

REVISION HISTORY												
LTR	DESCRIPTION	DWN	CHK	STRUCT	MATL	THRM CONT			ENGR	DSGN SUPV	DATA MGT	RELEASE DATE
C	INCREASED ANNULAR RING FOR SHIELD PIN PADS ON STIFFENER	CLASS E										

LAYER STACKUP EXPLODED VIEW (NOT TO SCALE)

ADHESIVE

LAYER 1

LAYER 2

GREEN LPI SOLDERMASK OVER BARE COPPER

FR-4, LAMINATED, CU CLAD 1 OZ./SQ. FT (STIFFENER)

POLYIMIDE FILM / ACRYLIC ADHESIVE ONE SIDE (TOP COVERLAY)

CU CLAD POLYIMIDE, 1 OZ LAYER 1 - LAYER 2

POLYIMIDE FILM / ACRYLIC ADHESIVE ONE SIDE (BOTTOM COVERLAY)

5

4

5

11. ELECTRICAL TEST REQUIREMENTS (SHORT AND OPEN TESTING):
A. CONTINUITY: 10 OHMS MAXIMUM FOR EACH CONDUCTOR.
B. IR TEST AT 100 VDC FOR 10 MEGAOHM MINIMUM ISOLATION BETWEEN MUTUALLY ISOLATED CONDUCTORS

10. PLATE ALL EXPOSED COPPER WITH ENIG PER IPC-6013

9. ALL UNDIMENSIONED HOLES SHALL BE LOCATED WITHIN 0.12 RADIUS OF THE POSITION INDICATED BY THE MASTER PATTERN ARTWORK.

8. ALL COPPER FEATURE SIZES OF THE FINISHED PRINTED WIRING FLEXPRINT SHALL BE WITHIN ±10% OF THE SIZE INDICATED BY THE MASTER PATTERN ARTWORK.

7. REGISTRATION OF ALL PRINTED WIRING ELEMENTS AFTER LAMINATION SHALL BE 0.075 mm OF THE TRUE POSITION INDICATED BY THE MASTER PATTERN ARTWORK.

