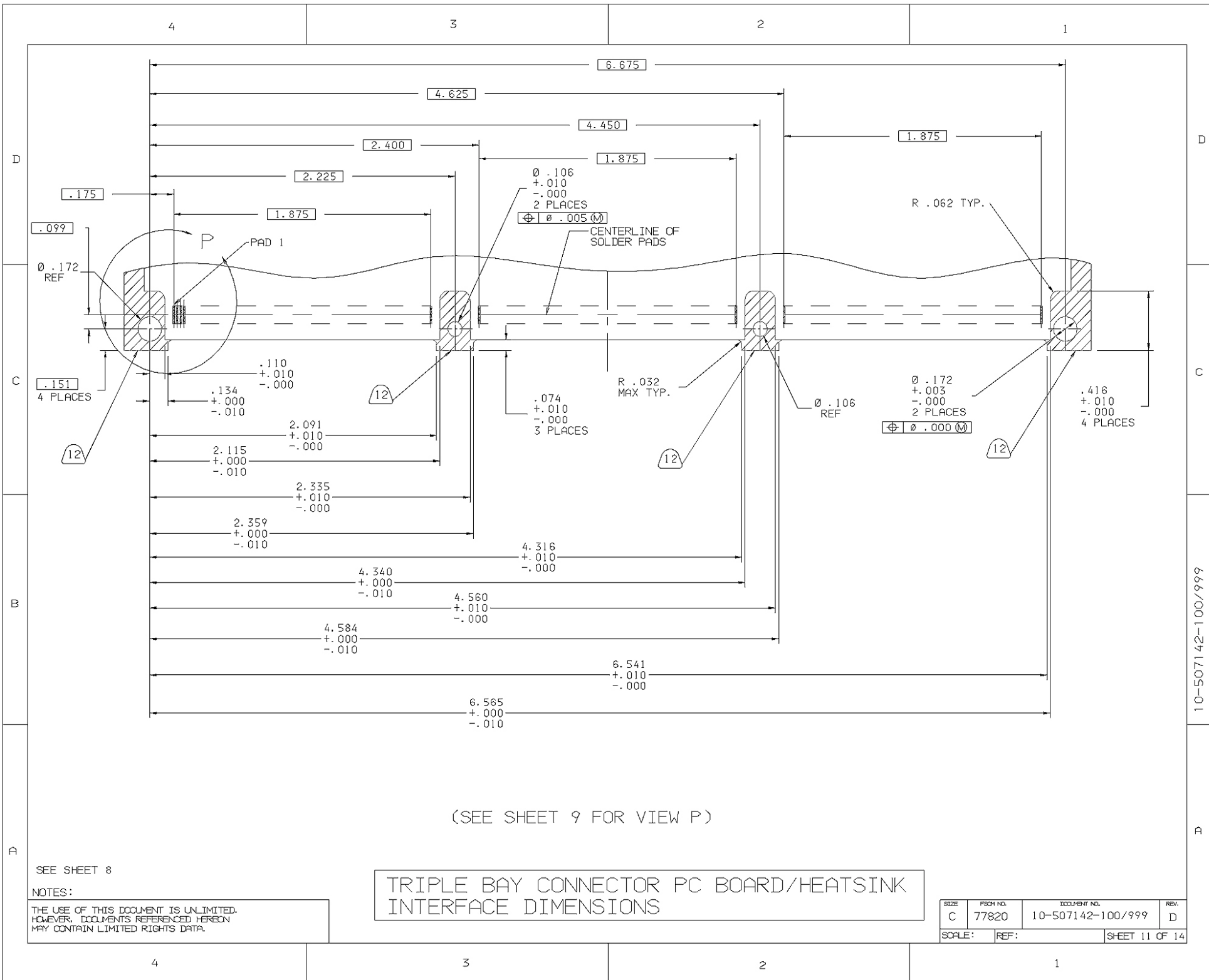
SINGLE BAY CONNECTOR PC BOARD/HEATSINK INTERFACE DIMENSIONS

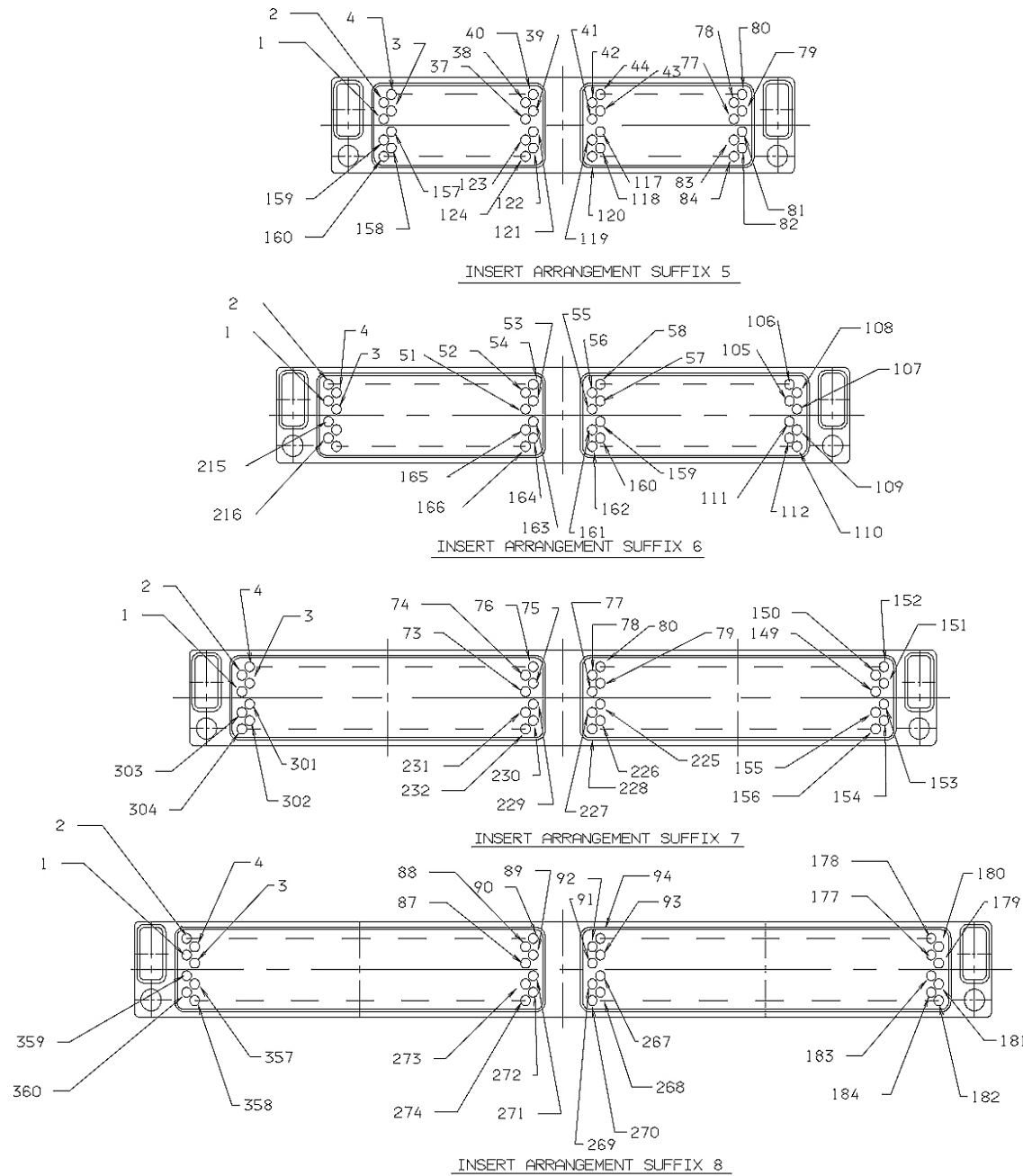
SIZE	PSCH NO.	DOCUMENT NO.	REV.
C	77820	10-507142-100/999	D
SCALE:	REF:	SHEET 10 OF 14	

4 3 2 1

10-507142-100/999

D





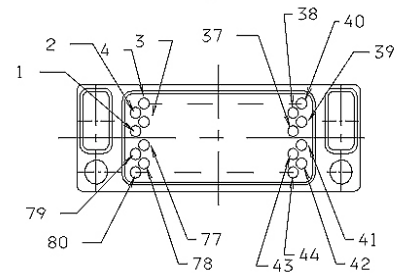
SEE SHEET 8

NOTES:

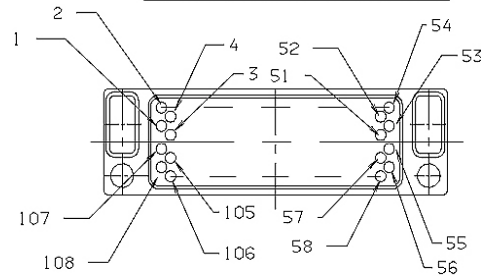
THE USE OF THIS DOCUMENT IS UNLIMITED.
HOWEVER, DOCUMENTS REFERENCED HEREON
MAY CONTAIN LIMITED RIGHTS DATA.

