

Aluminum & Metal-Core PCB RFQ Checklist

P&A International — engineering-led contract manufacturer + vetted partner-factory network. Includes single- and double-sided aluminum, thick-copper aluminum, copper-aluminum composite and copper-core thermal PCBs. The more of this you can share, the faster we return a proposed stack-up and quote.

1. What to send for a fast, accurate quote

- Base type: aluminum, copper-core, or copper-aluminum composite
- Single- or double-sided (double-sided = copper both sides of the metal core, with plated/embedded through-holes)
- Layer count if multilayer (e.g. 4-layer metal-core)
- Target thermal conductivity of the dielectric (W/mK) and the metal base
- Copper weight per layer (1oz, 2oz, thick copper up to 5oz+)
- Board thickness and metal-base thickness
- Surface finish (OSP, immersion gold/ENIG, lead-free HASL)
- Thermal-pad / copper-coin / embedded-hole requirements and pad spacing
- Dielectric breakdown / isolation voltage and any UL requirement
- Operating environment, power dissipation (W) and hot-spot temperature target
- Gerber / drawing, target cost, prototype quantity and annual volume

2. Metal-core PCB selection quick reference

Decision	Guidance
Base material	Aluminum for the best cost/weight and good thermal spread; copper-core or copper-aluminum composite for the highest thermal conductivity (up to ~400 W/mK) where aluminum is not enough.
Single vs double-sided	Single-sided for simple high-power LED/driver boards; double-sided (copper both sides of the core, with through-holes) for denser routing and components on both faces — a rare capability we offer.
Dielectric	Higher-W/mK dielectric lowers thermal resistance but watch isolation voltage; we match the dielectric to your power and creepage needs.
Copper weight	Thick copper (2–5oz+) carries high current and spreads heat for NEV / power-control boards.
Finish	OSP for cost, immersion gold/ENIG for fine-pitch and shelf life, lead-free HASL for rugged high-power assembly.

3. How we work

Send your spec → one dedicated engineer reviews it and confirms the stack-up → proposed design and indicative price (typically within 48 hours) → qualified samples with full test data in 10–15 working days → on approval we scale into volume through our vetted partner-factory network, where every supplier is ISO 9000 certified or better.

Send your enquiry and files to support@pa-international.com.au — or use the quote form on the Aluminum PCB page.