

REVISION HISTORY										
LTR	ZONE	DESCRIPTION	CLASS	DWN	CHK	STRUCT	MATL	TERM	ENGR	DATE
A		INITIAL RELEASE	E							SEE PRODUCT DATA MANAGEMENT SYSTEM (PDMS) FOR APPROVAL SIGNATURES AND DATES

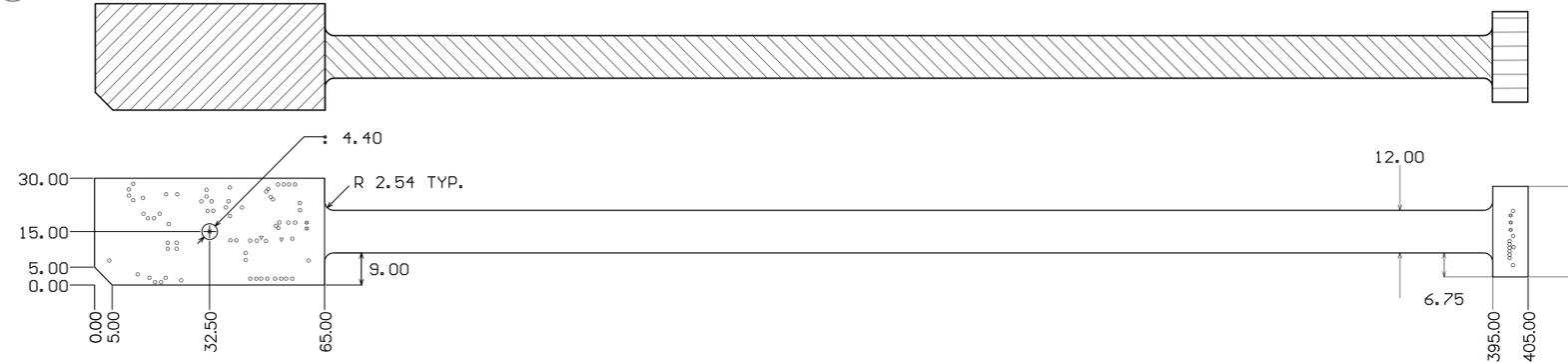
Layer	Name	Material	Thickness	Constant	Rigid Stack	Flex Stack	Rigid Stack 2
5	1	Flex Coverlay Top	Polyimide/Adhesive	0.051mm	3.5		
8	2	Top Overlay					
7	3	Top Solder	Solder Resist	0.010mm	3.5		
1	4	Component Side	Copper	0.036mm			
1	5	Dielectric 1	FR-4	0.381mm	4.8		
2	6	Ground Plane	Copper	0.036mm			
2	7	Dielectric 11	FR-4	0.226mm	4.2		
4	8	Flex Shield Top	Copper	0.018mm			
6	9	Dielectric 6	Polyimide	0.051mm	3.5		
6	10	Dielectric 10	Adhesive	0.041mm	4.2		
3	11	Diff Pair	Copper	0.018mm			
3	12	Dielectric 9	Polyimide	0.076mm	3.5		
2	13	Flex Shield Bot	Copper	0.018mm			
2	14	Dielectric 12	FR-4	0.226mm	4.2		
1	15	Power Plane	Copper	0.036mm			
1	16	Dielectric 4	FR-4	0.381mm	4.2		
7	17	Solder Side	Copper	0.036mm			
7	18	Bottom Solder	Solder Resist	0.010mm	3.5		
8	19	Bottom Overlay					
5	20	Flex Coverlay Bot	Polyimide/Adhesive	0.051mm	3.5		

Symbol	Hit Count	Finished Hole Size	Plated	Hole Type
○	1	94.49mil (2.400mm)	PTH	Round
▽	2	20.00mil (0.508mm)	PTH	Round
□	5	28.00mil (0.711mm)	PTH	Round
◇	76	15.00mil (0.381mm)	PTH	Round
	84 Total			

LAYER MECHANICAL/DIMENSIONS (GM12)

LAYER DRILL DRAWING (GD1)

