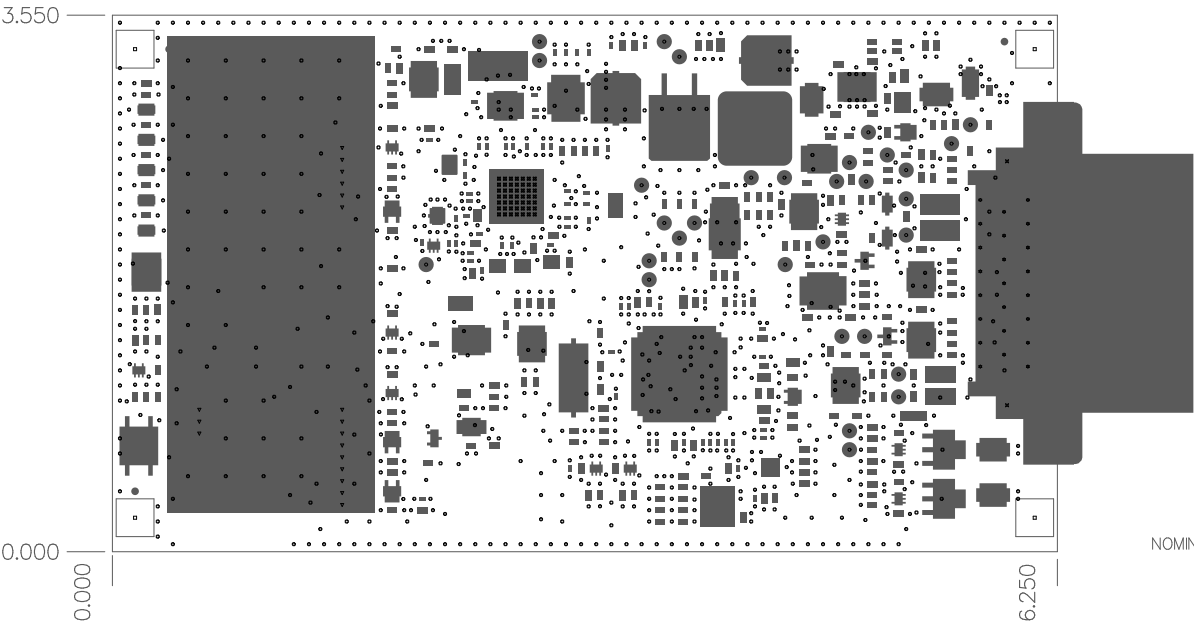
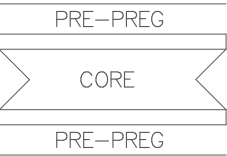


TENNANT CO. Q25078-PCB REV B FABRICATION DRAWING



Symbol	Count	Hole Size	Plated	Hole Tolerance (+)	Hole Tolerance (-)
⊗	49	12.00mil (0.305mm)	PTH		
⊕	1007	15.00mil (0.381mm)	PTH		
▽	18	35.00mil (0.889mm)	PTH	3.00mil (0.076mm)	3.00mil (0.076mm)
○	31	40.00mil (1.016mm)	PTH	3.00mil (0.076mm)	3.00mil (0.076mm)
☆	23	87.00mil (2.210mm)	PTH	3.00mil (0.076mm)	3.00mil (0.076mm)
⊗	2	112.00mil (2.845mm)	NPTH	2.00mil (0.051mm)	2.00mil (0.051mm)
□	4	140.00mil (3.556mm)	NPTH	2.00mil (0.051mm)	2.00mil (0.051mm)
1134 Total					



NOMINAL REQUIRED THICKNESS 0.062 +/- 0.007

FABRICATION NOTES:

1. MATERIAL SELECTION:  
UL RECOGNIZED ZPMV2 MIN. 130C FLAME CLASS V-0 OR BETTER.  
MINIMUM CTI RATING OF 175. .062 +/- 0.007 THICK MATERIAL PER IPC-4101  
SOLDERABLE SURFACES TO BE ENIG (ELECTROLESS NICKEL IMMERSION GOLD) FINISH  
ALL LAYERS TO BE 1 OZ STARTING COPPER.  
ALTERNATE MATERIAL REQUESTS MUST BE APPROVED BY TENNANT.
2. SOLDER RESIST: THE USE OF SOLDER RESIST COATING SHALL BE IN ACCORDANCE WITH THE  
REQUIREMENTS OF IPC-SM-840. ALL SOLDERABLE SURFACES ARE TO BE FREE OF SOLDER RESIST.  
USE LIQUID PHOTOMAGEABLE RESIST - COLOR: GREEN  
SOLDER RESIST BRIDGES 0.003" OR LESS MAY BE REMOVED.
3. SILKSCREEN: USE WHITE NON-CONDUCTIVE INK. ALL COMPONENT AND  
TESTPOINT LANDS ARE TO BE FREE OF INK.
4. MANUFACTURER'S IDENTIFICATION: ADD TO SILKSCREEN ON BOTTOM SIDE.
5. ELECTRICAL BARE BOARD TEST REQUIRED.
6. DRILL SIZES ARE FINISHED SIZE AFTER PLATING.
7. FABRICATE TO MEET EU RoHS DIRECTIVE.

8. PCB MUST HAVE UL 94V-0 AND CTI RATINGS MARKED ON ONE SIDE.
9. MAXIMUM WARP AND TWIST NOT TO EXCEED 0.010 PER LINEAR INCH.
10. MINIMUM ANNULAR RING: 0.002. MINIMUM PLATED WALL THICKNESS 0.001.
11. DIMENSION TOL: XX +/-0.010 | XXX +/-0.005.
12. FABRICATE IN ACCORDANCE WITH IPC-A-600 OR IPC-6012 LATEST REVISION CLASS 2.
13. COPPER THIEVING OF SIGNAL LAYERS IS NOT ALLOWED. SPACING TO ANY EXISTING  
BOARD FEATURE TO BE 0.060 MINIMUM.
14. IMPEDANCE REQUIREMENT: TOP LAYER - 50 OHMS  
DESIGN IS AT 18 MIL LINE WITH 15 COPPER PULLBACK.  
VENDOR TO SELECT PCB MATERIALS TO MEET THIS REQUIREMENT.
15. ALL 12 MIL DIAMETER HOLES TO BE PLUGGED FROM THE TOP SIDE  
(COMPONENT SIDE) WITH EITHER UV OR THERMALLY CURED PLUGGING MATERIAL.  
THE PLUGGING MATERIAL SHOULD NOT DRIP OUT OF THE BOTTOM SIDE OF THE PCB.