

NOTES: UNLESS OTHERWISE SPECIFIED.

1. FABRICATE PER IPC-6011 AND IPC-6012 CLASS 2.
2. MATERIAL:. 370HR
DIELECTRIC: FR4 PER IPC-4101.
COPPER: AS PER STACKUP.
U.L. RATING: 94V-0 MINIMUM
3. SURFACE FINISH: IMMERSION GOLD
4. SOLDER MASK MATERIAL SHALL MEET ALL THE REQUIREMENTS OF IPC-SM-840C.ACCEPTED TO HAVE GREEN OR RED COLOUR MASK BETWEEN THE FINE PITCH COMPONENTS PADS AND MATTE BLACK COLOR MASK ON REST OF THE BOARD.
5. SILK SCREEN LEGEND TO BE APPLIED PER LAYER STACKUP USING WHITE NON-CONDUCTIVE EPOXY INK.
6. 100% CONTINUITY TESTING USING DATABASE NETLIST SHALL BE PERFORMED, VENDOR TO IDENTIFY TEST PASSED IN SECONDARY SIDE.
7. VENDOR TO MARK DATE CODE AND LOGO IN ETCH OR IN LEGEND.
8. BOW AND TWIST SHALL NOT EXCEED 0.7% OF LONGEST SIDE .
9. DIELECTRICS AND LINEWIDTHS MAY BE ADJUSTED TO MEET THE IMPEDANCE REQUIREMENTS.
10. REQUEST FABRICATOR TO ADD TEAR DROPS IF NOT ADDED IN THE GERBERS.
11. COMPARE SUPPLIED IPC-D-356 NETLIST TO SUPPLIED GERBER DATA PRIOR TO FABRICATION.
- 12 CONTROLLED IMPEDANCE: SEE LAYER STACK AND IMPEDANCE CHART.
NOTE: THE IMPEDANCE CHARTS WILL REFLECT ALL POSSIBLE IMPEDANCE VALUES WHICH MAY BE REQUIRED IN THE DESIGN. NOT ALL VALUES WILL BE PRESENT ON EACH LAYER.

- 13.DELIVERY REQUIREMENTS:
A. ONE BARE BOARD (SOLDER SAMPLE) AND CROSS-SECTION SHALL BE INCLUDED WITH EACH BOARD LOT.
B. A TDR REPORT, ONE PER PANEL SHALL ACCOMPANY THE MATERIAL SHIPMENT.

