

Wrekin Circuits: PCB Capabilities Matrix

UK PCB manufacturer, Telford, Shropshire. ISO 9001:2015, JOSCAR, UL 796, Made in Britain. A general guide only: please contact our Technical Department on +44 (0)1952 670011 to discuss your requirements.

Capabilities at a glance

Parameter	Capability
Layer counts	Conventional/PTH 2 · Multilayer up to 40 · Flex 2 · Flex-rigid 2 + rigid · Multilayer flex-rigid up to 16
Board thickness	Conventional 0.05-4.8 mm · Multilayer 0.3-8.5 mm · Flex 0.05-0.4 mm · Flex-rigid 0.2-4.8 mm · ML flex-rigid 0.2-3.2 mm
Max circuit size	660 x 533 mm (26 x 21 in); manufacturing panel 711 x 584 mm (28 x 23 in)
Copper weights	0.25 oz (9 um) to 24 oz (840 um) heavy copper
Min track / gap	3 thou (0.076 mm) at 0.25 oz copper; 50 micron (2 thou) tracks by arrangement
Holes	Min finished hole 0.05 mm; max drilled hole 6.0 mm; positional tolerance from CAD data +/- 0.038 mm
Min annular ring	0.076 mm (3 thou)
Materials	Standard & high-performance FR4, polyimide, IMS, high-speed/low-loss laminates. Arlon, Isola, DuPont, Taconic, Rogers, Ventec. Extensive UK stock.
Solder resist	All types; 25 um over surface patterns; green, red, blue, black, clear, white, yellow; gloss, semi-gloss or matt; 0.05 mm pad clearance
Ident / notation	Screen print or ink jet; min line 0.1 mm; white, yellow, black, blue, red, purple, orange
Surface finishes	LF HASL, HASL 63/37, immersion silver, ENIG, ENEPIG, electrolytic Ni/Au, carbon ink
Profile	NC routing +/- 0.1 mm (special +/- 0.05 mm); scoring; depth-controlled routing/drilling; chamfers 20/30/35/45 degrees
Testing	100% electrical test to data; 3 x AOI (inner layers); 3 x ATG flying probe, 0-500 V, test area 520 x 400 mm; IPC-D-356 netlist preferred
Standards	BS EN ISO 9001:2015 (BSI), JOSCAR, UL 796, Cyber Essentials; IPC Class 2, Class 3 processes available

Design rules: minimum tracks and gaps by copper weight (thou, mm in brackets)

Copper	Min track	Min gap (inner)	Min gap (outer)
0.25 oz	3 (0.076)	3 (0.076)	3 (0.076)
0.50 oz	4 (0.102)	4 (0.102)	4 (0.102)
1.00 oz	5 (0.127)	5 (0.127)	5 (0.127)
2.00 oz	8 (0.203)	8 (0.203)	6 (0.152)
3.00 oz	12 (0.304)	10 (0.254)	8 (0.203)
4.00 oz	12 (0.304)	12 (0.304)	10 (0.254)
5.00 oz	12 (0.304)	14 (0.355)	12 (0.304)
6.00 oz	12 (0.304)	16 (0.406)	14 (0.355)
7.00 oz	12 (0.304)	18 (0.457)	16 (0.406)
8.00 oz	12 (0.304)	20 (0.508)	18 (0.457)
9.00 oz	12 (0.304)	22 (0.559)	20 (0.508)
10.00 oz	12 (0.304)	24 (0.610)	22 (0.559)
11.00 oz	12 (0.304)	26 (0.660)	24 (0.610)
12.00 oz	12 (0.304)	28 (0.711)	26 (0.660)

Copper weights above 12 oz (up to 24 oz): please discuss your design with our Technical Department.

Solderable finishes

Finish	Typical use	Thickness
Hot Air Solder Level (63/37)	General purpose	4-40 um

Finish	Typical use	Thickness
Lead Free HASL (SN100C)	General purpose	4-40 um
Immersion silver	Flat pad for fine pitch	1-1.2 um
ENIG (immersion gold)	Flat pad for fine pitch	0.08-0.12 um Au & 3-5 um Ni
ENEPIG	Wire bonding	0.03-0.07 um Au, 3-6 um Ni & 0.06-0.3 um Pd
Electrolytic Ni/Au	Edge connectors, key pads, contact pads	0.1-5.0 um Au, 1.0-10.0 um Ni
Carbon ink	Key pads	10-25 um

All finishes meet RoHS requirements other than HASL 63/37.

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