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DWG. NO. 1200009 SH 1 REV. A

1

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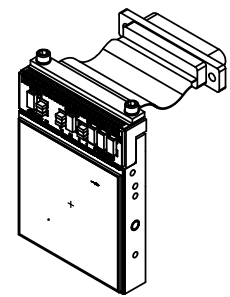
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ITAR**

REVISIONS						
ZONE	REV	DESCRIPTION	DATE	DRAWN	CHECK	APPR
-	A	INITIAL RELEASE	2005-07-11	DD	JG	JF

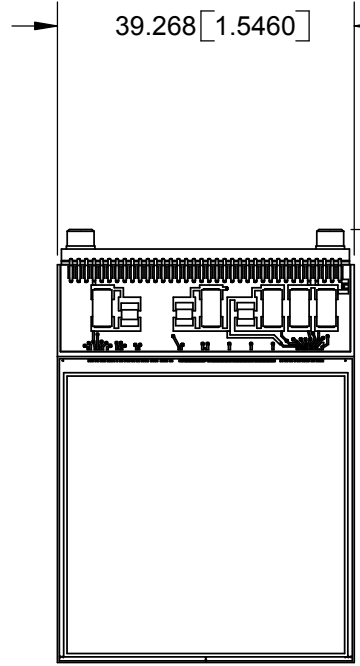
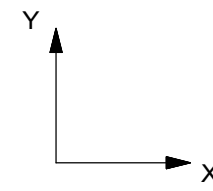
NOTES:

1. APPLICABLE STANDARDS / SPECIFICATIONS
ASME Y14.100 - 2000, ENGINEERING DRAWING PRACTICES.
ASME Y14.5M - 1994, DIMENSIONS AND TOLERANCES.
2. DIMENSIONS ARE IN MILLIMETERS.
DIMENSIONS INSIDE SQUARE BRACKETS [] ARE IN INCHES.
DIMENSIONS INSIDE PARENTHESES () ARE REFERENCE DIMENSIONS.
ENCIRCLED DIMENSIONS ARE INSPECTION DIMENSIONS.
3. ALL PRINTED COPIES ARE UNCONTROLLED.
4. THE HYBRID IS CENTERED IN THE 'X' DIRECTION AND IS SHIFTED -0.004 [0.1016] AWAY FROM THE MOLY LIP IN THE 'Y' DIRECTION.
5. ELECTROSTATIC DISCHARGE CONTROL (ESD) PROGRAM FOR PROTECTION OF ELECTRICAL AND ELECTRONIC PARTS, ASSEMBLIES AND EQUIPMENT SHALL BE IN ACCORDANCE WITH RSC SPEC QAP-0043.
6. DIMENSION A CONSISTS OF THE AR-COATING, SUBSTRATE REMOVED HgCdTe DETECTOR, INDIUM BUMPS, ROIC, BCS ASSEMBLY AND EPOXY BONDLINE TO THE MOLY BASE.

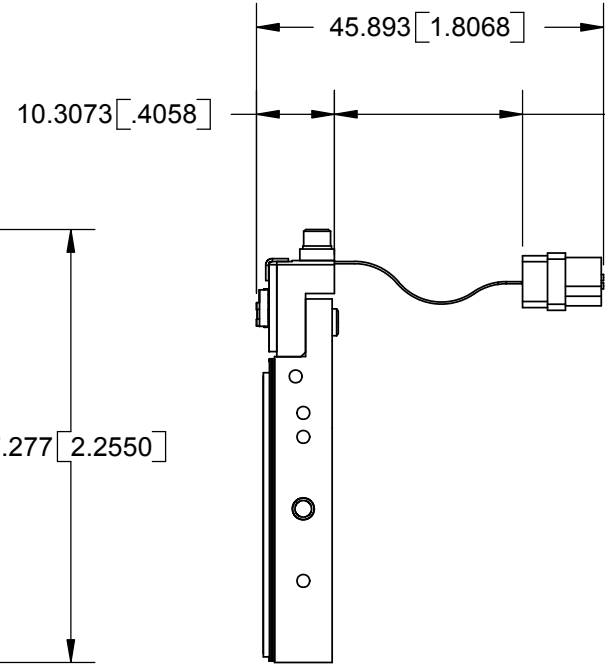
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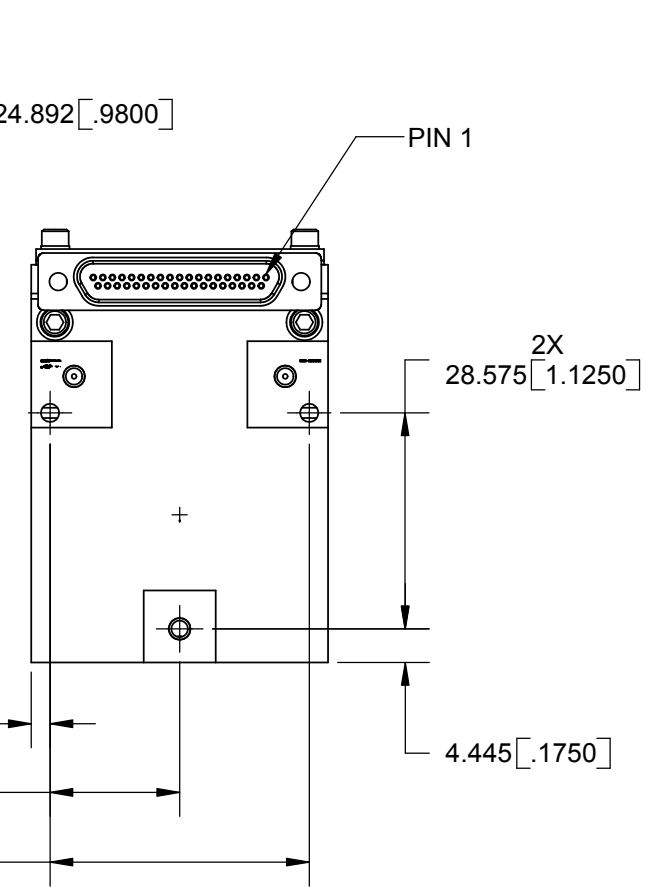
ISOMETRIC VIEW