DOUBLE BAY CONNECTOR CONTACT
LOCATION ILLUSTRATION (SUFFIXS 5-8)

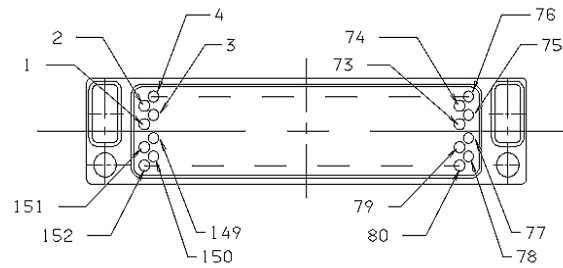
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SCALE:	REF:	SHEET 12 OF 14	



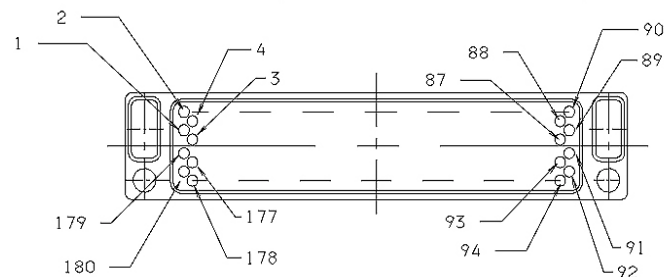
INSERT ARRANGEMENT SUFFIX 1



INSERT ARRANGEMENT SUFFIX 2



INSERT ARRANGEMENT SUFFIX 3



INSERT ARRANGEMENT SUFFIX 4

SEE SHEET 8

NOTES:

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SINGLE BAY CONNECTOR CONTACT
IDENTIFICATION ILLUSTRATION
(S U F F I X S 1 - 4)

SIZE	FORM NO.	DOCUMENT NO.	REV.
C	77820	10-507142-100/999	D
SCALE:	REF:	SHEET 13 OF 14	

10-507142-100/999

A

D

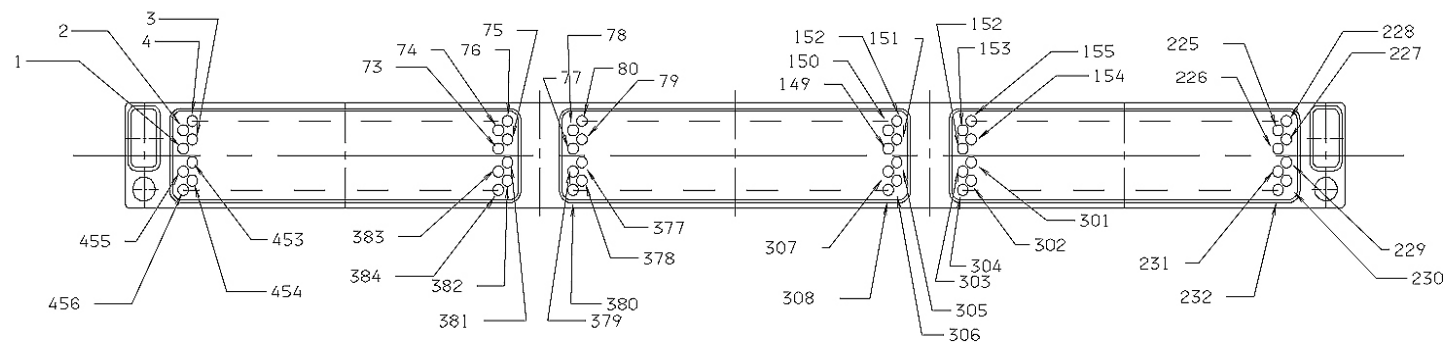
C

D

C

B

A



INSERT ARRANGEMENT SUFFIX 9

SEE SHEET 8

NOTES:

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TRIPLE BAY CONNECTOR CONTACT
LOCATION ILLUSTRATION
(SUFFIX 9)

SIZE	FORM NO.	DOCUMENT NO.	REV.
C	77820	10-507142-100/999	D
SCALE:		REF:	SHEET 14 OF 14

10-507142-100/999

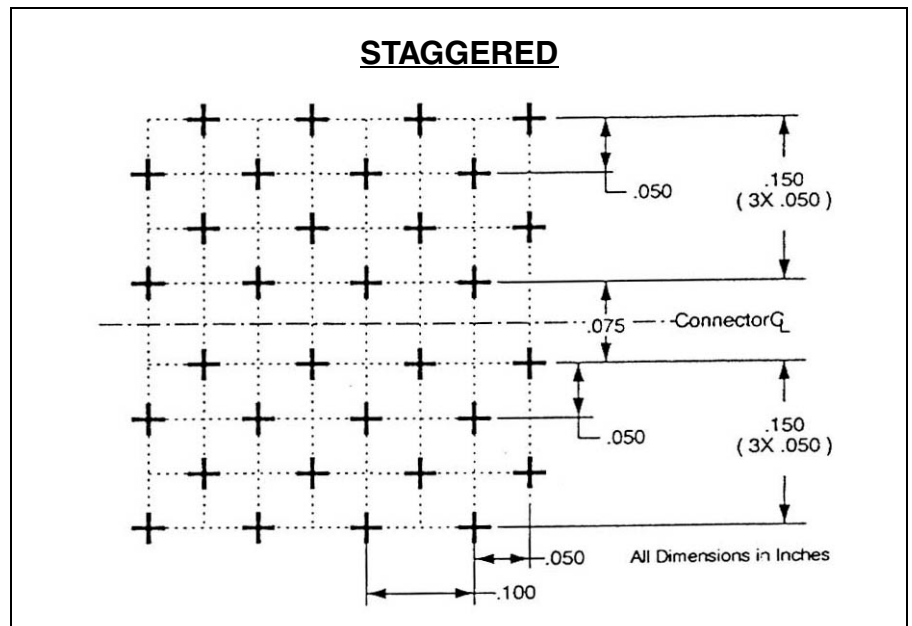
Staggered Grid Pattern (Digital)

