

4

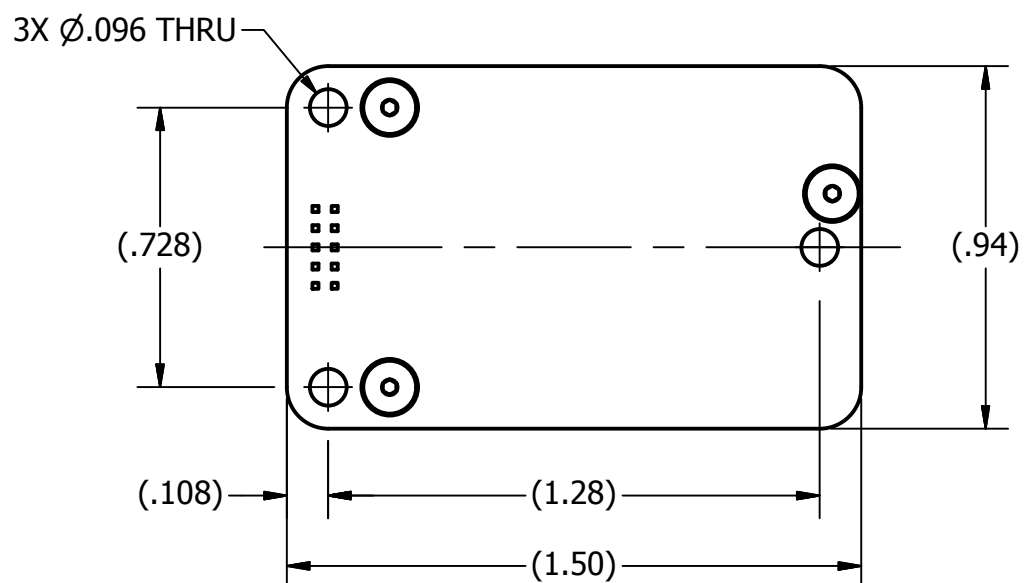
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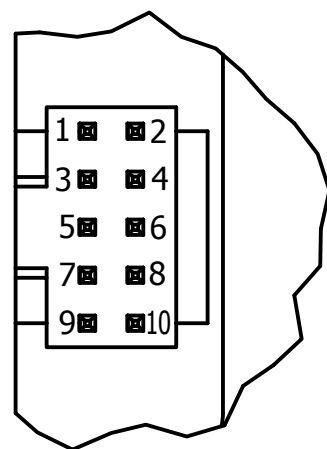
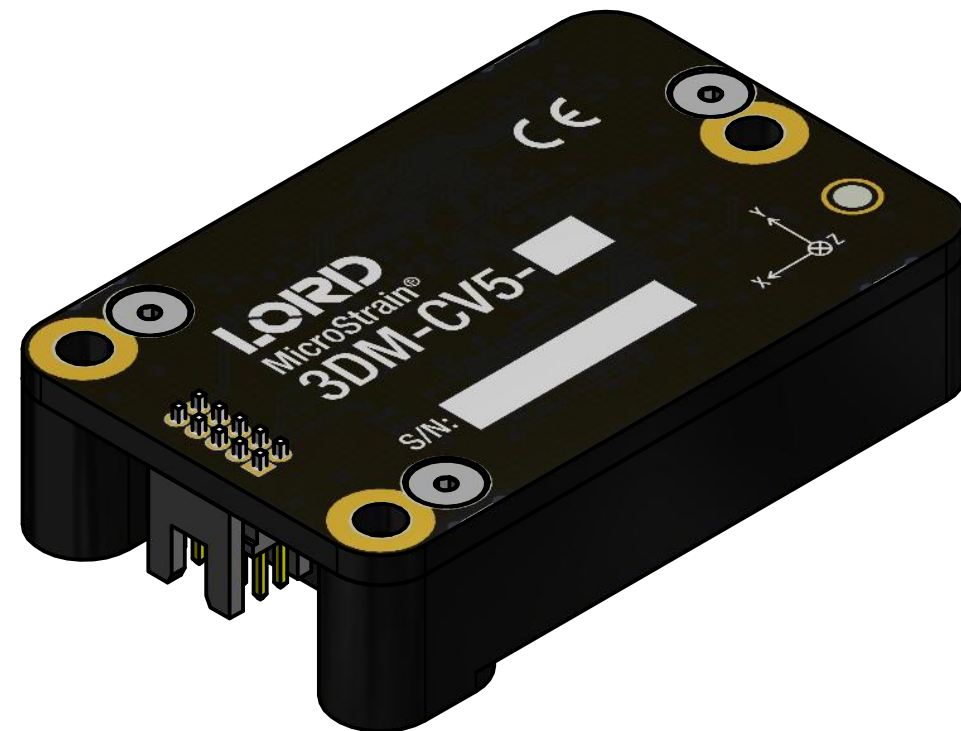
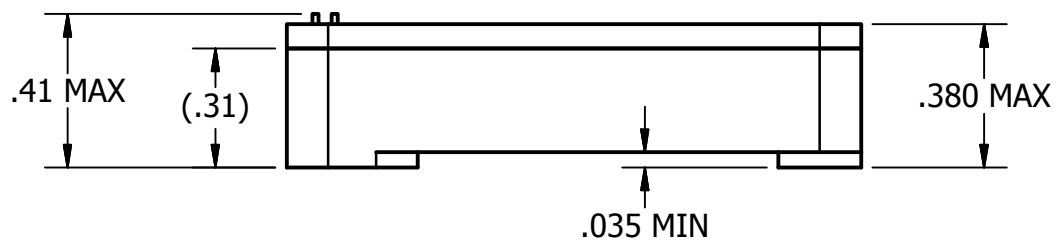
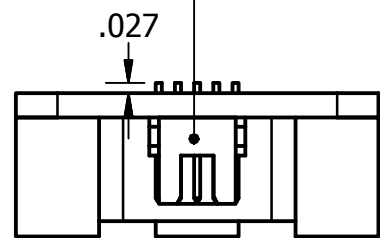
1