TOP VIEW



SIDE VIEW



BOTTOM VIEW

RELEASED
Date **08/11/05**

CAUTION
CONTAINS PARTS AND ASSEMBLIES SUSCEPTIBLE TO DAMAGE BY ELECTROSTATIC DISCHARGE (ESD)

A	A	A	A	A	REVISION	REV STATUS OF SHEETS
5	4	3	2	1	SHEET	
-	-	-	A	A	REVISION	REV STATUS OF SHEETS
10	9	8	7	6	SHEET	

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METRIC		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN mm		CONTRACT NO. 73209		Rockwell Scientific		1049 Camino Dos Rios Thousand Oaks, CA. 91360 Phone 805.373.4545 Fax 805.373.4775 www.rockwellscientific.com	
THIRD ANGLE PROJECTION		TOLERANCES ARE:		APPROVALS		DATE		TITLE: INTERFACE CONTROL DWG, HYBRID, SCA, 2K X 2K, SWIR/MWIR, JWST NIRCcam	
		FRACTIONS .XX ±.25 ±.5 DECIMALS .XXX ±.050 ANGLES ±5		DRAWN D DOWTHWAITE		2005-07-21		SIZE B	
DO NOT SCALE DRAWING		TREATMENT --		CHECKED J GARNETT		2005-07-28		CAGE CODE 2D609	
FINISH --		SIMILAR TO --		PROJECT ENGR. J GARNETT		2005-07-28		DWG. NO. 1200009	
NEXT ASSY USED ON		3D CAD FILENAME: 1250009.SLDASM 2D CAD FILENAME: 1200009.SLDDRW		PROGRAM MGR J GARNETT		2005-07-28		REV. A	
APPLICATION		JWST		QUALITY D PAULSON		2005-08-04		SCALE: 1:1	
								2005-08-11	
								SHEET 1 OF 7	

