REVISION HISTORY

LTR	ZONE	DESCRIPTION	DWN	CHK	STRUCT	MATL	THRM CONT			ENGR	DSGN SUPV	DATA MGT	RELEASE DATE
A		INITIAL RELEASE CAT II	SEE JPL DATA MANAGEMENT SYSTEM FOR APPROVAL SIGNATURES AND DATES										

21. MARK IN LOCATION SHOWN WITH 1.0 MINIMUM HIGH CHARACTERS THE SERIAL NUMBER "NXXXXX" (WHERE N IS A VENDOR DESIGNATION LETTER ASSIGNED BY TMT AND XXXXX IS A UNIQUE 5 DIGIT SERIAL NUMBER FOR EACH PART. THE VENDOR DESIGNATION AND THE STARTING SERIAL NUMBER SHALL BE IN ACCORDANCE WITH THE VALUES PROVIDED IN THE PURCHASE ORDER)
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 ITEM 8. 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
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 10398552-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

QTY REQD	ITEM NO	REF DES	CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	SPECIFICATION	MATERIAL OR NOTE	ZONE
	-1							
	AR	8			ENTHONE 50-100R CATALYST 9	INK, WHITE EPOXY	IPC-4781	14
	AR	7			PROBIMER 52 OR TAIYO PSR-4000	SOLDERMASK, LPI	IPC-SM-840 CL A	12
	AR	6				ACRYLIC ADHESIVE FILM NON-SUPPORTED	IPC-4203/18	9
	AR	5				POLYIMIDE FILM ACRYLIC ADHESIVE ONE SIDE	IPC-4203/1	8
	AR	4				POLYIMIDE FILM CU CLAD 1/2 OZ.	IPC-4204/11	7
	AR	3				POLYIMIDE FILM CU CLAD 1/2 OZ. / 1/2 OZ.	IPC-4204/11	6
	AR	2				GLASS BASE EPOXY RESIN PREPREG, B-STAGE	IPC-4104/P 26	5
	AR	1				GLASS BASE EPOXY RESIN CU CLAD 1 OZ / 1 OZ	IPC-4104/L 26	4

PARTS LIST

10398553	TMT
NEXT ASSEMBLY	USED ON
APPLICATION	

MATERIAL: MATERIAL PER SPECIFICATION

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS

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

CONTRACT NO

APPD DATE

DWN D PALMER

ENGR C SHELTON

SEE JPL DATA MANAGEMENT SYSTEM FOR APPROVAL SIGNATURES AND DATES.

JET PROPULSION LABORATORY
CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CA 91109