6. FABRICATE AND INSPECT PER IPC-6013, CLASS 2, TYPE 2

5 MATERIAL: NON-SUPPORTED POLYIMIDE FILM, ADHESIVE ONE SIDE PER IPC-4203/1-E1E1M1/0

4 MATERIAL: 1 OZ COPPER CLAD, DOUBLE SIDED, .002 IN. THICK POLYIMIDE LAMINATE PER IPC-4204/11-E1E2O0/0 CU-W7-1S/1S

3. ALL UNTOLERANCED DIMENSIONS ARE BASIC.

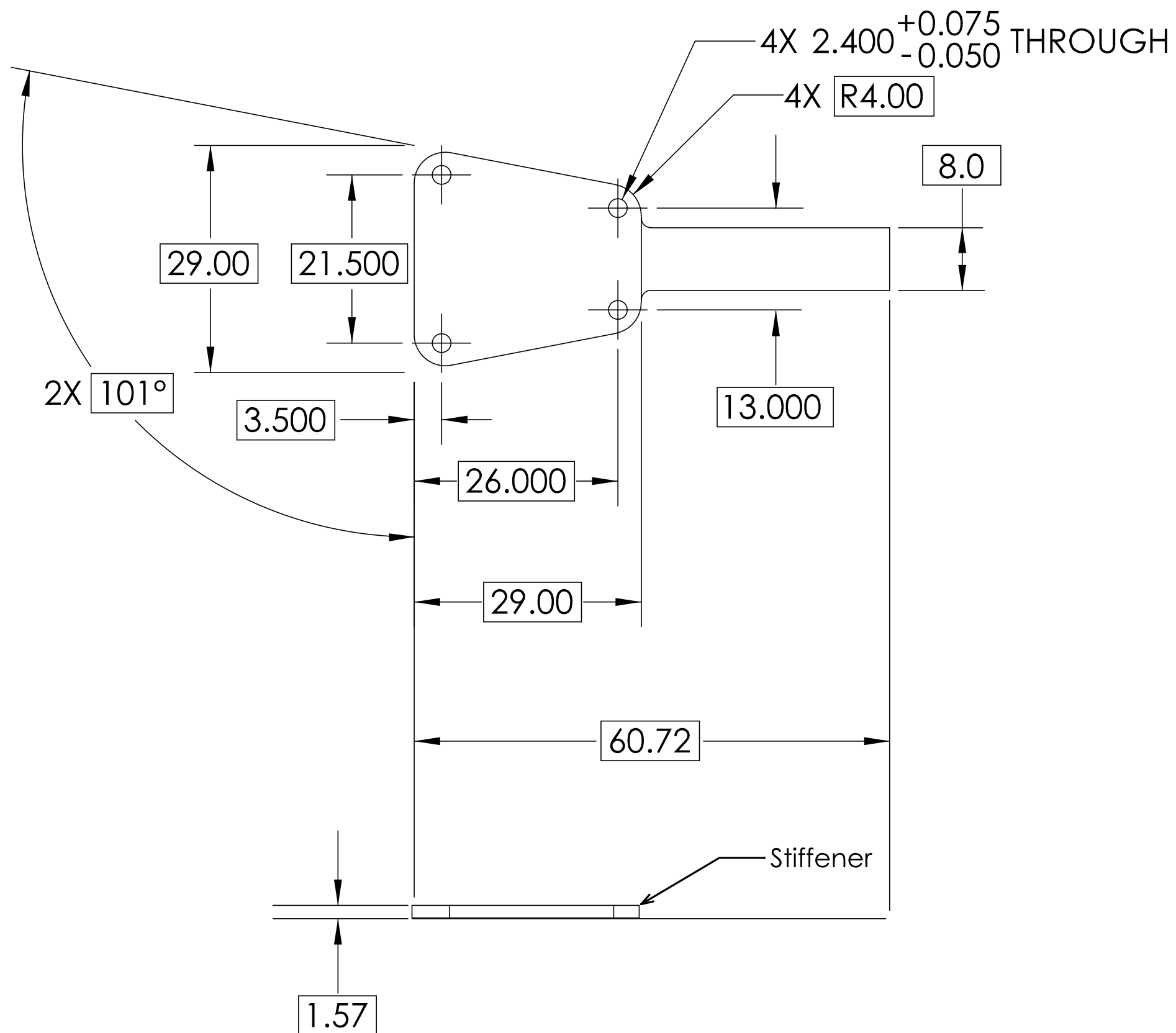
2. THIS IS A REDUCED DIMENSION DRAWING. ADDITIONAL DIMENSIONS NEEDED TO DEFINE THE TRUE PROFILES OF THIS PART SHALL BE OBTAINED FROM THE MASTER CAD MODEL DATABASE NAMED M1S-100-01219. DIMENSIONS AND TOLERANCES SHALL BE INTERPRETED PER ASME Y14.5M.

1. THIS DATABASE IS THE SOURCE FOR ALL FABRICATION OUTPUT FILES ARCHIVED IN MASTER ARTWORK DATABASE M1S-100-01219. ALL MODIFICATIONS TO THE MASTER ARTWORK SHALL BE PERFORMED HERE.

NOTES: UNLESS OTHERWISE SPECIFIED

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

M1S-100-01215	TMT		
NEXT ASSEMBLY	USED ON		
APPLICATION			
MATERIAL:	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS		
MATERIAL PER SPECIFICATION	LINEAR TOLERANCES: 0 to 6 ± 0.1 OVER 6 to 30 ± 0.2 OVER 30 to 120 ± 0.3 OVER 120 to 315 ± 0.3 ANGULAR TOLERANCES: ± 0.5		
THIRD ANGLE PROJECTION	MACHINE FINISH ✓		
	DO NOT SCALE DRAWING INTERPRET DWG PER ASME Y14.100M		
CONTRACT NO			
APPD _____ DATE _____			
DWN D. Palmer	2013/05/08		
CHK			
STRUCT			
MATL			
THRM CONT			
ENGR			
DSGN SUPV			
TMT Observatory Corporation www.tmt.org			
TMT STRAIN GAUGE CONNECTOR (VERTICAL) FLEX PWB FABRICATION			
SIZE	CAGE CODE	REV	
A	6PAL4	M1S-100-01219 C	
SCALE:	1/1	SENSITIVE	SHEET 1 OF 12



JPL DRAWING NO 10364578-C

CAGE CODE		REV	
A	6PAL4	M1S-100-01219	C
SCALE:	1/1	SENSITIVE	SHEET 2 OF 12

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

TABLE A / ARTWORK FILE DESIGNATION

SH NO.	FILE:	LOGICAL LAYER	PHYSICAL LAYER	DESCRIPTION
4	M1S-100-01219.GTO	-	OUTER LAYER	OVERLAY SIDE A
5	M1S-100-01219.GTS	-	OUTER LAYER	COVERLAY SIDE A
6	M1S-100-01219.GTL	COPPER SIDE A	OUTER LAYER COPPER	LAYER 1
7	M1S-100-01219.GBL	COPPER SIDE B	OUTER LAYER COPPER	LAYER 2
8	M1S-100-01219.GBS	-	OUTER LAYER	COVERLAY SIDE B
9	M1S-100-01219.GD1	-	DRILL SYMBOLS	DRILL DRAWING
10	STIFFENER_V.GTS	-	OUTER LAYER	SOLDERMASK STIF.
11	STIFFENER_V.GTL	COPPER STIFFENER	OUTER LAYER COPPER	LAYER STIFFENER
12	STIFFENER_V.GD1	-	DRILL SYMBOLS	DRILL DRAWING 2