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DWG. NO. 1200009

SH 2 REV. A

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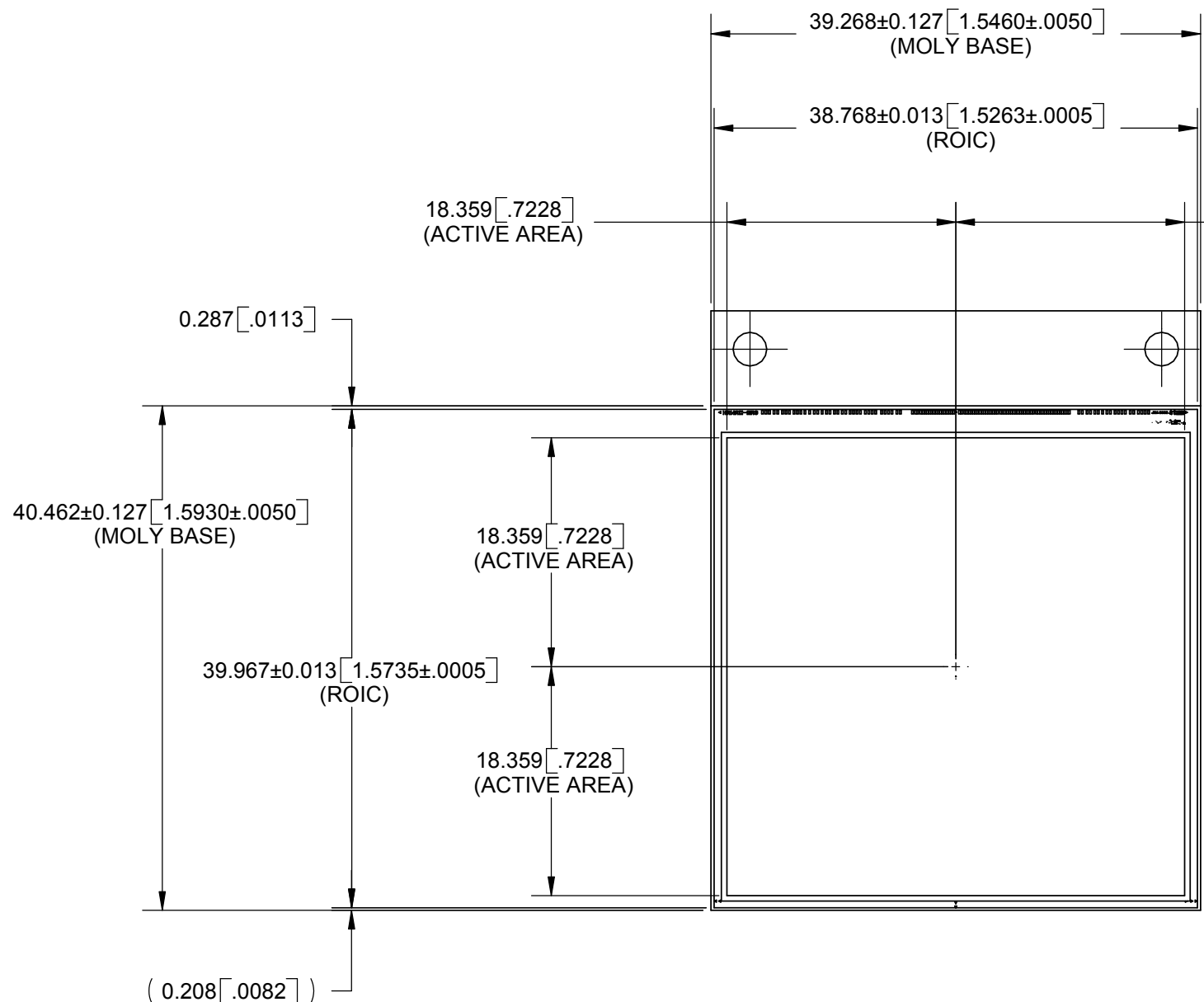
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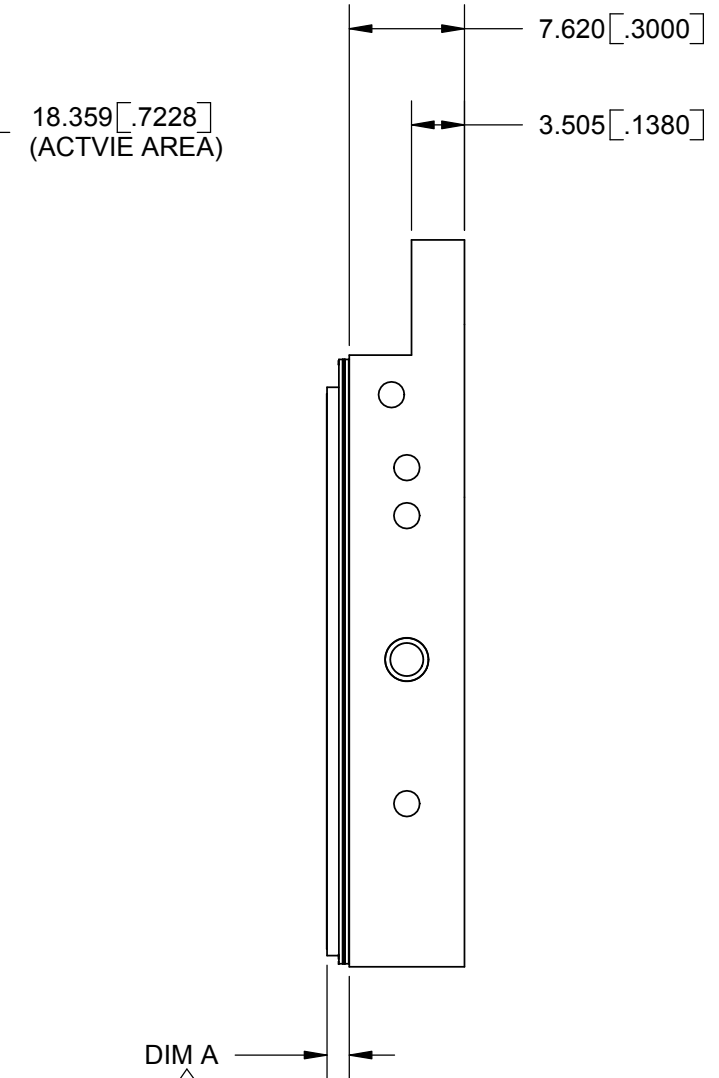
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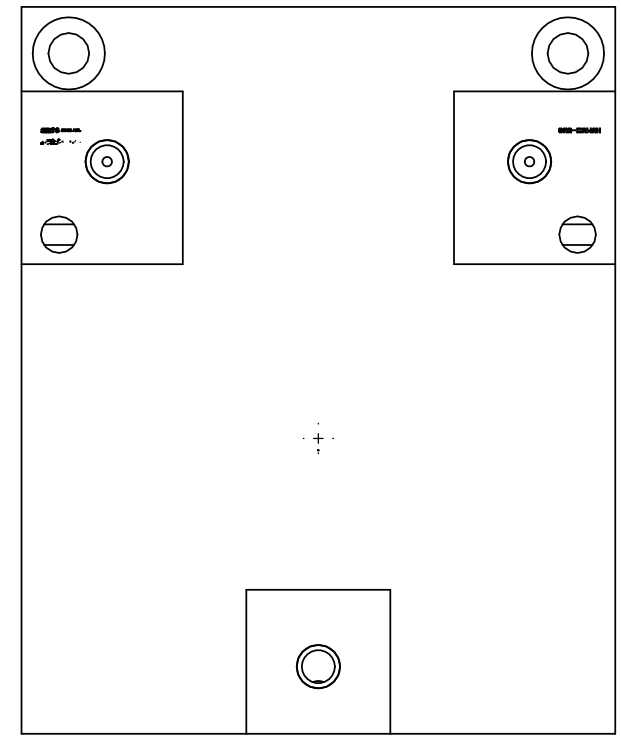
A