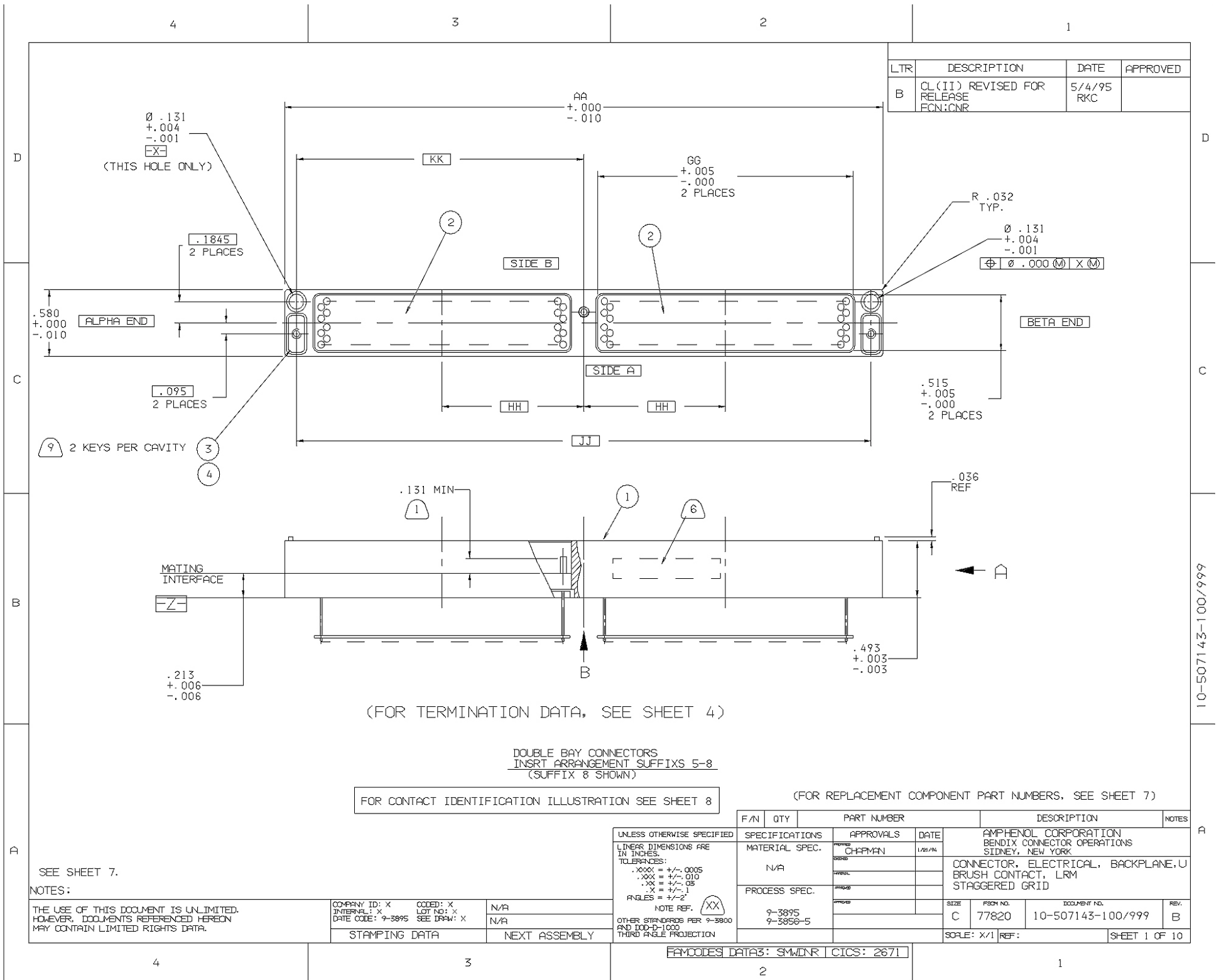
Drawing Package for Single, Double and 3-Bay **Backplane Connectors**

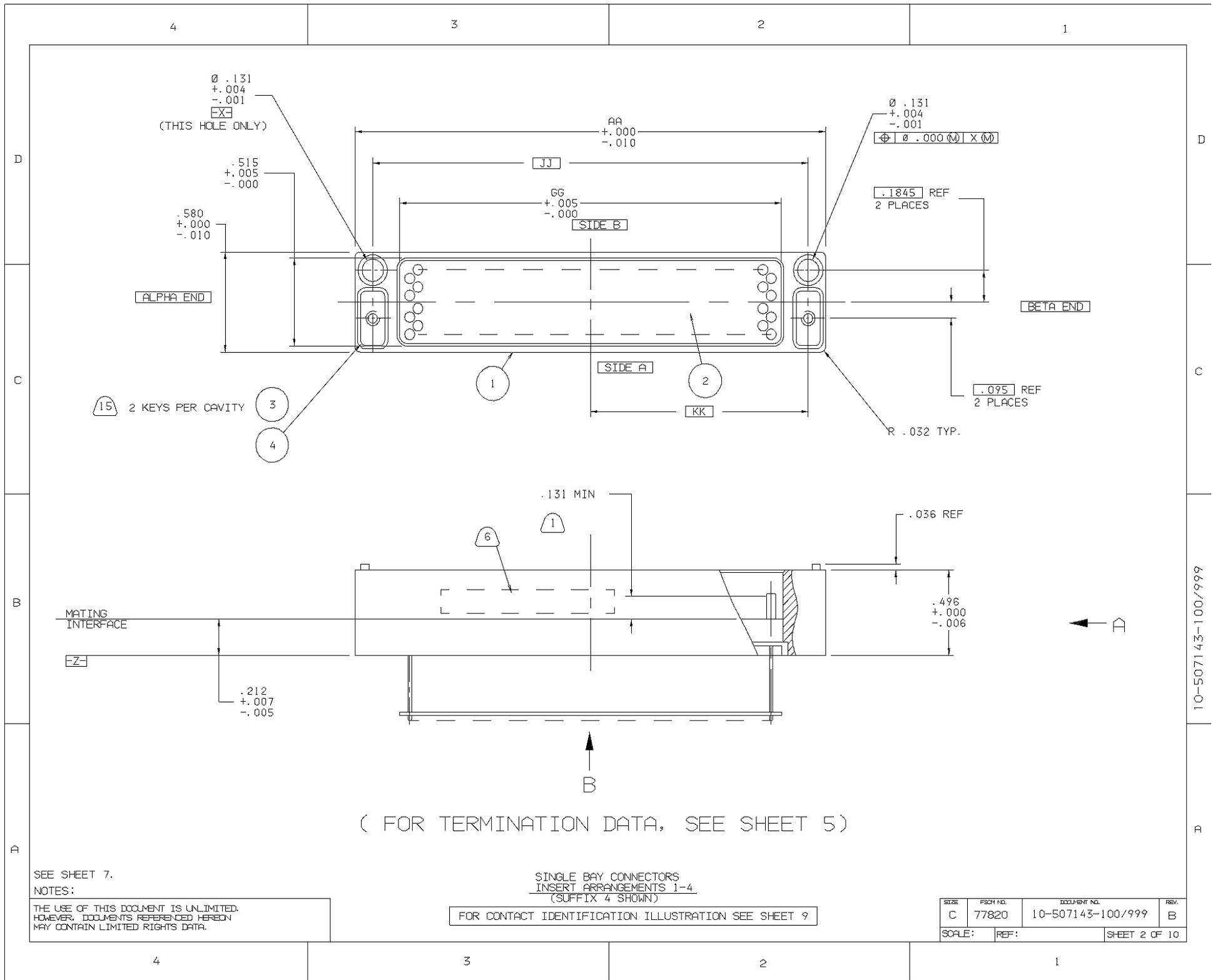
Including how to order part numbers.

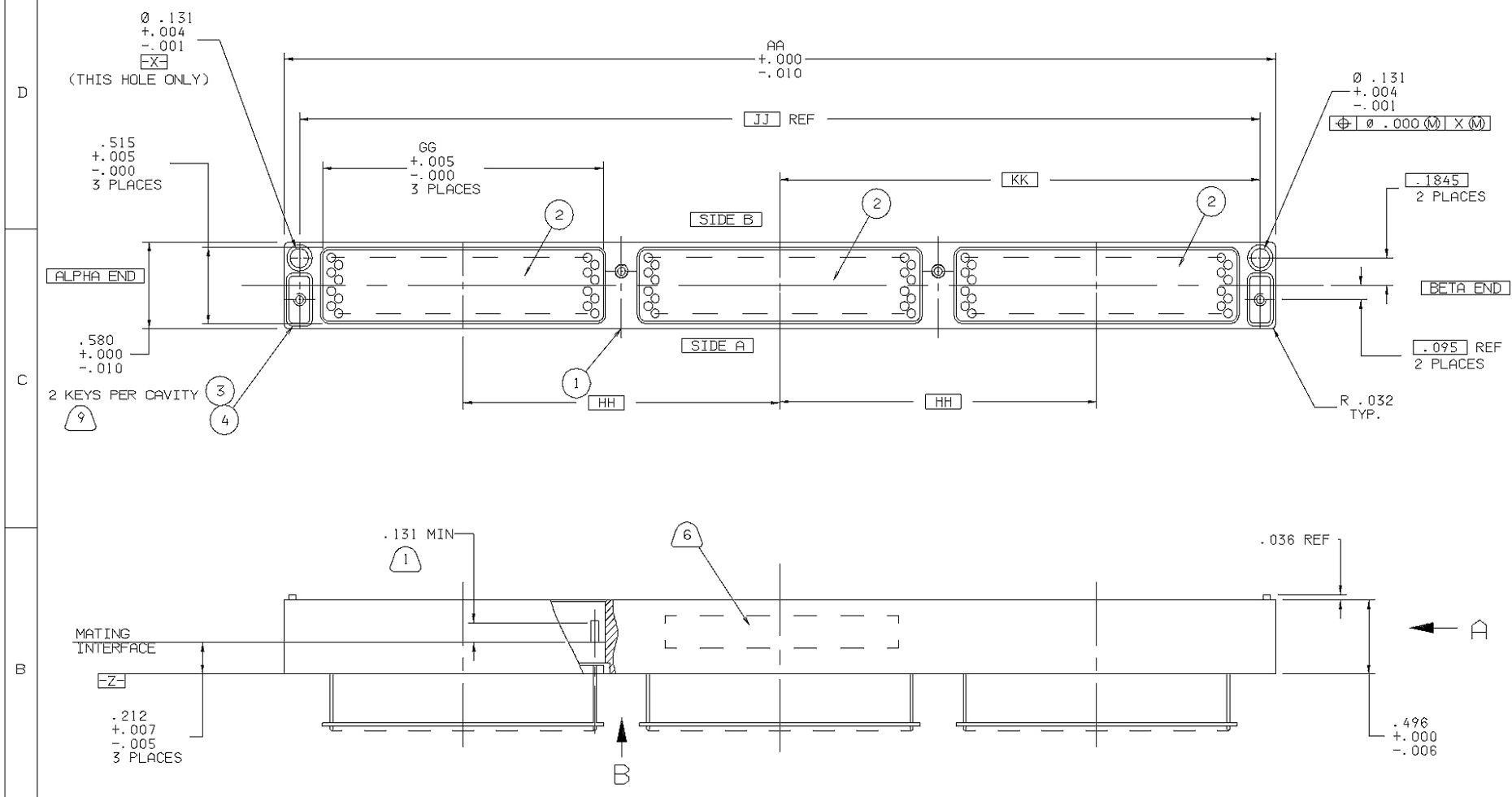
The LRM Staggered pattern allows for surface mount leads on a .025 inch center line.

