



NAN YA PLASTICS CORPORATION  
ELECTRONIC MATERIALS DIVISION.  
COPPER CLAD LAMINATE DEPARTMENT

Glass cloth base epoxy resin  
flame retardant copper clad laminate

NO. 201, TUNG HWA N. ROAD,  
TAIPEI, TAIWAN, ROC

## UV BLOCK FR-4-86

### FEATURES

- High luminance of epoxy contrast with copper for laser type A.O.I.
- UV solder mask may be applied simultaneously to increase yields.
- High performance epoxy blended to achieve higher heat resistance than that of FR-4-86
- Thickness 0.8mm capability.
- Other properties are similar to FR-4-86.

### PERFORMANCE LIST

Characteristics	Unit	Conditioning	Typical Values	SPEC	
Volume resistivity	MΩ-cm	C-96/35/90	5 x 10 <sup>8</sup> ~ 5 x 10 <sup>9</sup>	10 <sup>6</sup> ↑	
Surface resistivity	MΩ	C-96/35/90	5 x 10 <sup>6</sup> ~ 5 x 10 <sup>7</sup>	10 <sup>4</sup> ↑	
Permittivity 1MHZ	-	C-24/23/50	4.2-4.8	5.4 ↓	
Loss Tangent 1MHZ	-	C-24/23/50	0.010-0.016	0.035 ↓	
Arc resistance	SEC	D-48/50+D-0.5/23	120 ↑	60 ↑	
Dielectric breakdown	KV	D-48/50	60 ↑	40 ↑	
Moisture absorption	%	D-24/23	0.05-0.10	0.35 ↓	
Flammability	-	C-24/23/50+E-24/125	94V0	94V0	
Peel strength 1oz	lb/in	288°C x 10" solder floating	10-14	8 ↑	
Thermal stress	SEC	288°C solder dipping	200 ↑	10 ↑	
Pressure cooker (2 atm 120°C)	1/2 hr	SEC	288°C dipping	230	N/A
	1 hr	SEC	288°C dipping	220	N/A
	2 hr	SEC	288°C dipping	150	N/A
Flexural strength	LW	psi	A	70000-80000	60000 ↑
	CW	psi	A	60000-65000	50000 ↑
Dimensional stability X-Y axis	%	E-0.5/170	0.005-0.030	0.050 ↓	
Coefficient of thermal expansion					
Z-axis before Tg	in/in/°C	TMA	5 x 10 <sup>-5</sup>	N/A	
Z-axis after Tg	in/in/°C	TMA	25 x 10 <sup>-5</sup>		
Glass transition temp	°C	DSC	140 ± 5	N/A	

Data shown are nominal values for reference only.

**NOTE:**

The average value in the table refers to samples of .062" 1/1.