TOP VIEW



SIDE VIEW



BOTTOM VIEW



	NOMINAL	TOLERANCE	MINIMUM	MAXIMUM
DIM A	0.757	0.051	0.705	0.808
	[0.0298]	[0.0020]	[0.0278]	[0.0318]

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SINGLE SCA

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THIRD ANGLE PROJECTION	DRAWN D DOWTHWAITE
	CHECKED J GARNETT
	PROJECT ENGR. J GARNETT
	QUALITY D PAULSON

SIZE B	CAGE CODE 2D609	DWG. NO. 1200009	REV. A
SCALE: 1:1	2005-08-11	SHEET 2	

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DWG. NO. 1200009

SH 3 REV. A

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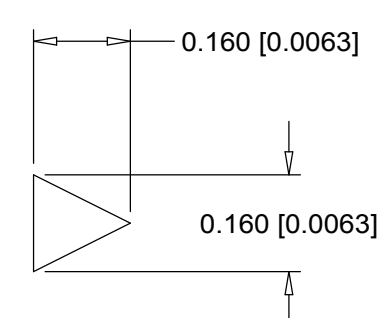
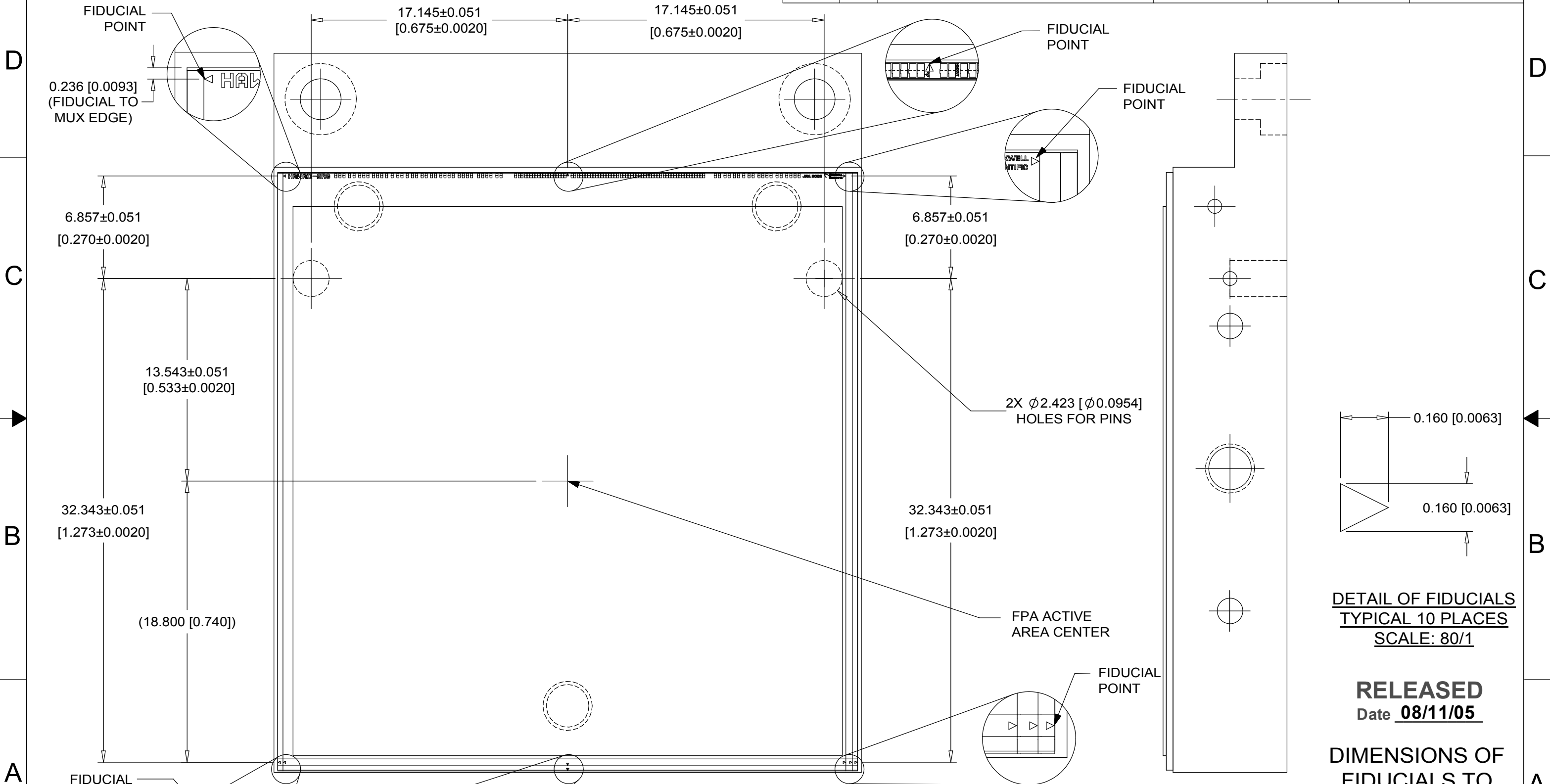
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**DETAIL OF FIDUCIALS
TYPICAL 10 PLACES
SCALE: 80/1**