The following diagram shows the contact pattern of the staggered grid LRM Connector, .100 inch spacing along the row with .050 inch between rows, offset .050 inch (mating face).









(FOR TERMINATION DATA, SHEET 6)

SEE SHEET 7

NOTES:

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TRIPLE BAY CONNECTORS
INSERT ARRANGEMENT SUFFIX 9

FOR CONTACT IDENTIFICATION ILLUSTRATION SEE SHEET 10

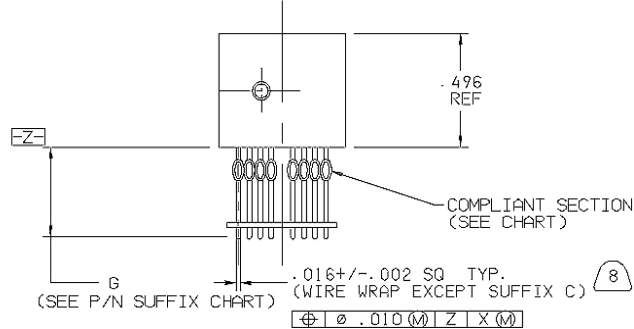
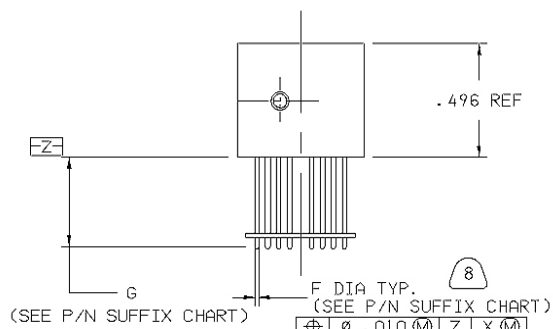
SIZE C	FORM NO. 77820	DOCUMENT NO. 10-507143-100/999	REV. B
SCALE:		REF:	SHEET 3 OF 10

D

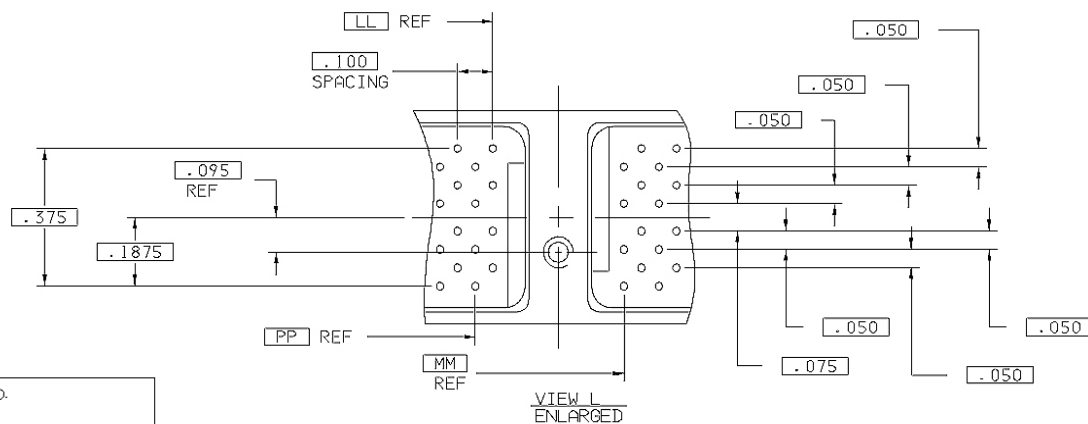
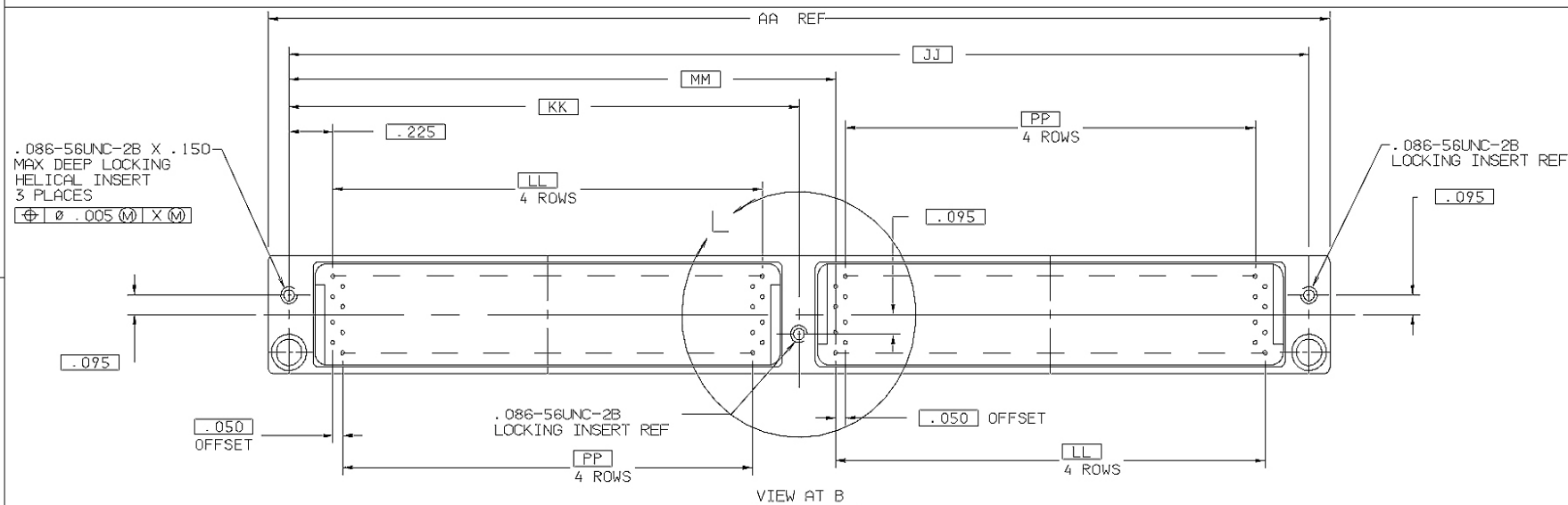
C

B

A

SUGGESTED PTH DIMENSIONS
FOR COMPLIANT CONTACTS

DRILLED HOLE	.0282-.0296
COPPER UNDERPLATING THICKNESS	.0010-.0020
TIN/LEAD PLATING THICKNESS	.0003-.0006
FINISHED PTH DIAMETER	.023-.027