TABLE B / APERTURE SIZES

SH NO.	FILE:	APERTURE TYPE	EMBEDDED D-CODE
4	M1S-100-01219.GTO	RS274-X STANDARD	YES
5	M1S-100-01219.GTS		YES
6	M1S-100-01219.GTL		YES
7	M1S-100-01219.GBL		YES
8	M1S-100-01219.GBS		YES
9	M1S-100-01219.GD1		YES
10	STIFFENER_V.GTS		YES
11	STIFFENER_V.GTL		YES
12	STIFFENER_V.GD1		YES

JPL DRAWING NO 10364578-C

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A	CAGE CODE		M1S-100-01219	REV C
	6PAL4			
SCALE:	1/1	SENSITIVE	SHEET 3	OF 12

TMT STRAIN GAUGE V CONNECTOR FLEX PWB
M1S-100-01219 REV [REDACTED] S/N [REDACTED]
WWW.TMT.ORG
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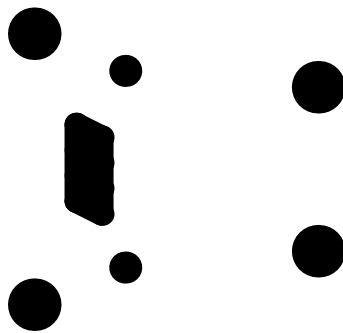
SILKSCREEN - SIDE A

tmt_strain_gauge_connector_V_flex.PcbDoc
Top Overlay
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA. 91190

JPL DRAWING NO 10364578-C

A	CAGE CODE		M1S-100-01219	REV	
	6PAL4			C	
SCALE:	1/1	SENSITIVE		SHEET	4 OF 12

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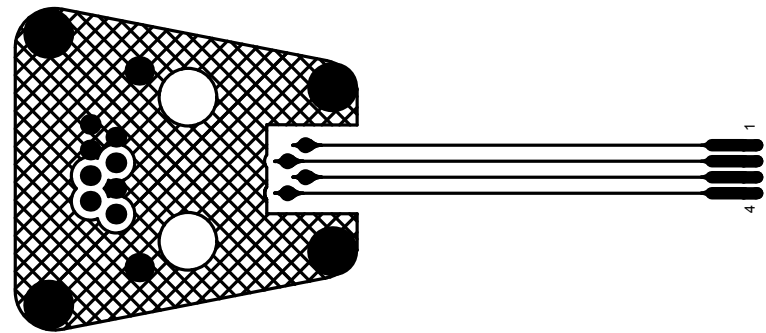
COVERLAY - SIDE A

tmt_strain_gauge_connector_V_flex.PcbDoc
Top Coverlay
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA. 91190

JPL DRAWING NO 10364578-C

A	CAGE CODE		M1S-100-01219	REV	
	6PAL4			C	
SCALE:	1/1	SENSITIVE		SHEET	5 OF 12

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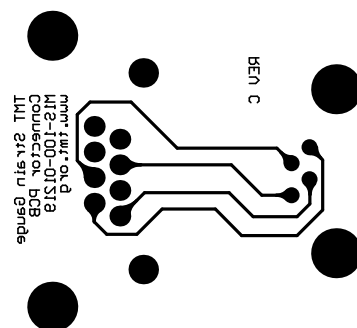
COPPER LAYER 1 - SIDE A

tmt_strain_gauge_connector_V_flex.PcbDoc
Top Layer
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA. 91190

JPL DRAWING NO 10364578-C

A	CAGE CODE		REV		
	6PAL4	M1S-100-01219	C		
SCALE:	1/1	SENSITIVE	SHEET	6 OF	12

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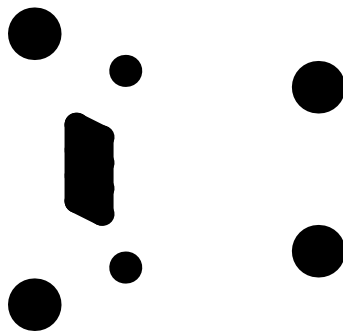
COPPER LAYER 2 - SIDE B

tmt_strain_gauge_connector_V_flex.PcbDoc
Bottom Layer
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA. 91190