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
A	ADDED DETAIL A WITH PINOUT	6/7/2017	KMW
B	ADDED SENSOR ORIGINS PG.2	8/21/2017	KMW

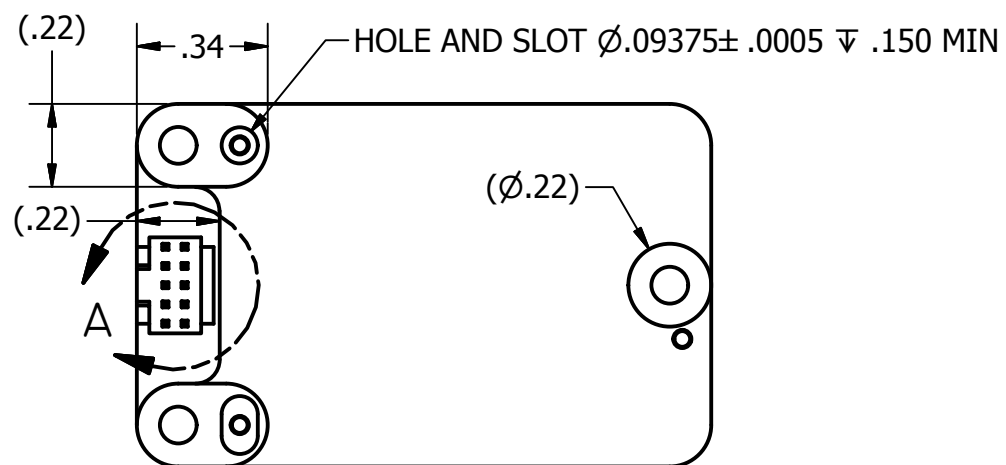
NOTE 1: THIS DRAWING IS NOT TO BE USED FOR MANUFACTURE OR INSPECTION  
 NOTE 2: DRAWINGS NOT SHOWN TO SCALE



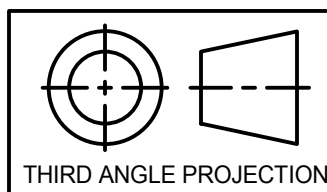
SAMTEC PART NUMBER  
FTSH-105-01-F-D-K



DETAIL A  
(PINOUT - ENLARGED)