DOUBLE BAY CONNECTORS
INSERT ARRANGEMENT SUFFIXS 5-8
(SUFFIX 8 SHOWN)

SEE SHEET 7

NOTES:

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SIZE C	PSCH NO. 77820	DOCUMENT NO. 10-507143-100/999	REV. B
SCALE:	REF:	SHEET 4 OF 10	

10-507143-100/999

D

.086-56UNC-2B X .150
MAX DEEP LOCKING
HELICAL INSERT 2 PLACES

$\varnothing .005 (M) \times (M)$

.225

.095
2 PLACES

.050 OFFSET

AA REF

JJ

LL
4 ROWS

.086-56UNC-2B
LOCKING INSERT REF

PP
4 ROWS

VIEW B

.225
REF

LL REF

.1875

.100 SPACING

.050

.050

.050

.095
REF

.375

.050

.050

.075

.050

VIEW L
ENLARGED

SINGLE BAY CONNECTORS
INSERT ARRANGEMENT SUFFIXS 1-4
(SUFFIX 4 SHOWN)

SEE SHEET 7

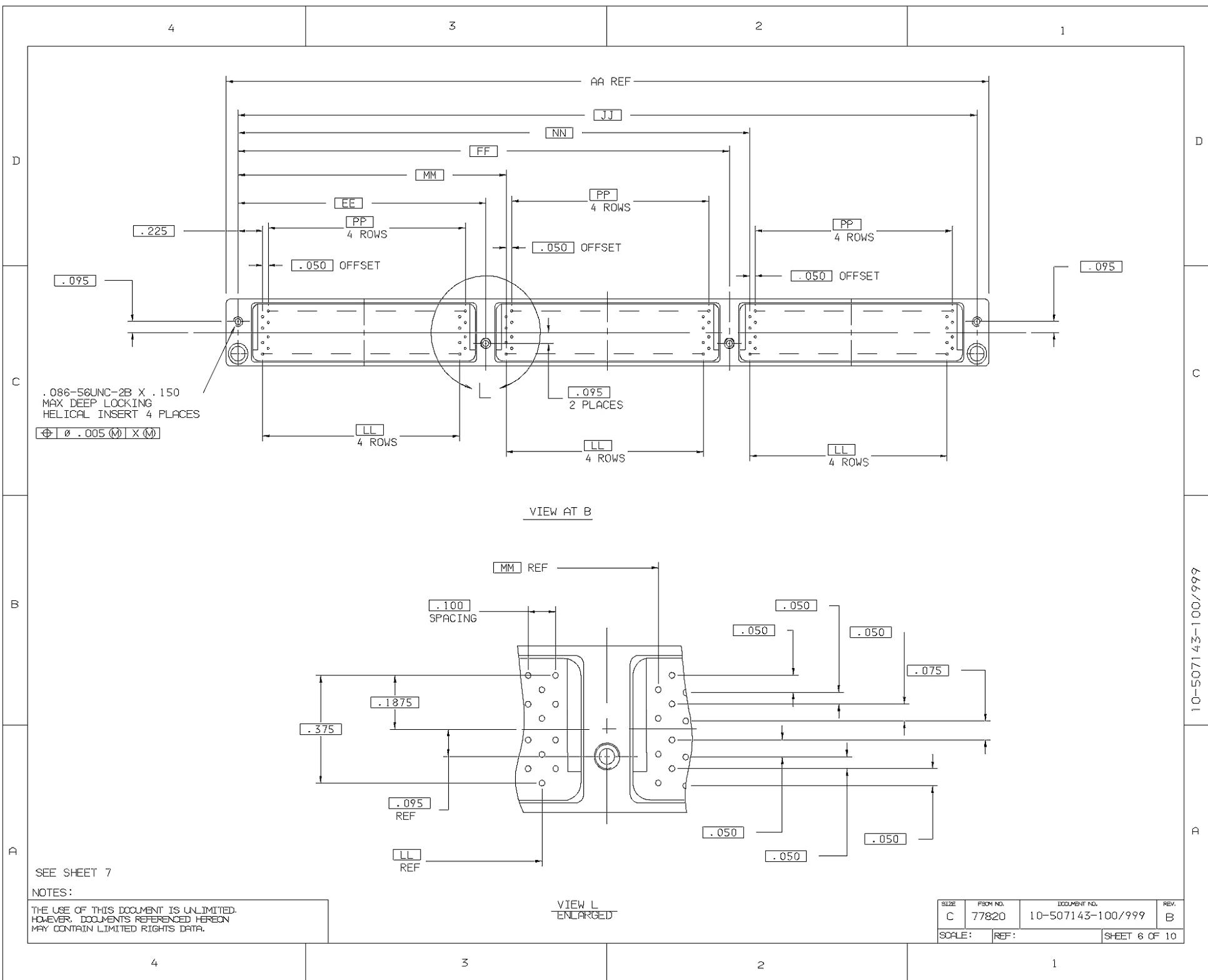
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HOWEVER, DOCUMENTS REFERENCED HEREON
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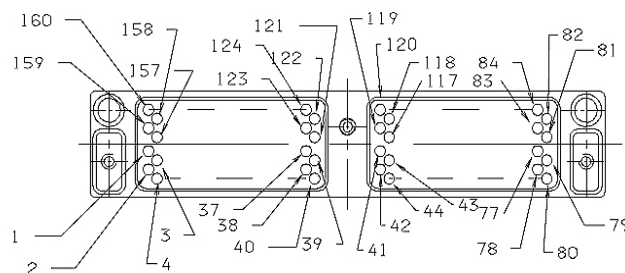
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SCALE:	REF:	SHEET 5 OF 10	