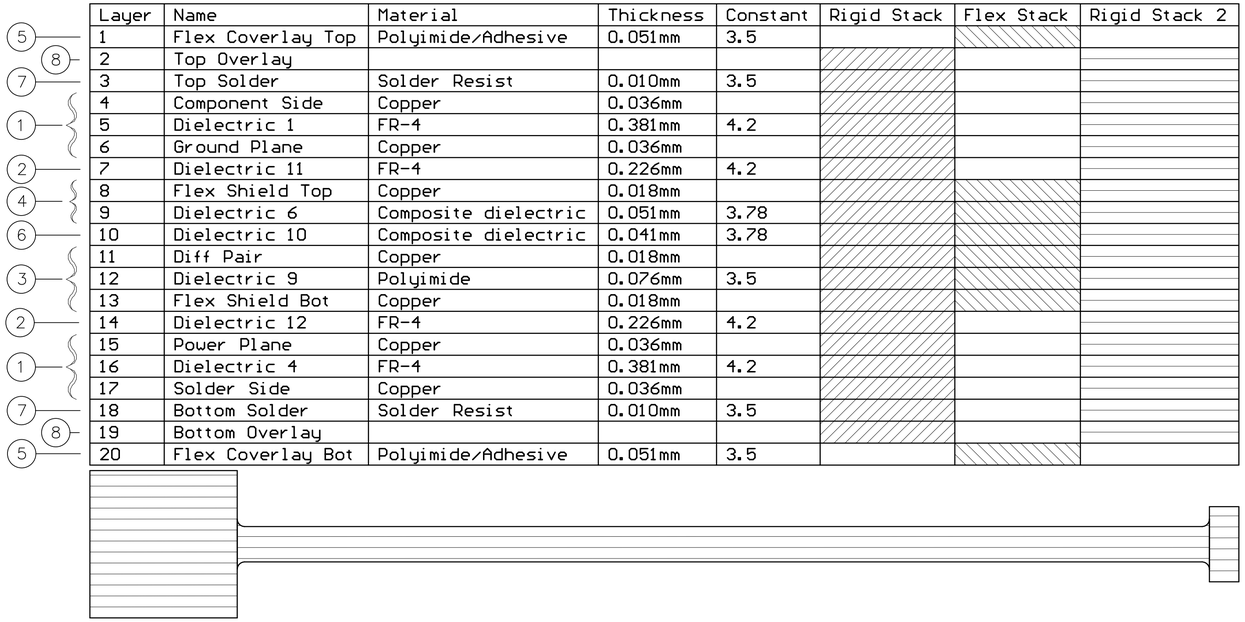
PRINTED WIRING BOARD, EDGE SENSOR DRIVE BOARD – DIRECT V5

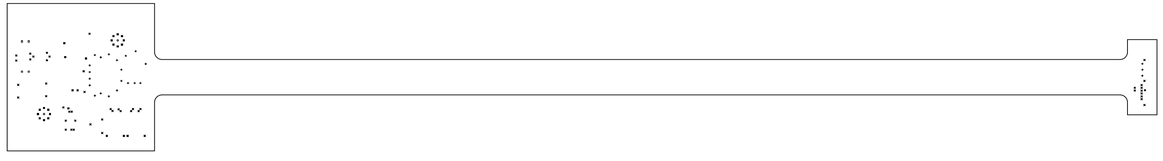
SIZE	CAGE CODE		REV
D	23835	10398552	A
SCALE: 1/1	UNCLASSIFIED	SHEET 1 OF 2	

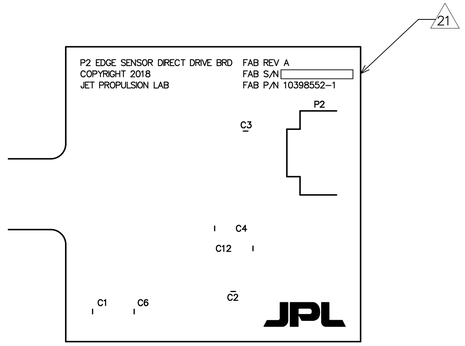
REV 01/2013

DBASE NAME: ANSI_D-SH1/A5

Layer	Name	Material	Thickness	Constant	Rigid Stack	Flex Stack	Rigid Stack 2
1	Flex Coverlay Top	Polyimide/Adhesive	0.051mm	3.5			
2	Top Overlay						
3	Top Solder	Solder Resist	0.010mm	3.5			
4	Component Side	Copper	0.036mm				
5	Dielectric 1	FR-4	0.381mm	4.2			
6	Ground Plane	Copper	0.036mm				
7	Dielectric 11	FR-4	0.226mm	4.2			
8	Flex Shield Top	Copper	0.018mm				
9	Dielectric 6	Composite dielectric	0.051mm	3.78			
10	Dielectric 10	Composite dielectric	0.041mm	3.78			
11	Diff Pair	Copper	0.018mm				
12	Dielectric 9	Polyimide	0.076mm	3.5			
13	Flex Shield Bot	Copper	0.018mm				
14	Dielectric 12	FR-4	0.226mm	4.2			
15	Power Plane	Copper	0.036mm				
16	Dielectric 4	FR-4	0.381mm	4.2			
17	Solder Side	Copper	0.036mm				
18	Bottom Solder	Solder Resist	0.010mm	3.5			
19	Bottom Overlay						
20	Flex Coverlay Bot	Polyimide/Adhesive	0.051mm	3.5			







DASH AND SERIAL NUMBER DETAIL (2X)

Symbol	Count	Hole Size	Plated	Hole Type	Via/Pad
⌑	45	0.381mm (15.00mil)	PTH	Round	Via
⌧	27	0.508mm (20.00mil)	PTH	Round	Via
◇	23	0.711mm (28.00mil)	PTH	Round	Via
□	4	0.838mm (33.00mil)	PTH	Round	Pad
○	2	2.400mm (94.49mil)	NPTH	Round	Pad
	101 Total				

LAYER DRILL DRAWING (GD1)

P2 EDGE SENSOR – DIRECT DRIVE BOARD
10398552-116 REV A
JPL D.P. 09/26/2019

SIZE	CAGE CODE		REV
D	23835	10398552	A
SCALE: 1/1	UNCLASSIFIED	SHEET 2 OF 2	

REV 02/2013
DBASE NAME: ANSI_D-SH2/A5