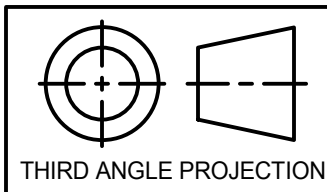
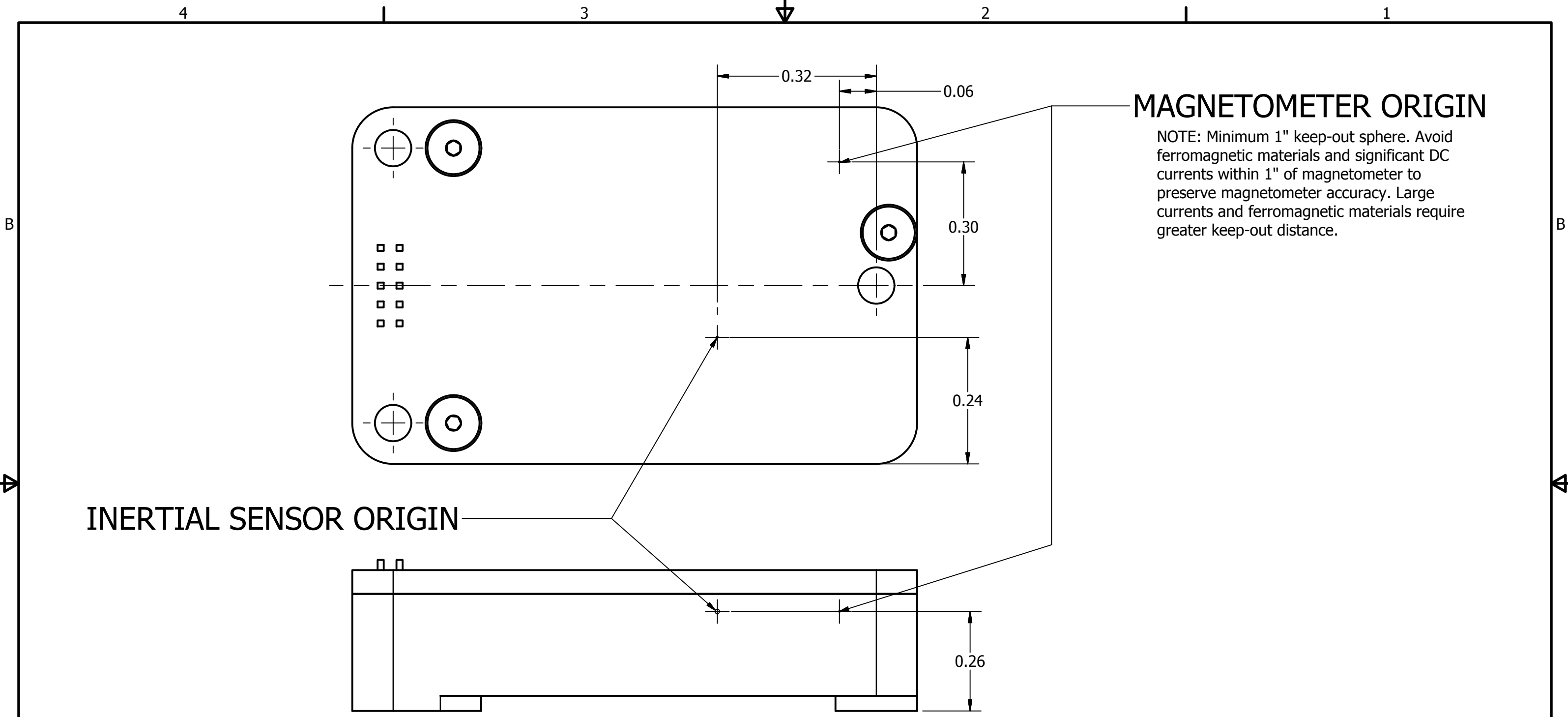