10-507143-100/999

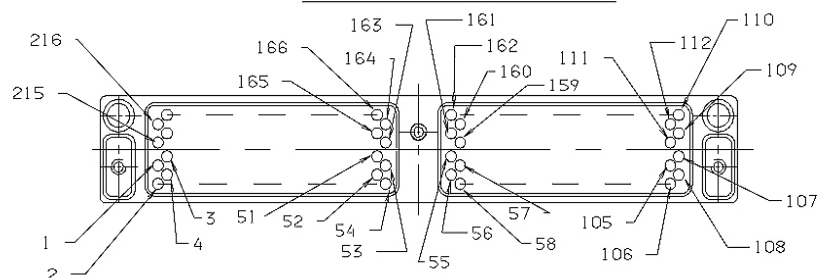
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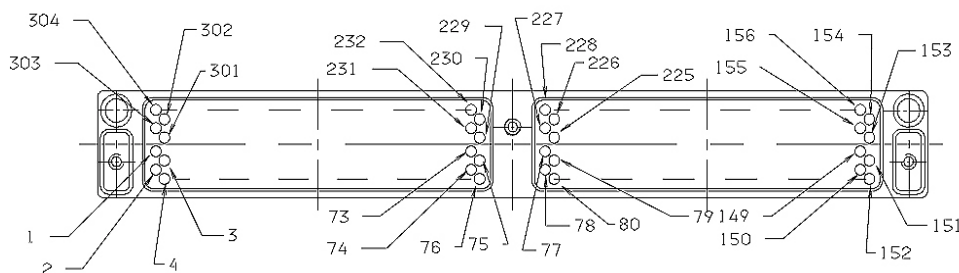
4	3	2	1																																																																																																																																												
CONNECTOR PART NUMBER (TO COMPLETE P/N SEE SUFFIX CHART) 10-507143-() () () INSERT ARRANGEMENT TERMINATION STYLE TERMINATION STICKOUT		REPLACEMENT COMPONENT PART NUMBERS <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>F/N</th> <th>QTY</th> <th>PART NUMBER</th> <th>DESCRIPTION</th> <th>NOTES</th> </tr> </thead> <tbody> <tr><td>1</td><td>1</td><td>SEE COLUMN</td><td>SHELL ASSEMBLY</td><td></td></tr> <tr><td>2</td><td>AR</td><td>SEE COLUMN</td><td>INSERT ASSEMBLY</td><td></td></tr> <tr><td>3</td><td>4</td><td>10-507903-3</td><td>POLARIZATION KEY</td><td>2</td></tr> <tr><td>4</td><td>2</td><td>10-507929-1</td><td>RETAINING RING</td><td>2</td></tr> <tr><td>5</td><td>AR</td><td>10-507931-1</td><td>REPLACEMENT KEY KIT (100 PCS EACH F/N 3 & 4)</td><td>10</td></tr> <tr><td>6</td><td>AR</td><td>10-507818-12</td><td>COMPLIANT CONTACT (NO WRAP)</td><td>10</td></tr> <tr><td>7</td><td>AR</td><td>10-507818-22</td><td>COMPLIANT CONTACT (1 WRAP)</td><td>10</td></tr> <tr><td>8</td><td>AR</td><td>10-507818-32</td><td>COMPLIANT CONTACT (2 WRAP)</td><td>10</td></tr> <tr><td>9</td><td>AR</td><td>10-507818-42</td><td>COMPLIANT CONTACT (3 WRAP)</td><td>10</td></tr> </tbody> </table>		F/N	QTY	PART NUMBER	DESCRIPTION	NOTES	1	1	SEE COLUMN	SHELL ASSEMBLY		2	AR	SEE COLUMN	INSERT ASSEMBLY		3	4	10-507903-3	POLARIZATION KEY	2	4	2	10-507929-1	RETAINING RING	2	5	AR	10-507931-1	REPLACEMENT KEY KIT (100 PCS EACH F/N 3 & 4)	10	6	AR	10-507818-12	COMPLIANT CONTACT (NO WRAP)	10	7	AR	10-507818-22	COMPLIANT CONTACT (1 WRAP)	10	8	AR	10-507818-32	COMPLIANT CONTACT (2 WRAP)	10	9	AR	10-507818-42	COMPLIANT CONTACT (3 WRAP)	10																																																																																										
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5. BRUSH CONTACTS WITH PCB TAIL TERMINATIONS ARE NOT REMOVABLE. THE REAR OF THE INSERT IS SEALED. COMPLAINT CONTACTS ARE REMOVABLE FROM THE FRONT. 4. CONTACT TERMINATION FINISH: PCB TERMINATION FINISH IS 60/40 TIN/LEAD SOLDER DIPPED. COMPLIANT TERMINATION FINISH IS GOLD PLATE PER MIL-G-45204, TYPE II, .000050 MIN THK OVER .000050 MIN THK NICKEL. 3. FOR MATING MODULE CONNECTOR ASSEMBLY, SEE DRAWING 10-507142-100/999. 2. INDICATED PARTS ARE SHOWN ASSEMBLED. THESE PARTS WILL BE SHIPPED UNASSEMBLED. 1. INDICATED DIMENSIONB IS TO POINT OF ELECTRICAL ENGAGEMENT. NOTES: THE USE OF THIS DOCUMENT IS UNLIMITED. HOWEVER, DOCUMENTS REFERENCED HEREON MAY CONTAIN LIMITED RIGHTS DATA.																																																																																																																																															
10. INDICATED ITEMS ARE REPAIR OR REPLACEMENT COMPONENT PART NUMBERS. 9. A TOTAL OF 4 KEYS AND 2 RETAINING RINGS ARE REQUIRED TO COMPLETE THE ASSEMBLY. RETAINING RINGS ARE NOT REUSABLE AND MUST BE REPLACED WHEN REKEYING CONNECTOR. 8. COMPLIANT TERMINATION WRAP NUMBERS ASSUME A .125 INCH THICK BACKPLANE. 7. INDICATED POSITIONAL TOLERANCE ID FOR PCB TERMINATION ONLY. THIS TOLERANCE APPLIES WHEN BOTTOM OF INDICATED ORGANIZER IS WITHIN .020 INCH OF TAIL END. 6. BLACK INK STAMP "BENDIX" 77820, PART NUMBER AND DATE CODE ON INDICATED SURFACE PER 9-3856-5. DATE CODE PER 9-3895. CHARACTERS TO BE .062+/- .020 HIGH. ADDITIONAL INFORMATION MAYBE REQUESTED BY PURCHASE ORDER.																																																																																																																																															
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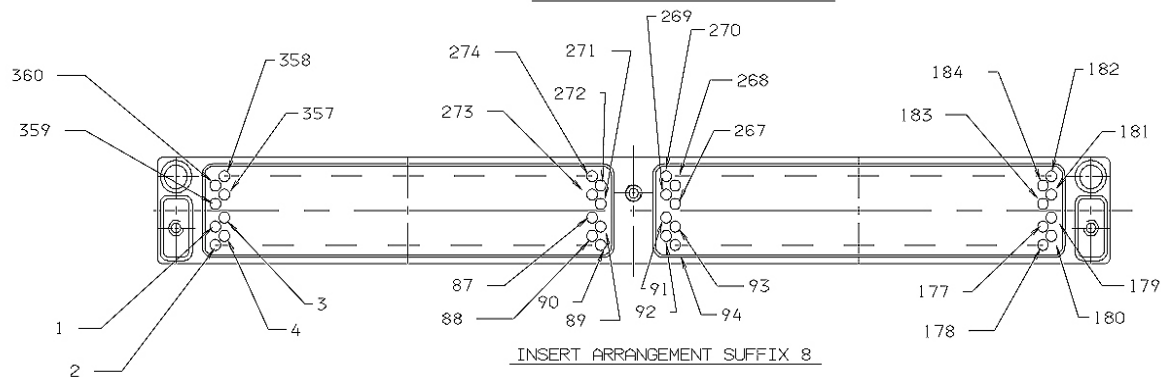
INSERT ARRANGEMENT SUFFIX 5



INSERT ARRANGEMENT SUFFIX 6



INSERT ARRANGEMENT SUFFIX 7



INSERT ARRANGEMENT SUFFIX 8

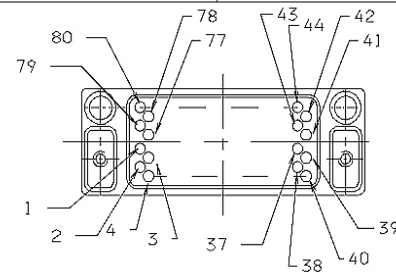
SEE SHEET 7

NOTES:

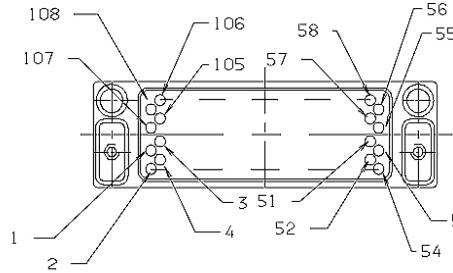
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DOUBLE BAY CONNECTOR CONTACT
LOCATION ILLUSTRATION (SUFFIXS 5-8)

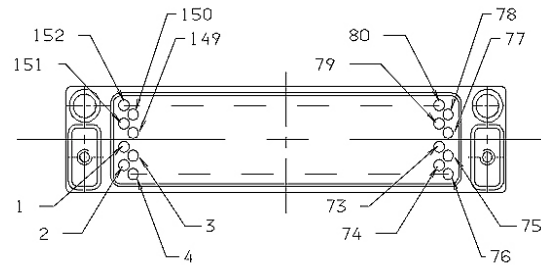
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C	77820	10-507143-100/999	B
SCALE:	REF:	SHEET 8 OF 10	