P2 EDGE SENSOR - SENSE BOARD
10369692-102 REV A
JPL D.P. 03/16/2015



20. BOW AND TWIST OF RIGID SECTIONS SHALL NOT EXCEED 0.75% WHEN MEASURED DIAGONALLY.
19. ALL UNDIMENSIONED HOLES SHALL BE LOCATED WITHIN 0.12 RADIUS OF THE POSITION INDICATED BY THE MASTER PATTERN ARTWORK.
18. ALL COPPER FEATURE SIZES OF THE FINISHED PRINTED WIRING FLEXPRINT SHALL BE WITHIN ±10% OF THE SIZE INDICATED BY THE MASTER PATTERN ARTWORK.
17. REGISTRATION OF ALL PRINTED WIRING ELEMENTS AFTER LAMINATION SHALL BE WITHIN 0.076 mm OF THE TRUE POSITION.
16. PAIRED TRACES IN FLEX AREA ARE TO HAVE 100 OHMS ±10% DIFFERENTIAL IMPEDANCE. TRACE WIDTH AND SPACE MAY BE ADJUSTED TO OBTAIN THIS.
15. ELECTRICAL TEST: CONTINUITY SHORT AND OPEN TESTING ON ALL AVAILABLE EXPOSED TERMINAL PADS USING IPC-D-356A NETLIST DATA. CONTINUITY TEST SHALL BE AT 5 OHMS MAX. SHORTS TESTING SHALL BE PERFORMED AT 200V. MINIMUM ISOLATION OF 100M OHMS.
14. LEGEND OVER SOLDER MASK ON BOTH SIDES OF PWB USING HYSOL M-SERIES/CATALYST 20/A WHITE EPOXY INK. LEGEND MARKING SHALL NOT BE NEARER THAN .005 INCH TO ANY PAD. CHARACTER HEIGHT SHALL BE .030 INCH MINIMUM.
13. AFTER APPLICATION OF SOLDER MASK, PLATE ALL EXPOSED COPPER WITH ENIG PER IPC-6013.
12. APPLY SOLDER MASK, ITEM 7, TO TOP AND BOTTOM OVER BARE COPPER, COMPONENT PADS TO BE FREE FROM BLEEDING OR MISREGISTRATION.
11. FABRICATE AND INSPECT PRINTED WIRING BOARD PER IPC-6013B, CLASS 2, TYPE 4.
10. FOIL LAMINATION MAY BE APPLIED AS AN ALTERNATE COSTRUCTION ON OUTER LAYERS.
9. MATERIAL: NON-SUPPORTED ADHESIVE FILM (THICKNESS AND QUANTITY AS REQUIRED) PER IPC-4203/18-0000MX
8. MATERIAL: NON-SUPPORTED POLYIMIDE FILM, ADHESIVE ONE SIDE PER IPC-4203/1-E1E1M1/0
7. MATERIAL: 1 OZ COPPER CLAD, SINGLE SIDED, .002 IN. THICK POLYIMIDE LAMINATE PER IPC-4204/11-E1E2Z CU-W7-HS/0
6. MATERIAL: 1 OZ COPPER CLAD, DOUBLE SIDED, .003 IN. THICK POLYIMIDE LAMINATE PER IPC-4204/11-E1E3Z CU-W7-HS/HS
5. MATERIAL: 0.135 mm THICK EPOXY/WOVEN GLASS PREPEG PER IPC-4101/P 26-E2116 TW RE VC
4. MATERIAL: 1 OZ COPPER CLAD, DOUBLE SIDED, 0.38 mm THICK EPOXY/WOVEN GLASS LAMINATE PER IPC-4101/L 26-0380-C1/C1

QTY REQD	ITEM NO	REF DES	CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	SPECIFICATION	MATERIAL OR NOTE	ZONE
	AR	8		SERIES M, CATALYST 20/A	INK, WHITE EPOXY		14	
	AR	7		LPI, SM P41	SOLDERMASK, PROBIMER 52	IPC-SM-840 CL A	12	
	AR	6			ACRYLIC ADHESIVE FILM NON-SUPPORTED		9	
	AR	5			POLYIMIDE FILM ACRYLIC ADHESIVE ONE SIDE		8	
	AR	4			POLYIMIDE FILM CU CLAD 1/2 OZ.		7	
	AR	3			POLYIMIDE FILM CU CLAD 1/2 OZ. / 1/2 OZ.		6	
	AR	2			GLASS BASE EPOXY RESIN PREPREG, B-STAGE		5	
	AR	1			GLASS BASE EPOXY RESIN CU CLAD 1 OZ / 1 OZ		4	

3. THIS IS A REDUCED DIMENSION DRAWING. ADDITIONAL DIMENSIONS NEEDED TO DEFINE THE TRUE PROFILES OF THIS PART SHALL BE OBTAINED FROM THE MASTER CAD MODEL DATABASE NAMED 10369692-A.ZIP. DIMENSIONS AND TOLERANCES SHALL BE INTERPRETED PER ASME Y14.5M.

2. THIS DOCUMENT AND RELATED ARTWORK ARE COMPUTER GENERATED. ALL MODIFICATIONS ARE TO BE PERFORMED TO THE ORIGINAL DATABASE ON FILE IN SECTION 383.

1. THE FINISHED PRINTED WIRING BOARD SHALL MEET THE REQUIREMENTS OF IPC-A-600-X (LATEST REVISION).

NOTES: UNLESS OTHERWISE SPECIFIED

THIS DOCUMENT HAS BEEN REVIEWED AND DETERMINED NOT TO CONTAIN EXPORT CONTROLLED TECHNICAL DATA.

MATERIAL PER SPECIFICATION	THIRD ANGLE PROJECTION
TMT	
NEXT ASSEMBLY	USED ON
APPLICATION	

MATERIAL	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS	CONTRACT NO
	LINEAR TOLERANCES:	
	0 to 6 ±0.1	
	OVER 6 to 30 ±0.2	
	OVER 30 to 120 ±0.3	
	OVER 120 to 315 ±0.5	
	OVER 315 to 1000 ±0.8	
	ANGULAR TOLERANCES: ±0.5°	
	MACHINE FINISH	
	DO NOT SCALE DRAWING	
	INTERPRET DWG PER ASME Y14.100M	

JET PROPULSION LABORATORY			
CALIFORNIA INSTITUTE OF TECHNOLOGY PASADENA, CA 91109			
EDGE SENSOR - DRIVE BOARD			
RIGID-FLEX PWB FABRICATION			
SIZE D	CAGE CODE 23835	10369689	REV A
SCALE: 1/1	UNCLASSIFIED	SHEET 18	OF 2