SHEET 1/5 MECHANICAL OVERVIEW



<b>PROPRIETARY NOTICE</b> THE INFORMATION CONTAINED HEREIN IS PROPRIETARY TO LORD CORPORATION AND SHALL NOT BE REPRODUCED OR DISCLOSED IN WHOLE OR IN PART OR USED FOR ANY DESIGN OR MANUFACTURE EXCEPT WHEN SUCH USER POSSESSES DIRECT, WRITTEN AUTHORIZATION FROM LORD CORPORATION.		<b>UNLESS OTHERWISE SPECIFIED</b> F.M.P. = FOR MANUFACTURING PURPOSES ALL DIMENSIONS ARE TO POINTS OF INTERSECTION DIMENSIONING/TOLERANCING PER ASME Y14.5 - 2009 ABBREVIATIONS, ACRONYMS, TERMINOLOGY PER TS-027 MACHINED SURFACES = 125µin (3.2µm) MAX BREAK ALL SHARP EDGES .005in - .025in (0.1mm - 0.6mm) AVERAGING OF DIAMETERS NOT PERMISSIBLE ALL DIMENSIONS ARE IN <b>INCHES</b> DIMENSIONS IN [ ] ARE IN MILLIMETERS		<b>LORD CORPORATION</b> Williston, VT 05495		DWG TYPE EC
SURFACE AREA (SQ. IN.)		CALC. WT. (LB.)	3065-0242-ICD	DR. BY: KYLE WERNER		INTERFACE CONTROL DRAWING 3DM-CV5 (-10, -15, -25)
				CKD. BY:	DRAWING NO. 3065-0254-ICD	
				ENGR. APPR.		
				MFG. APPR.	CAGE OXYZ9	
				Q.E. APPR.	SH 1 OF 5	

LORD PROPRIETARY

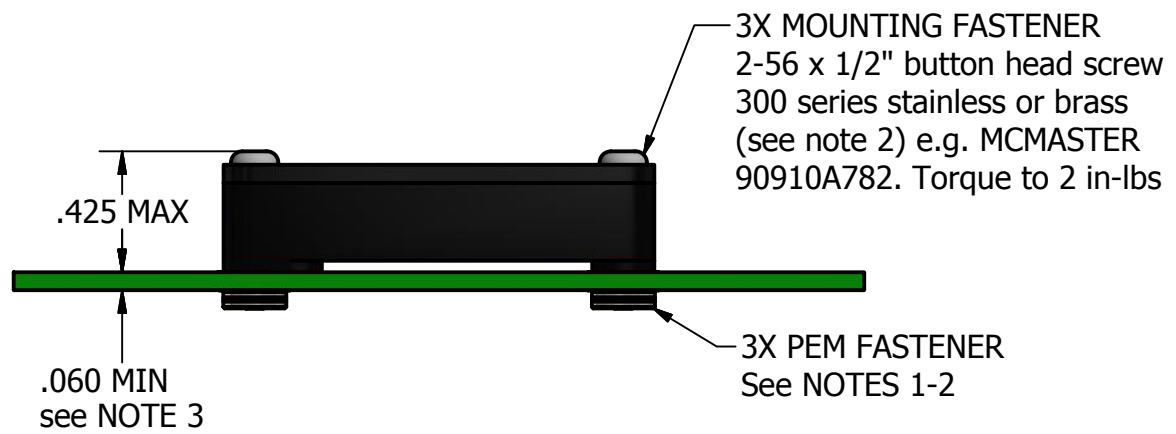
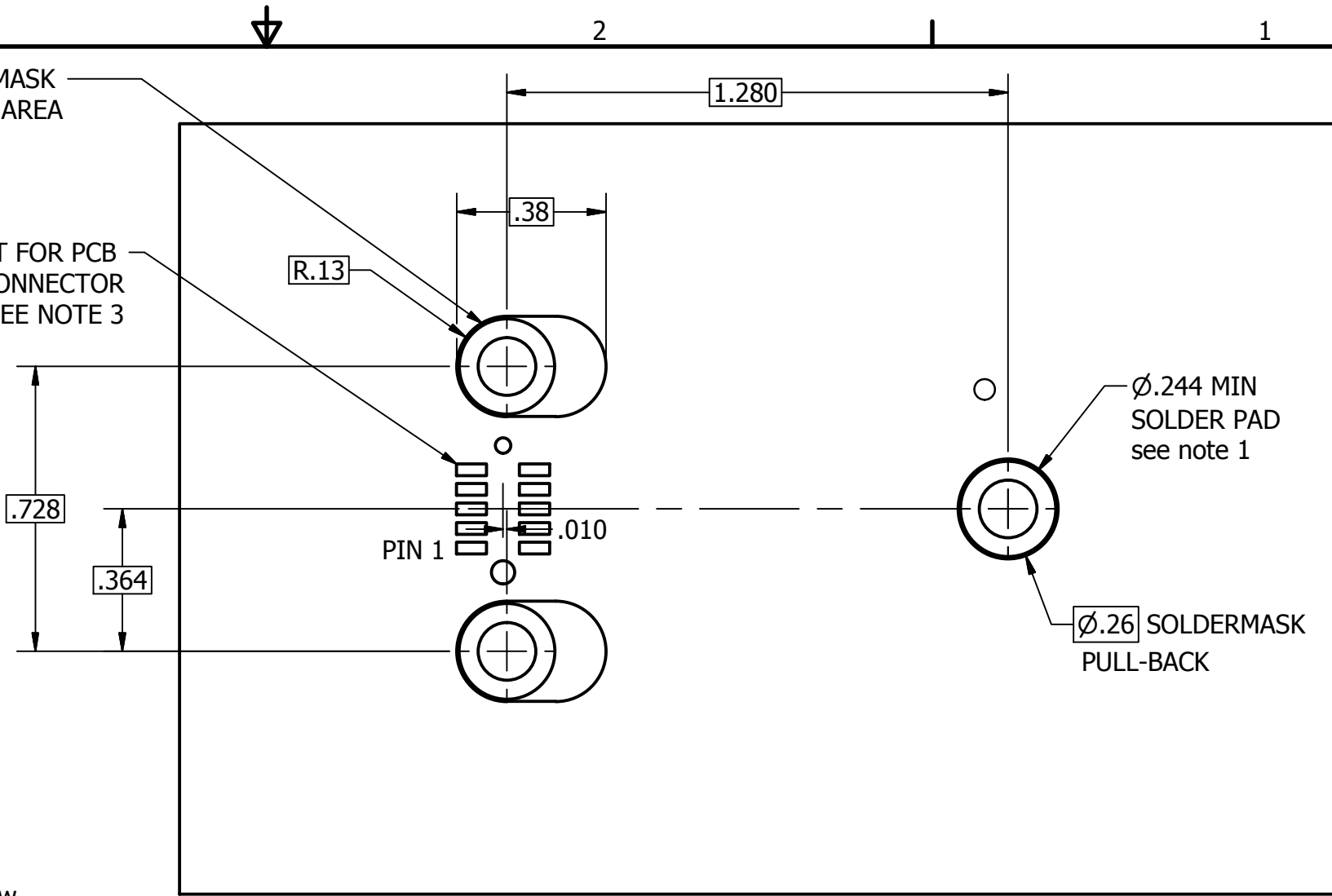