RELEASED
Date **08/11/05**

**DIMENSIONS OF
FIDUCIALS TO
BASE PINS**

(0.532 [0.0209])
(FIDUCIAL TO
MUX EDGE)

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	CHECKED J GARNETT
	PROJECT ENGR. J GARNETT
	QUALITY D PAULSON

SIZE B	CAGE CODE 2D609	DWG. NO. 1200009	REV. A
SCALE: 1:1	2005-08-11	SHEET 3	

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DWG. NO. 1200009 SH 4 REV. A

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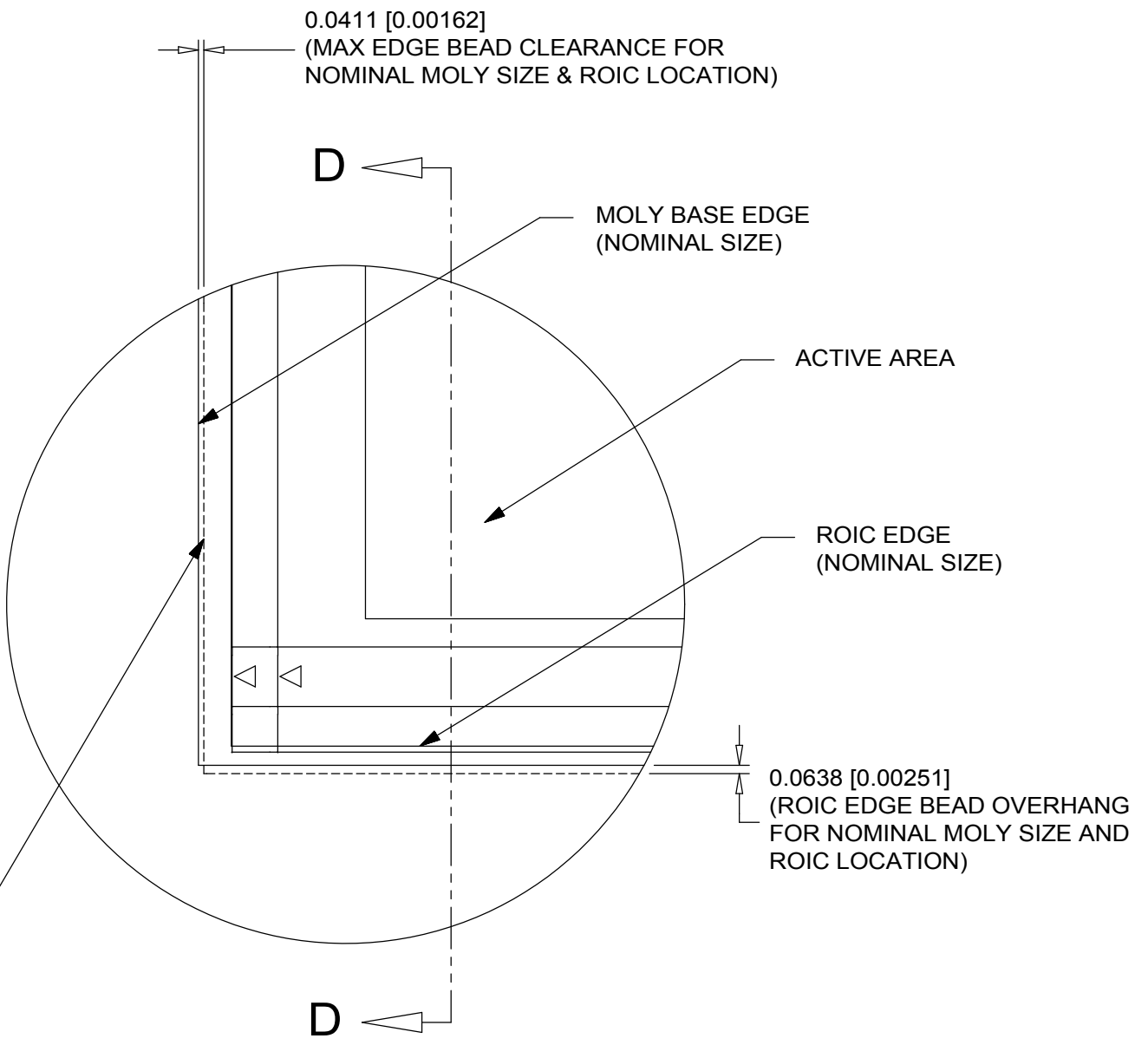
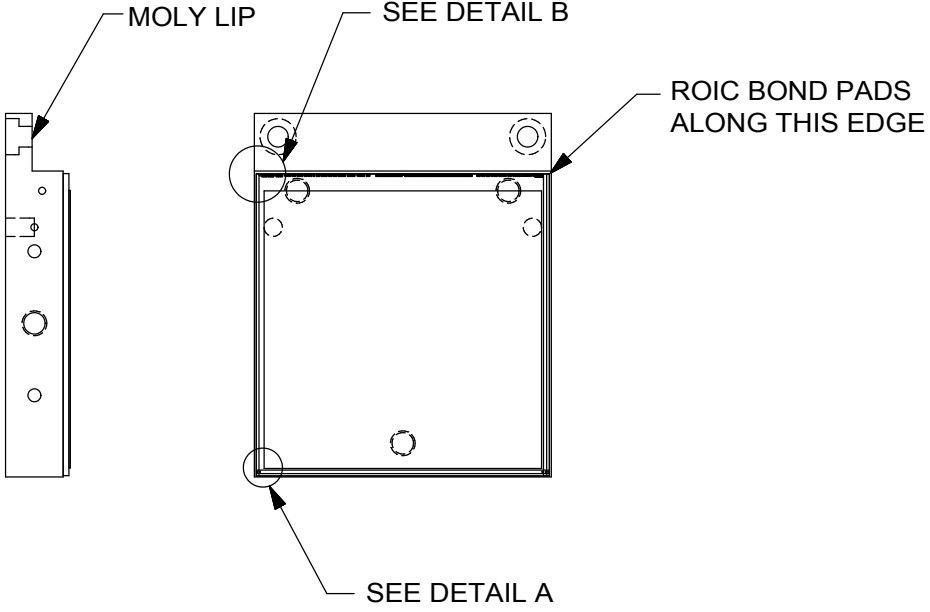
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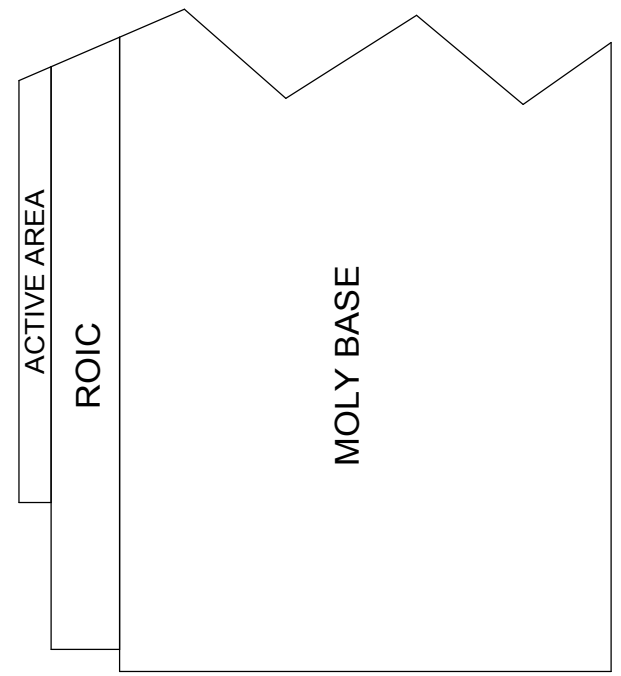
C

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DASHED LINE REPRESENTS 0.2096 [0.00825] WORST CASE OFFSET OF MUX EDGE FOR EDGE BEAD 0.1270 [0.005], SLIP ALLOWANCE 0.0762 [0.003], AND DICING TOLERANCE 0.0064 [0.00025] (THIS OFFSET DOES NOT INCLUDE PIN MISALIGNMENT TO EDGE OF MOLY BASE.)



DETAIL 'A'

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THIRD ANGLE PROJECTION	DRAWN D DOWTHWAITE
	CHECKED J GARNETT
	PROJECT ENGR. J GARNETT
	QUALITY D PAULSON

SIZE B	CAGE CODE 2D609	DWG. NO. 1200009	REV. A
SCALE: 1:1	2005-08-11	SHEET 4	

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DWG. NO.