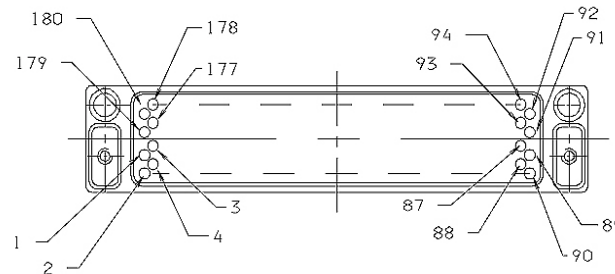
INSERT ARRANGEMENT SUFFIX 1



INSERT ARRANGEMENT SUFFIX 2



INSERT ARRANGEMENT SUFFIX 3



INSERT ARRANGEMENT SUFFIX 4

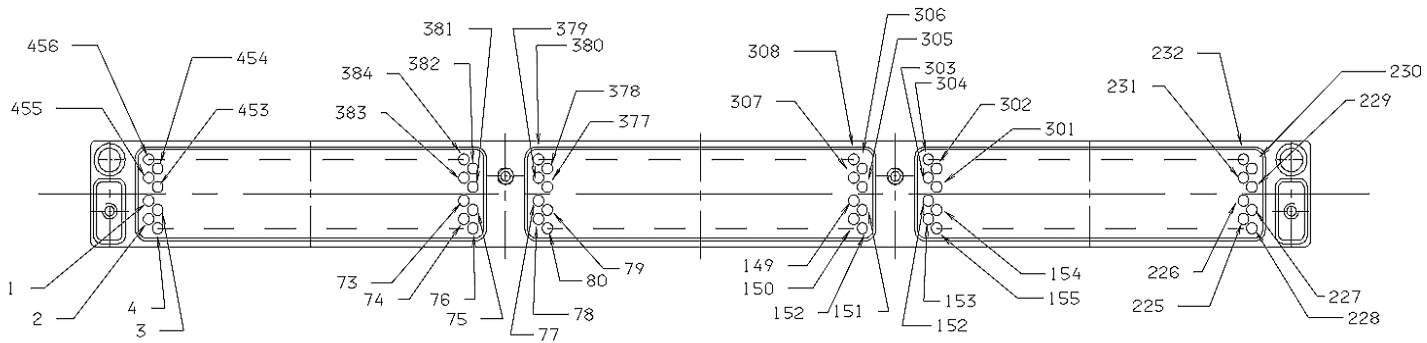
SEE SHEET 7

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SINGLE BAY CONNECTOR CONTACT
IDENTIFICATION ILLUSTRATION
(S U F F I X S 1 - 4)

SIZE	PSOM NO.	DOCUMENT NO.	REV.
C	77820	10-507143-100/999	B
SCALE:		REF:	SHEET 9 OF 10



INSERT ARRANGEMENT SUFFIX 9

SEE SHEET 7

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TRIPLE BAY CONNECTOR CONTACT
LOCATION ILLUSTRATION
(SUFFIX 9)

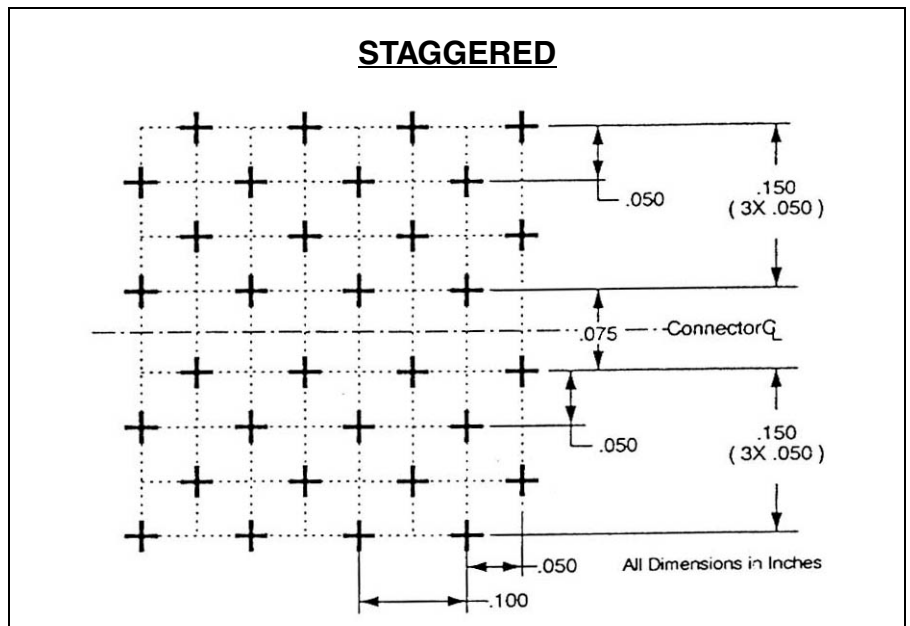
SIZE	PCN NO.	DOCUMENT NO.	REV.
C	77820	10-507143-100/999	B
SCALE:		REF:	SHEET 10 OF 10

Staggered Grid Pattern Hybrid Insert Illustrations

Including how to order part numbers.

The LRM Staggered pattern allows for surface mount leads on a .025 inch center line.

The following diagram shows the contact pattern of the staggered grid LRM Connector, .100 inch spacing along the row with .050 inch between rows, offset .050 inch (mating face).



Staggered Grid, 360 Contacts

LRM Connectors

typical arrangements, how to order

SINGLE BAY HYBRID ARRANGEMENTS		
MODULE	BACKPLANE	
10-507184-1**	10-507186-1**	
10-507184-2**	10-507186-2**	
10-507184-3**	10-507186-3**	
10-507184-4**	10-507186-4**	
10-507184-5**	10-507186-5**	
10-507184-6**	10-507186-6**	
10-507184-7**	10-507186-7**	
Replace ** in desired part number with <u>heat sink and total board package thickness</u> indicators from MODULE suffix chart (pg. 15). Replace ** in desired part number with <u>termination style and termination stick-out</u> indicators from BACKPLANE suffix chart (pg. 15).		KEY ROC = "Reliable Optical Connector" (Not supplied with connector. Available from AT&T) B³ = Digital contacts (i.e. standard brush) Size 16 cavities will accept: Fiber optic contacts M29504/1, /2, /14 & /15, or shielded contacts M39029/79 & /80. (Note: these contacts are not supplied with connector and are available from Hughes). #8 & #12 Blind mate coax available from Amphenol - purchase separately 270 VDC power insert supplied with 2 size 22D MIL-C-38999, Series II power contacts.

Staggered Grid, 360 Contacts

LRM Connectors

typical arrangements, how to order

DOUBLE BAY HYBRID ARRANGEMENTS		
MODULE	BACKPLANE	
10-507185-A**	10-507187-A**	
10-507185-B**	10-507187-B**	
10-507185-C**	10-507187-C**	
10-507185-D**	10-507187-D**	
10-507185-E**	10-507187-E**	
10-507185-F**	10-507187-F**	
10-507185-G**	10-507187-G**	
Replace ** in desired part number with <u>heat sink and total board package thickness</u> indicators from MODULE suffix chart (pg. 47). Replace ** in desired part number with <u>termination style and termination stick-out</u> indicators from BACKPLANE suffix chart (pg. 47).		KEY ROC = "Reliable Optical Connector" (Not supplied with connector. Available from AT&T) B³ = Digital contacts (i.e. standard brush) Size 16 cavities will accept: Fiber optic contacts M29504/1, /2, /14 & /15, or shielded contacts M39029/79 & /80. (Note: these contacts are not supplied with connector and are available from Hughes). #8 & #12 Blind mate coax available from Amphenol - purchase separately 270 VDC power insert supplied with 2 size 22D MIL-C-38999, Series II power contacts.

Staggered Grid, 360 Contacts

LRM Connectors

typical arrangements, how to order

DOUBLE BAY HYBRID ARRANGEMENTS, CONT.		
MODULE	BACKPLANE	
10-507185-H**	10-507187-H**	
10-507185-J**	10-507187-J**	
10-507185-K**	10-507187-K**	
10-507185-L**	10-507187-L**	
Replace ** in desired part number with <u>heat sink and total board package thickness</u> indicators from MODULE suffix chart (pg. 47). Replace ** in desired part number with <u>termination style and termination stick-out</u> indicators from BACKPLANE suffix chart (pg. 47).		KEY ROC = "Reliable Optical Connector" (Not supplied with connector. Available from AT&T) B³ = Digital contacts (i.e. standard brush) Size 16 cavities will accept: Fiber optic contacts M29504/1, /2, /14 & /15, or shielded contacts M39029/79 & /80. (Note: these contacts are not supplied with connector and are available from Hughes). #8 & #12 Blind mate coax available from Amphenol - purchase separately 270 VDC power insert supplied with 2 size 22D MIL-C-38999, Series II power contacts.

LRM Hybrid Connectors

part number suffixes

The following charts identify the part number suffixes to be used when ordering Hybrid LRM Connectors. (Refer to preceding pages of Hybrid Arrangements and also to the Staggered Grid drawing packages in this document).