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			VOL (CU. IN.)	CKD. BY:	ENGR. APPR.	
				MFG. APPR.	Q.E. APPR.	CAGE OXYZ9
				DRAWING NO. 3065-0254-ICD		REV B
				SH 2 OF 5		



2x SOLDERMASK PULL-BACK AREA

PAD LAYOUT FOR PCB MOUNT CONNECTOR SEE NOTE 3

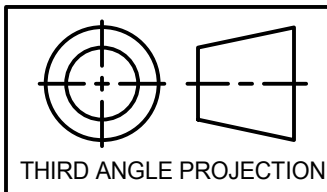


NOTE 1: For solderable fastener: PEM p/n SMTSOB-256-2ET see product datasheet for details. Alternate: 0.067 thru (with or without copper pad) for conventional nut mounting (see note 2).

NOTE 2: If using PEM fastener in NOTE 1, minimum PCB thickness is 0.060". Confirm board tolerances will not fall below this minimum value.

NOTE 3: Recommended PCB connectors: HARWIN M50-3100545 or keyed connector HARWIN M50-3110542

SHEET 3 / 5 PCB MOUNTING OPTION



THIRD ANGLE PROJECTION

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SURFACE AREA (SQ. IN.)	CALC. WT. (LB.)	3065-0242-ICD	VOL (CU. IN.)