1200009

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D

C

MOUNTING SURFACE
OF CERAMIC PWB

MOLY BASE EDGE (NOMINAL SIZE)

ROIC EDGE (NOMINAL SIZE)

DASHED LINE REPRESENTS 0.2096 [0.00825] WORST CASE OFFSET OF ROIC EDGE FOR EDGE BEAD 0.1270 [0.005], SLIP ALLOWANCE 0.0762 [0.003], AND DICING TOLERANCE 0.0064 [0.00025] (THIS OFFSET DOES NOT INCLUDE PIN MISALIGNMENT TO EDGE OF MOLY BASE.)

0.1394 [0.00549]
(CLEARANCE)

HAWAII-2RG

C

B

A

**DETAIL 'B'
BOND PAD EDGE**

ACTIVE AREA

NOTE:
ACTIVE AREA
SHOWN DOES
NOT
REPRESENT
EXTENT OF
DETECTOR DIE.

**SECTION C-C
NO SCALE**

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THIRD ANGLE PROJECTION

DRAWN
D DOWTHWAITECHECKED
J GARNETTPROJECT ENGR.
J GARNETTQUALITY
D PAULSONSIZE
BCAGE CODE
2D609

DWG. NO.

1200009

REV.
A

SCALE: 1:1

2005-08-11

SHEET

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RELEASEDDate **08/11/05**

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RSC FORM QF-0061 R1

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Not used
 LSYNCB
 HCLK
 vdd(digital)
 gnd(digital)
 FSYNCB
 VCLK
 CSB
 MAINRESETB
 READEN
 RESETEB
 FRAMECHK
 LINECHK
 RefOutA
 RefOutA
 OutputA[7]
 OutputA[7]
 WindowOutA
 WindowOutA
 OutputA[15]
 OutputA[15]
 OutputA[23]
 OutputA[23]
 OutputA[31]
 OutputA[31]
 Vbiaspower
 Vbiaspower
 Vbiasgate
 Drain
 Celldrain
 Vreset
 Dsub
 gnda(analog)
 gnda(analog)
 vdda(analog)
 Temp1
 GndOption

CAPACITOR VALUES ARE NOMINAL
22 µF CAPS ARE TANTALUM
0.1 µF CAPS ARE CRYO CERAMIC

JWST SCA MODULE
SCHEMATIC DIAGRAM
BALL AEROSPACE
E FREYMLER 7/22/04

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SIZE B	CAGE CODE 2D609	DWG. NO. 1200009	REV. A
SCALE: 1:1	2005-08-11	SHEET 6	

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RSC FORM QF-0061 R1

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DWG. NO. 1200009

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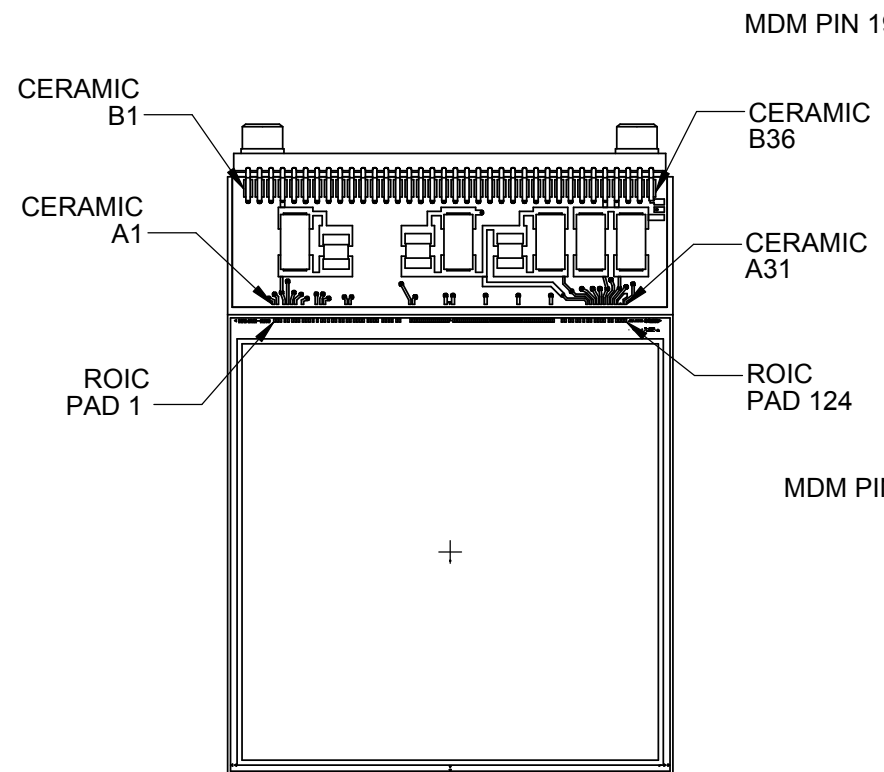
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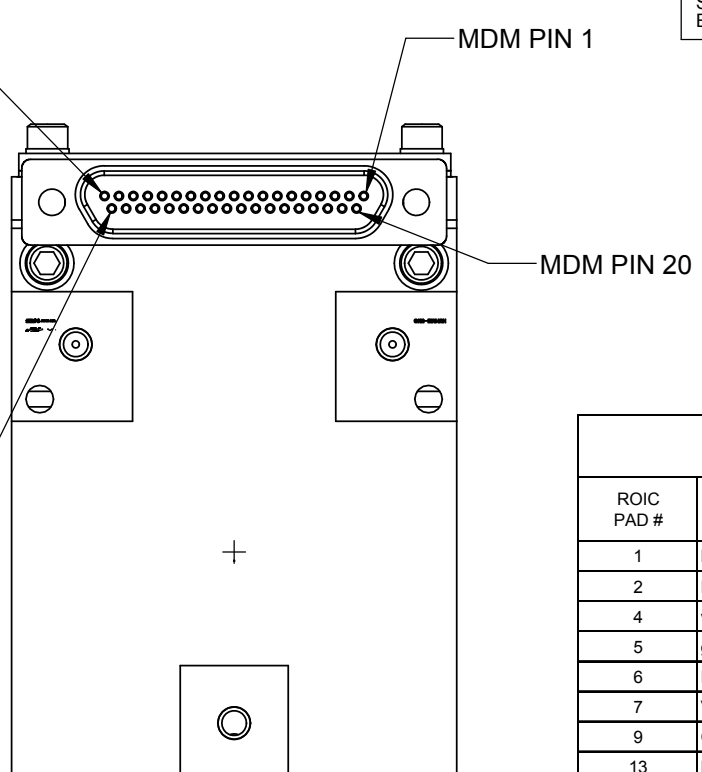
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Date 08/11/05