14

SOLDERMASK MUST NOT EXCEED .001 THICKNESS FROM TOP OF COPPER FEATURE TO TOP OF SOLDERMASK IN THIS AREA ON TOP SIDE ONLY

15

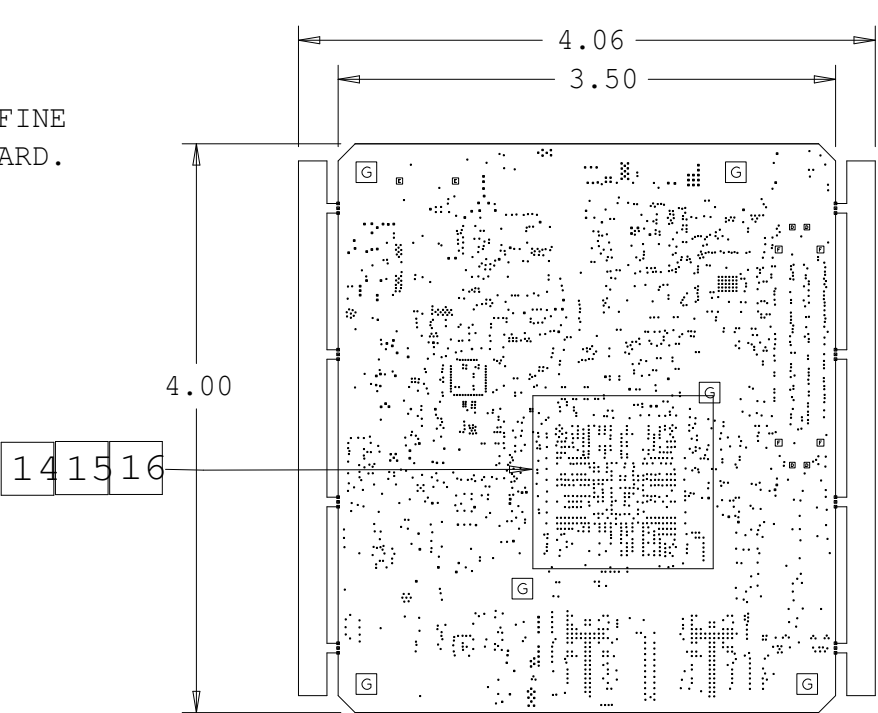
NO EXPOSED METAL ALLOWED ON TOP SIDE VIA PADS WHERE SHOWN

16

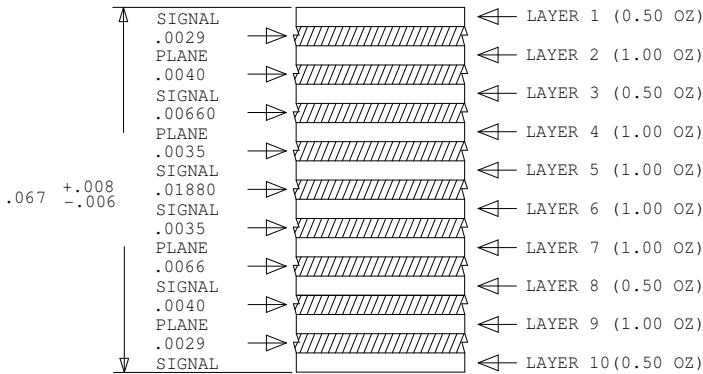
NO SOLDERMASK ALLOWED ON SMT PADS

17. ALL VIA-IN-PAD TO BE COMPLETELY FILLED, PLANARIZED SMOOTH AND PLATED OVER ON SURFACE. USE NON-CONDUCTIVE EPOXY FILL MATERIAL. VIA-IN-PAD MUST INCLUDE WRAP REQUIREMENTS AS PER IPC 6012B.

DRILL CHART: TOP to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
▣	8.0	+3.0/-3.0	PLATED	2348
▣	10.0	+3.0/-3.0	PLATED	75
▣	12.0	+3.0/-3.0	PLATED	99
▣	39.37	+3.0/-3.0	PLATED	4
▣	43.0	+3.0/-3.0	PLATED	2
▣	47.244	+3.0/-3.0	PLATED	4
▣	145.669	+3.0/-3.0	PLATED	6
▣	19.685	+3.0/-3.0	NON-PLATED	24



DATE:04-JULY-2020	PART NUMBER:TN-COMM-V1-REVB
CARD REF: TowerNode COMM V1 Rev-B	
FILM LAYER: FAB DRAWING	



LAYER STACKING
SCALE: NONE

SINGLE ENDED IMPEDANCE CHART			
LAYER(S)	FINISHED TRACE WIDTH (MILS)	REQUIRED IMPEDANCE	TOLERANCE
1 AND 10	4.70	50 OHMS	+/- 5%
	6.80	40 OHMS	+/- 5%
3 AND 8	4	50 OHMS	+/- 5%
	6.40	40 OHMS	+/- 5%
5 AND 6	3.90	50 OHMS	+/- 5%
	6.40	40 OHMS	+/- 5%

DIFFERENTIAL IMPEDANCE CHART				
LAYER(S)	FINISHED TRACE WIDTH (MILS)	TRACE SPACING (EDGE TO EDGE)	REQUIRED IMPEDANCE	TOLERANCE
1 AND 10	3.60	6.90	100 OHMS	+/- 10%
	4.40	4.60	85 OHMS	+/- 10%
	4.30	6.00	90 OHMS	+/- 10%
3 AND 8	3.449	6.10	100 OHMS	+/- 10%
	4.70	4.80	85 OHMS	+/- 10%
	4.20	5.80	90 OHMS	+/- 10%
5 AND 6	3.00	6.70	100 OHMS	+/- 10%
	4.60	5.40	85 OHMS	+/- 10%