**LORD CORPORATION**  
Williston, VT 05495

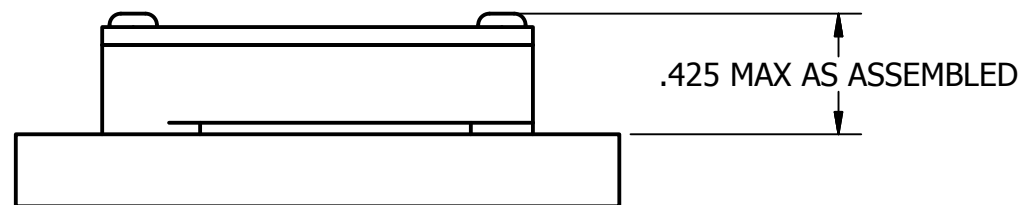
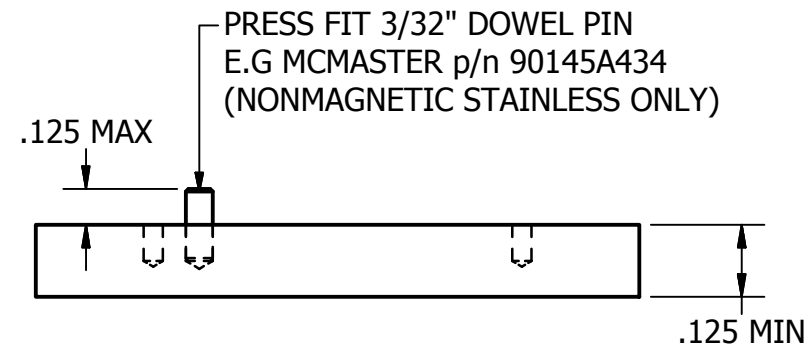
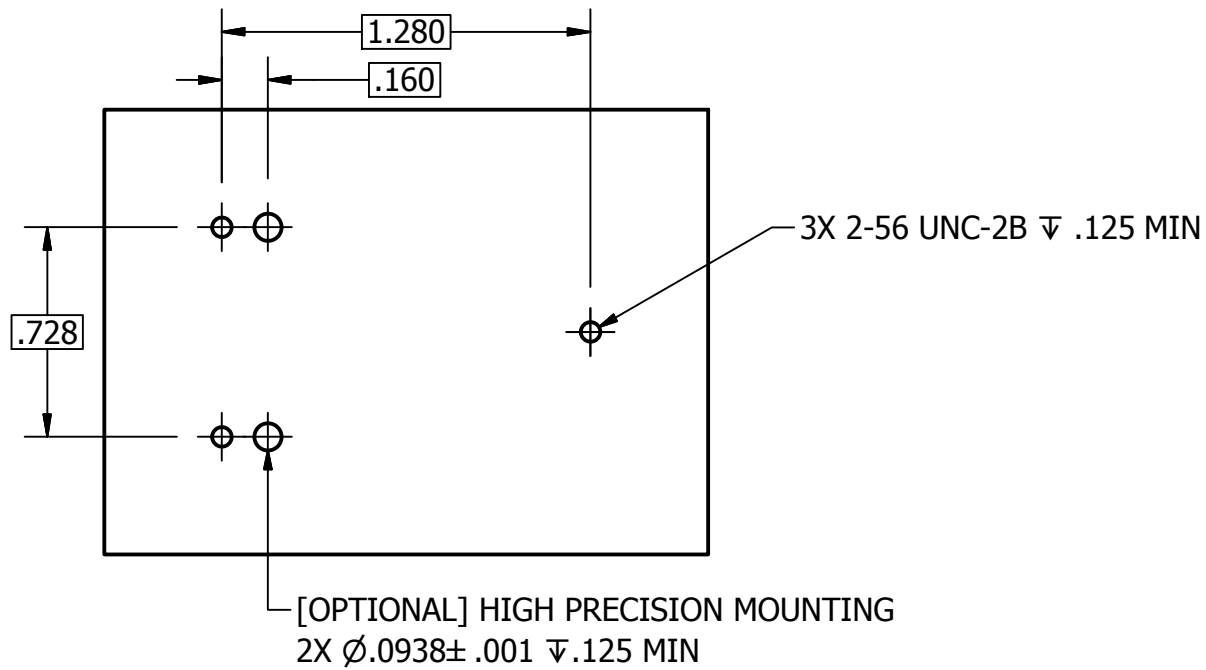
DR. BY KYLE WERNER  
CKD. BY  
ENGR. APPR.  
MFG. APPR.  
Q.E. APPR.

