JMNG DRONE

STANDARDS ASSIGNMENT

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IPC – 2221

GENERIC STANDARD ON PRINTED CIRCUIT BOARDS (PCBs)

GENERAL REQUIREMENTS

- Electrical components such as capacitors, resistors, fuses, ICs, Transistors shall be assigned reference designators.
- Hole/Land Ratio: Land size at least 0.6 mm greater than the hole size
- Board Thickness: 0.8 mm to 2.4 mm
- Conductor Spacing ≤ 0.1 mm
- Footed standoffs shall have a minimum foot height of 0.25 mm. The lead should not extend more than 1.5 mm from the printed board surface.
- Marking and Legends: Minimum character height of 1.5mm and line width of 0.3mm.
- Heatsinks shall be designed to avoid the occurrence of moisture traps and to allow access for post-soldering cleaning. Plated through hole relief in the heat sink should be 2.5mm larger than the hole.
- Leads mounted in through holes: The lead should not extend more than 1.5 mm from the printed board surface.

PROJECT

Component designators:

The PCB design produced by the J.M.N.G Drone has 4 capacitors, two of them are decoupling capacitors placed closed to the main components. One Wi-Fi Lora32, and three resistors. And a LM317 regulator.

Hole/Land Ratio:

All the land size is 0.7mm greater than the hole size.

Board thickness:

The PCB board thickness is 1.2mm thick. That is higher than 0.8mm because it is a 4-layer PCB.

Conductor Spacing:

The smallest conductor spacing is 0.3mm.

Foot Stands:

The foot height does not have a 0.25mm height. However, the lead does not extend more than 1.5mm.

Marking Legends/ Labels:

The height of the labels on PCB is 1.4 mm < 1.5 mm.

Through holes heat sinks:

Since it is through holes components, it will not use heat sinks. But the spacing between conductors are enough to guarantee the safety of each component 2.5mm larger than the holes.

Mounted holes lead:

The J.M.N.G Drone PCB does have leads extending more than 1.5 mm.

REFERENCES:

http://www-eng.lbl.gov/~shuman/NEXT/CURRENT_DESIGN/TP/MATERIALS/IPC-2221A(L).pdf