PJY245A is based on JIUYAO's established and protected lamination technology. It is continuously laminated using proprietary blends of polypropylene resins.

Typical Specification Values

Property	*IPC-TM 650 or ASTM*	*Units*	*Value*	*Condition / Remarks*
Dielectric Constant	IPC 2.5.5.5	---	2.45 ±0.05	@10 GHz 23 °C
Dissipation Factor	IPC 2.5.5.5	---	0.0008	
Peel Strength	IPC 2.4.8	N/mm	0.7-1.1	
Moisture Absorption	IPC 2.6.2.1	wt. %	<0.03	
Volume Resistivity	IPC 2.5.17.1	MΩ - cm	10^7	
Surface Resistivity	IPC 2.5.17.1	MΩ - cm	10^7	
Dielectric Strength	IPC 2.5.6	kV/mm	19.7	
Flexural Strength, min	IPC 2.4.4	GPa	4	
Thermal Conductivity	ASTM C518	W/m-K	0.15	
x-y-z CTE, (-45 to 95 °C)	IPC 2.4.41	Ppm/°C	80	
Flammability	UL-94	---	HB1	
Recommended operational temperature range		°C	-45 to +95	For operation outside this temperature range please ask your technical contact.
Highest Processing Temperature	Vendor processing recommendation	°C	+90	Drying oven temperature should be checked.
Heat Deflection Temperature	ASTM D 648	°C	95	Compound specification
Melting Temperature	Base resin spec	°C	165	
After Etch Substrate Contraction, max.	Vendor recommended compensation	%	0.30 MD 0.25 TD	Elevating the processing temperature to 95-100 °C, the contraction may ramp up to 0.6% MD and 0.35% TD
RoHS and Lead Free compatibility		---	compatible	

Jiu Yao Electronic Science & Technology (Jiangsu) Co., Ltd.
Add: Industrial Zone, East Shuanggou Town, Hongze District, Huai'an city, Jiangsu Province, China
Tel: +86 137 7512 6941 info@ptfe-pcb-laminate.com

Electro Deposited Copper Foil Specifications

Nominal thickness, µm	***Area weight, g/m2***	***Tensile strength, N/mm2***	***Elongation, %***	***Resistivity at 20 °C, Ohm g/m2***
18± 2	157 ± 15	> 245	> 3	< 0,162

Feature	***Unit***	***Gauge***	***IPC***	
		18µ	***IPC-4562***	***IPC-MF-650***
Shiny side roughness, Ra	µ	0,2-0,4	3.5.6	2.2.17
Matt side roughness, Rz	µ	4-5	3.4.5	2.2.17
Tensile strength, room temperature	MPa,	> 276	3.5.1	2.4.18
Elongation, room temperature	%	> 10	3.5.3	2.4.18
Solderability	meets requirements of IPC-4562		3.6.3	2.4.12

Panel Thickness (excluding copper foil)

- Double Sided (DS) - **760 µ** / 0.030" with a tolerance of ± 25 µ.

Panel Dimensions

- Standard foil cladding dimensions 610 mm * 1220 mm
- The overall panel may have unclad shoulders bringing the total width slightly above the nominal 610mm
- **Panel length may be increased upon arrangement** to maximize the yield of massive customer projects.

PJY245A-30mil-H/H

PCB Processing, Assembly and Soldering recommendations

PCB Processing

- Standard FR4 techniques may be used.
- Processing is similar to FR4, with a limitation that the laminate should not be exposed to processing temperatures above 60 degrees C and drying oven air should not exceed 90 degrees C
- Laminate withstands conveyerized etching well.
- Dry film lamination should be carried out with hot roll continuous press. Hot plate press **should not be used unconditionally**.
- The roll temperatures should not exceed 118 deg C and speed be not less than 20 inch/min.
- Chemical immersion tin coat or organic solderability preservative (OSP) are recommended.
- Hot air leveling (HAL) or hot tin tub immersion **should unconditionally not be used**.

After etch warping

The laminate is based on unreinforced polymer system, which manifests minor contraction after etching the copper cladding off.
In case of completely symmetrical etching of both sides, the substrate will remain flat, but if only one side is etched off, while the other side remains intact, some bow may occur. With small traces left on both sides some warping might be seen, the substrate is semi flexible thus any bow or warping, if present, can be corrected during assembly.

Soldering

Generally soldering of thermoplastic substrate laminates (PTFE, PET, PE, PP, PC, PPO, etc.) differs fromFR4 and similar thermo set materials because of the requirement to control the amount of heat transmitted onto the copper off the soldering iron bit.

Manual soldering may be carried out with any ROHS compliant solder.

The soldering iron should be preheated to 330-350 °C, and the temperature checked. Limiting the warming up time of the solder pad is crucial and requires close operator attention. It is important not to exceed the minimum interval to provide molten solder wetting of the copper pad.
Excessive heat will lead to an unreliable joint and may even cause pad delamination.

Jiu Yao Electronic Science & Technology (Jiangsu) Co., Ltd.
Add: Industrial Zone, East Shuanggou Town, Hongze District, Huai'an city, Jiangsu Province, China
Tel: +86 137 7512 6941 info@ptfe-pcb-laminate.com

PJY245A-30mil-H/H

Our experience has been that after relatively minor operator training (a few minutes) reliable solder joints are achieved in production environments.

Some care is recommended to deal with rigid and/or semi-rigid cable ground soldering that is complicated by prolonged massive solder application.

JIUYAO recommends discussing the cable ground soldering area PCB design with your Technical Contact. It is important to prevent excessive heat that may cause substrate warping. The simplest advice would be to interrupt solid copper solder application area with etched off dotted circle to limit the heat dissipation along the foil surface.

Plated through holes

Over the years of applications our customers checked on their own initiative plated through hole capability, though we would not possess any knowledge of our own.
Their reports may be summarized with the following conclusions:

- Palladium Chloride is the recommended seed metal conductivity carrier
- Polypropylene substrate surface would best be cured by Potassium Permanganate
- The curing bath would best perform at 60 degrees C
- Adhesion of the plated Cu to the hole wall presented similar or better values than on case of PTFE substrate.

Additional technical support

We are happy to provide detailed advice and support to engineering personnel engaged in laminate application throughout the design and production phases.

Jiu Yao Electronic Science & Technology (Jiangsu) Co., Ltd.
Add: Industrial Zone, East Shuanggou Town, Hongze District, Huai'an city, Jiangsu Province, China
Tel: +86 137 7512 6941 info@ptfe-pcb-laminate.com