INTERFACE CONTROL DRAWING  
3DM-CV5 (-10, -15, -25)

CAGE OXYZ9	SIZE B	DRAWING NO. 3065-0254-ICD	REV B
		SH 3 OF 5	

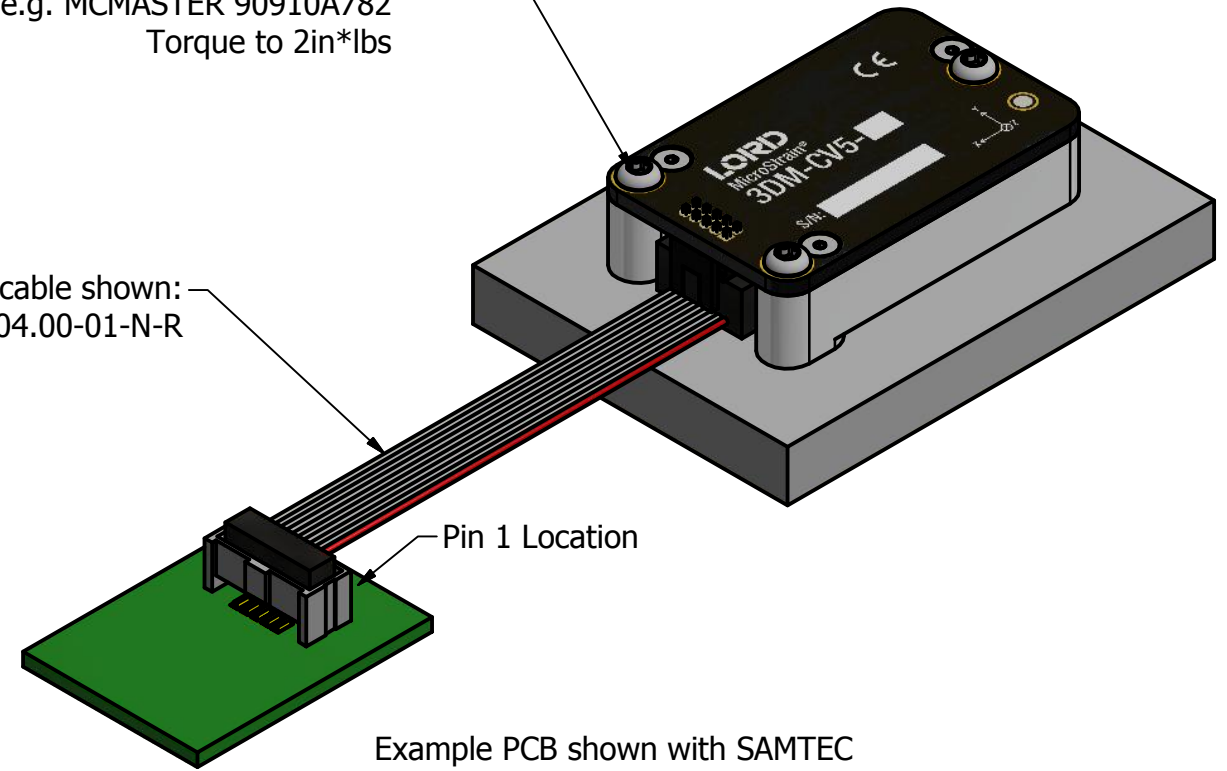
LORD PROPRIETARY

CHASSIS MOUNTING HOLE PATTERN



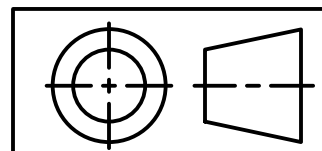
3X MOUNTING FASTENER  
 2-56 x 1/2" button head screw  
 300 series stainless (see note 2)  
 e.g. MCMASTER 90910A782  
 Torque to 2in\*lbs

Example cable shown:  
 SAMTEC FFSD-05-D-04.00-01-N-R



Example PCB shown with SAMTEC  
 SHF-105-01-L-D-SM see NOTE 1

NOTE 1: Alternative cable connectors include SAMTEC p/ns:  
 EHF-105-01-L-D-SM-LC  
 EHF-105-01-L-D-SM  
 SHF-105-01-L-D-SM-LC



THIRD ANGLE PROJECTION

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SURFACE AREA (SQ. IN.)		CALC. WT. (LB.)	3065-0242-ICD	VOL (CU. IN.)		DR. BY KYLE WERNER CKD. BY ENGR. APPR. MFG. APPR. Q.E. APPR.	INTERFACE CONTROL DRAWING 3DM-CV5 (-10, -15, -25)		CAGE OXYZ9 SIZE B	DRAWING NO.		REV
					3065-0254-ICD SH 4 OF 5					B		