HYBRID MODULE SUFFIX CHARTS

HEATSINK THICKNESS

Suffix	Description
1	.125 ± .005
2	.100 ± .005
3	.075 ± .005
4	.062 ± .005
5	.035 ± .005

TOTAL BOARD PACKAGE THICKNESS

Suffix	Description
1	Surface Mount / .090 – .130 Package
2	Surface Mount / .130 – .190 Package
3	Surface Mount / .190 – .250 Package
4	Surface Mount / .060 – .100 Package
5	Surface Mount / .100 – .160 Package
6	Surface Mount / .160 – .220 Package

HYBRID BACKPLANE SUFFIX CHARTS

TERMINATION STYLE

Suffix	Description - Dimension "F" (See Staggered Grid Drawings)
1	.021 ± .002 Dia. PCB Tail
2	.016 ± .002 Dia. PCB Tail
3	.012 ± .002 Dia. PCB Tail
4	N/A
5	Compliant

TERMINATION STICKOUT

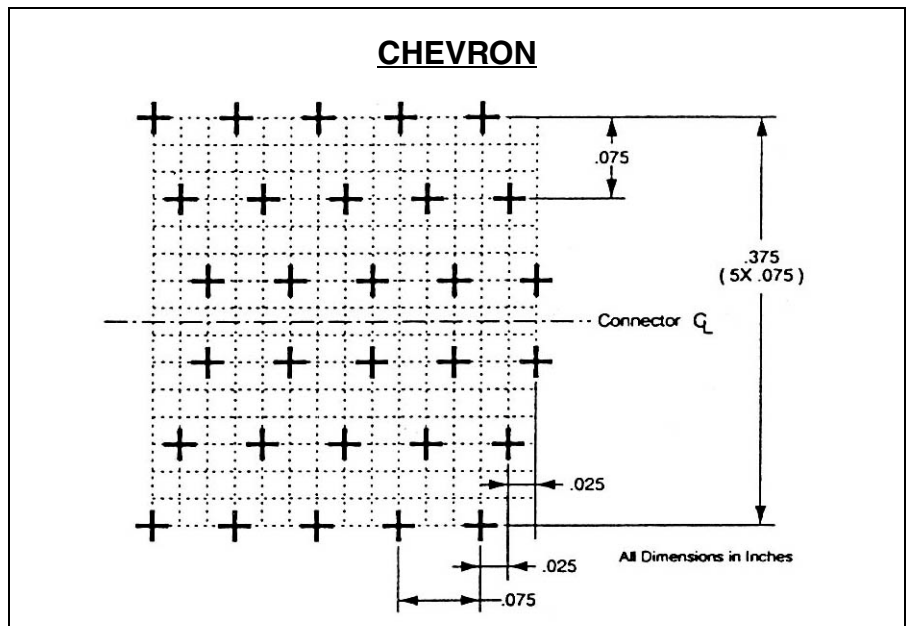
Suffix	Description - Dimension "G" (See Staggered Grid Drawings)
1	.150 ± .020 (PCB)
2	.200 ± .020 (PCB)
3	.250 ± .020 (PCB)
4	.300 ± .020 (PCB)
5	.350 ± .020 (PCB)
6	.400 ± .020 (PCB)
7	.185 ± .020 (PCB)
8	.450 ± .020 (PCB)
9	.500 ± .020 (PCB)
C	.157 ± .020 (Compliant, No Wrap)
D	.217 ± .020 (Compliant, 1 Wrap)
E	.317 ± .020 (Compliant, 2 Wrap)
F	.417 ± .020 (Compliant, 3 Wrap)

Chevron Pattern LRM Connectors

Insert arrangements

The LRM Chevron pattern allows for surface mount leads on a .025 inch center line.

The following diagram shows the contact pattern of the chevron grid LRM Connector, .075 inch spacing along the row with .075 inch between rows, offset .025 inch (mating face).



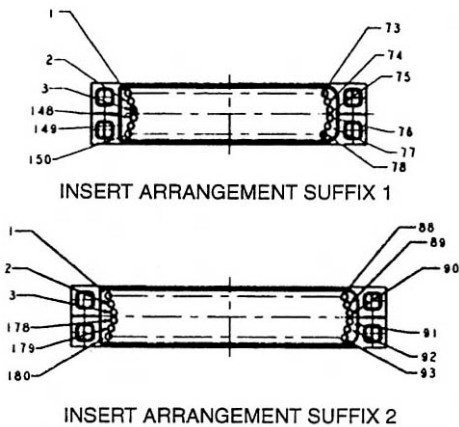
Chevron Grid LRM Connectors

insert arrangements

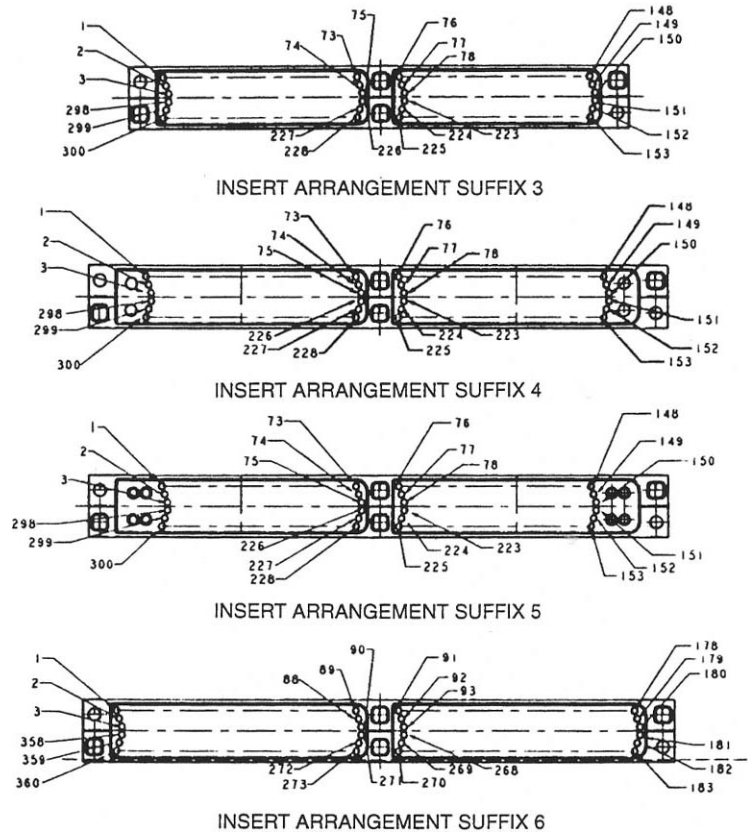
TO ORDER CHEVRON GRID LRM CONNECTORS:

Consult Amphenol, Sidney, NY for availability and part number ordering procedure.

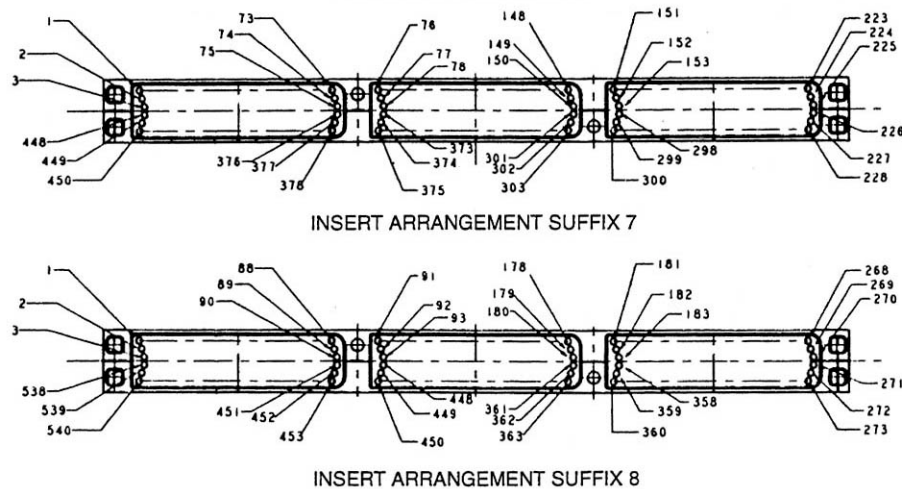
Single Bay Connector Contact Identification



Double Bay Connector Contact Identification



Triple Bay Connector Contact Identification



Front of module connector shown. Backplane will be mirror image.