JPL DRAWING NO 10364578-C

A	CAGE CODE		REV		
	6PAL4	M1S-100-01219	C		
SCALE:	1/1	SENSITIVE	SHEET	7	OF 12

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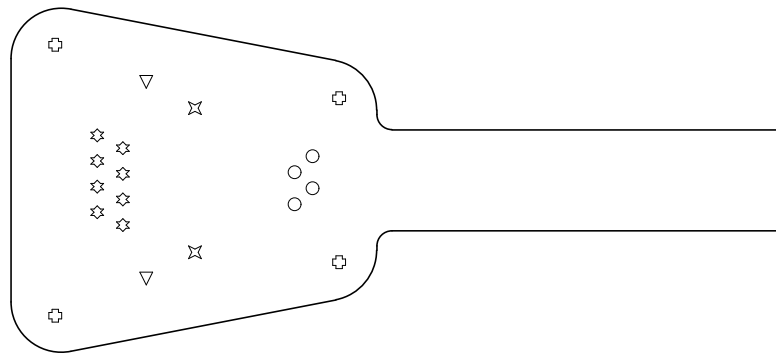
tmt_strain_gauge_connector_V_flex.PcbDoc
Bottom Coverlay
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA. 91190

COVERLAY - SIDE B

JPL DRAWING NO 10364578-C

A	CAGE CODE		M1S-100-01219	REV	
	6PAL4			C	
SCALE:	1/1	SENSITIVE		SHEET	8 OF 12

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tmt_strain_gauge_connector_V_flex.PcbDoc
Drill Drawing
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA. 91190

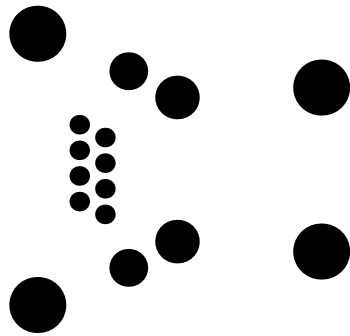
DRILL DRAWING

Symbol	Hit Count	Tool Size	Plated	Hole Type
○	4	20mil (0.508mm)	PTH	Round
☆	8	35mil (0.889mm)	PTH	Round
▽	2	62mil (1.575mm)	PTH	Round
⊕	4	94.488mil (2.4mm)	PTH	Round
⊗	2	126.496mil (3.213mm)	NPTH	Round
	20 Total			

JPL DRAWING NO 10364578-C

A	CAGE CODE 6PAL4	M1S-100-01219	REV C
SCALE:	1/1	SENSITIVE	SHEET 9 OF 12

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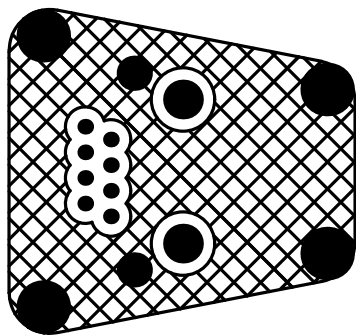
stiffener_v.PcbDoc
Top Solder
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA. 91190

STIFFENER, SOLDERMASK - SIDE A

JPL DRAWING NO 10364578-C

A	CAGE CODE		M1S-100-01219	REV	
	6PAL4			C	
SCALE:	1/1	SENSITIVE		SHEET 10	OF 12

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



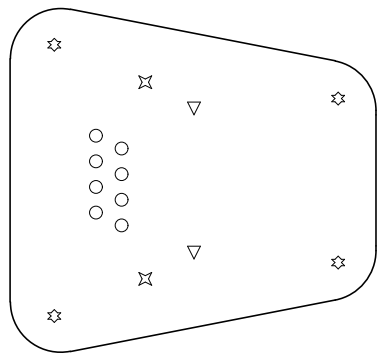
stiffener_v.PcbDoc
Top Layer
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA. 91190

STIFFENER, CIRCUIT - SIDE A

JPL DRAWING NO 10364578-C

A	CAGE CODE		M1S-100-01219	REV	
	6PAL4			C	
SCALE: 1/1		SENSITIVE		SHEET 11 OF 12	

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stiffener_v.PcbDoc
Drill Drawing
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA. 91190

STIFFENER DRILL DRAWING

Symbol	Hit Count	Tool Size	Plated	Hole Type
○	8	1.3mm (51.181mil)	NPTH	Round
✕	2	1.88mm (74mil)	NPTH	Round
☆	4	2.81mm (110.63mil)	NPTH	Round
▽	2	3.213mm (126.496mil)	NPTH	Round
16 Total				

JPL DRAWING NO 10364578-C

A	CAGE CODE		M1S-100-01219	REV C
	6PAL4			
SCALE:	1/1	SENSITIVE	SHEET 12 OF 12	

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