

500 Series



Copper Clad Boards

The 500 Series are copper clad laminates consisting of continuous woven glass cloth impregnated with epoxy resin. Compared to a 2 oz. copper clad board, 1oz. boards contain less copper making the etching process much quicker. They are made of FR4, which is a flame retardant version of G-10 material.

These boards are ideal for prototyping and small production runs. They require only an anti-etching pcb pen and copper etchant. They can easily be used by PCB manufacturers, design engineers, hobbyists, and students.

Features & Benefits

Comply with UL (file number E214381) and IPC-4101C/21

DICY (dicyandiamide) Cured System

Easy to cut, with no specialized equipment required

UV blocking

Available in 1 oz (1.37 mil, 35 µm) and ½ oz (0.67 mil, 17 µm) copper cladding

Available in 1/16" (1.60 mm) and 1/32" (0.80 mm) laminate thicknesses

Storage and Handling

Store between 18 and 27 °C in a dry area, away from sunlight (see SDS). Keep sealed in an air tight container, away from humidity.



Available Packaging

1 oz copper cladding, FR4 1/16" (1.6 mm), single sided

Part #	Metric	Imperial
503	76 x 127 mm	3" x 5"
506	101 x 152 mm	4" x 6"
515	203 x 254 mm	8" x 10"
521	304 x 304	12" x 12"

1 oz copper cladding, FR4 1/16" (1.6 mm), double sided

Part #	Metric	Imperial
540	76 x 127mm	3" x 5"
550	101 x 152 mm	6" x 6"
555	304 x 304 mm	12" x 12"

½ oz copper cladding, FR4 1/32" (0.8 mm), single sided

Part #	Metric	Imperial
588	152 x 228 mm	6" x 9"

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Properties

Moisture Absorption	0.25 %	IPC-TM-650 2.6.2.1
Flammability	94V-0	UL-94
Maximum Operating Temperature	130 °C	UL-94
Glass Transition Temperature (T_g)	140 °C	IPC-TM-650 2.4.25
CTE prior T_g CTE after T_g	50 ppm/°C 250 ppm/°C	IPC-TM-650 2.4.24
Total Expansion (50-260 °C), z-axis	3.75 %	IPC-TM-650 2.4.24
Time to Delamination @ T260 @ T288	20 min 2 min	IPC-TM-650 2.4.24.1
Thermal Degradation via TGA	340 °C	ASTM D 3850
Thermal Stress @ 288 °C	300 s	IPC-TM-650 2.4.13.1
Volume Resistivity, after moisture resistance	$5 \times 10^8 \text{ m}\Omega\cdot\text{cm}$	IPC-TM-650 2.5.17.1
Surface Resistivity, after moisture resistance	$5 \times 10^7 \text{ m}\Omega\cdot\text{cm}$	IPC-TM-650 2.5.17.1
Dielectric Constant @ 1 GHz Dissipation Factor @ 1 GHz	4.2 0.015	IPC-TM-650 2.5.5.9
Dielectric Strength	1 200–1 400 V/mil	IPC-TM-650 2.5.6.2
Dielectric Breakdown	60 kV	IPC-TM-650 2.5.6
Comparative Tracking Index (CTI)	Grade 3, 175–250 V	ASTM D 3638
Arc Resistance	240 s	IPC-TM-650 2.5.1
Peel Strength (1 oz) As received After thermal stress	10–12 lb/in 9–12 lb/in	IPC-TM-650 2.4.8
Flexural Strength Warp Fill	600 MPa 500 MPa	IPC-TM-650 2.4.4

Note: Data shown are typical values for reference only.

Disclaimer: This information is believed to be accurate. It is intended for professional end-users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.