PIN FUNCTIONS			
PIN #	NET NAME	FUNCTION	NOTES
1	USBDM	USB DATA-	NOTE 1,5
2	USBDP	USB DATA +	NOTE 1,5
3	Vin	POWER SUPPLY +	
4	RxD	UART receive (host to CV5)	NOTE 1
5	TxD	UART transmit (CV5 to host)	NOTE 1
6	GPIO3	LOGIC LEVEL GPIO	NOTE 4
7	GPIO1	LOGIC LEVEL GPIO (and pps input)	NOTE 3
8	GND	SIGNAL GROUND & POWER SUPPLY RETURN	
9	GPIO2	LOGIC LEVEL GPIO	NOTE 4
10	DISABLE	LOGIC LEVEL DISABLE (OPEN OR LOW = ENABLE)	
MOUNTING HOLES	CHASSIS	CHASSIS GROUND	NOTE 2

NOTE 1: primary interface communications is via either uart or usb. unused interface pins may be left unconnected

NOTE 2: for best EMC performance, tie CHASSIS (i.e. the three mounting holes) to a local ground (e.g. pcb groundplane, airframe ground, etc.) CHASSIS and GND can be the same or different grounds, see ABSOLUTE MAXIMUM RATINGS table for limits

NOTE 3: currently implemented as input only for Pulse Per Second (PPS) timing input. leave unconnected or wire to GND if not used.

NOTE 4: future functionality; not currently implemented. these pins can be left unconnected, or wired to GND, or wired to a TTL/CMOS compatible device for possible future usage.

NOTE 5: CV5-10 does not make use of USB connections (pins 1/2) these pins may be left unconnected if USB is unused.

ABSOLUTE MAXIMUM RATINGS		
Parameter	Limit	Notes
Vin to GND	±12V	NOTES 1,2
Logic I/O to GND	-0.3V to Vin+0.3V AND not to exceed +5.4V	NOTES 2,3
GPIO1 to GND	±12V	NOTE 2
DISABLE to GND	±12V	NOTE 2
GND to CHASSIS	±12V	NOTE 2
Operating Temperature	-40°C to +85°C	
Mechanical Shock	500g	

NOTE 1: Power supply is PROTECTED against ±12V, but will not OPERATE over that full range. See INTERFACE OPERATING SPECIFICATIONS table for operational limits.

NOTE 2: Also protected against ESD and other high-voltage / low-energy transients.

NOTE 3: applied to pins: RxD, TxD, USBDM, USBDP, GPIO2, GPIO3

INTERFACE OPERATING SPECIFICATIONS				
Parameter	MIN	TYP	MAX	NOTES
Power Supply Voltage (Vin)	+3.2V		+5.2V	Note 1
Power Consumption		200mW		
DC Input Logic Low (Vil)			0.9V	NOTES 1,2,3
DC Input Logic High (Vih)	2.1V			NOTES 1,2,3
DC Output Logic Low (Vol)			0.4V	NOTES 1,2,4
DC Output Logic High	2.6V			NOTES 1,2,4
Disable Input Threshold	0.4V		1.6V	NOTES 1,5

NOTE 1: All voltages are referenced to the GND pin (pin 8).

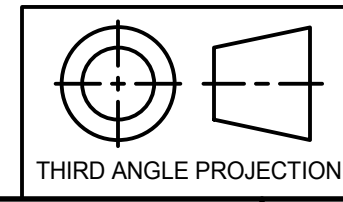
NOTE 2: Applies to pins: RxD, TxD, USBDM, USBDP, GPIO1, GPIO2, GPIO3.

NOTE 3: Nominal input impedance at RxD pin is 10Kohm to +3V.  
Nominal input impedance at GPIO1/2/3 pins is 40Kohm to GND.  
Nominal input impedance at USBDP pin is 1Kohm to +3V.  
Nominal input impedance at USBDM pin is 40Kohm to +3V.

NOTE 4: Applies when sourcing/sinking up to 6mA.

NOTE 5: Nominal input impedance at DISABLE pin is 1Mohm to GND when DISABLE voltage is between 0V and +5.6V. The DISABLE pin can be tied to GND or left unconnected when unused.

SHEET 5/5 **ELECTRICAL OVERVIEW**



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SURFACE AREA (SQ. IN.)		CALC. WT. (LB.)	3065-0242-ICD	<b>INTERFACE CONTROL DRAWING</b> <b>3DM-CV5 (-10, -15, -25)</b>		REV <b>B</b>
				CAGE OXYZ9	SIZE <b>B</b>	DRAWING NO. <b>3065-0254-ICD</b> SH 5 OF 5