TOP VIEW



BOTTOM VIEW

JWST NIRCAM PIN-OUT						
ROIC PAD #	PAD NAME	CERAMIC A PADS	CERAMIC B PADS	MDM CONNECTION PIN #	LEVEL [V]	DESCRIPTION
1	LSYNCB	A1	B1	20	0 / 3.3	Line Sync (starts fast shift register)
2	HCLK	A2	B2	2	0 / 3.3	Fast (horizontal) shift register clock
4	vdd!	A3	B3	21	3.3	Power supply
5	gnd!	A4	B4	3	0	Power supply
6	FSYNCB	A5	B5	22	0 / 3.3	Frame Sync (starts slow shift reg.) / Data In (serial interface)
7	VCLK	A6	B6	4	0 / 3.3	Slow (vertical) shift register clock / Data Clk (serial interface)
9	CSB	A7	B7	23	0 / 3.3	Chip Select (serial interface)
13	MAINRESETB	A8	B8	5	0 / 3.3	Reset serial interface and on-chip mode registers
14	READEN	A9	B9	24	0 / 3.3	Enable row selection for read
15	RESETEN	A10	B10	6	0 / 3.3	Enable row selection for reset
21	FRAMECHK	A11	B11	25	0 / 3.3	
22	LINECHK	A12	B12	7	0 / 3.3	Vertical / horizontal test outputs (end of register)
37	sub!	A13	-	-	0	Multiplexer substrate (Lowest voltage on ROIC)
38	RefOutA	A14	B13 & B14	8 & 26	0 - 3.3	Reference outputs
54	OutputA[7]	A15	B15 & B16	9 & 27	0 - 3.3	Analog output pads (two per channel)
56	WindowOutA	A16	B17 & B18	10 & 28	0 - 3.3	Window mode outputs (guide mode)
72	OutputA[15]	A17	B19 & B20	11 & 29	0 - 3.3	
88	OutputA[23]	A18	B21 & B22	12 & 30	0 - 3.3	Analog output pads (two per channel)
104	OutputA[31]	A19	B23 & B24	13 & 31	0 - 3.3	
113	Vbiaspower	A20	B25 & B26	14 & 32	3.3	Source node of current source for pixel source follower
114	Vbiasgate	A21	B27	33	2.1 - 2.4	Bias of current source for pixel source follower
115	Drain	A22	B28	15	0 - 0.5	Drain node of output source follower
116	CellDrain	A23	B29	34	0	Drain node of pixel source follower
117	Vreset	A24	B30	16	0 - 1	Detector reset voltage
118	Dsub	A25	B31	35	0 - 1	Detector substrate
119	gnda!	A26	B32 & B33	17 & 36	0	Power supply
120	vdda!	A27	B34	18	3.3	Power supply
121	Temp1	A28	B35	37	0 - 3.3	
122	Temp1	A29	-	-	0 - 3.3	Temperature Sensors
123	Temp2	A30	-	-	0 - 3.3	
124	Temp2	A31	-	-	0 - 3.3	
-	Not Used	-	-	1	-	
-	Gnd Option	-	B36	19	-	

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PROJECT ENGR. J GARNETT
QUALITY D PAULSON

SIZE B	CAGE CODE 2D609	DWG. NO. 1200009	REV. A
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