



# SHANGHAI NANYA COPPER CLAD LAMINATE CO.,LTD

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## LEAD-FREE copper clad laminate quality test report

No.	Test Items	Unit	1501/9501 Lead Free Laminate
1	Surface Resistance ( MΩ )	MΩ	2.24×10 <sup>8</sup>
2	Volume Resistivity ( MΩ-cm )	MΩ.CM	3.44×10 <sup>8</sup>
3	Dielectric Breakdown ( kV )	kV	54
4	Arc Resistivity (sec)	Sec	138
5	CTI (V)	V	>200
6	Dielectric Constant ( 1MHz )	/	4.6
7	Dissipation Factor ( 1MHz )	/	0.017
8	Tg ( °C /DSC )	°C	154.6/155.5
9	CTE@Z-axis ( ppm/°C ) 50~260°C	ppm	160
10	CTE@Z-axis ( ppm/°C ) α1 : 50~Tg°C	ppm	48
11	CTE@Z-axis ( ppm/°C ) α2 : Tg~260°C	ppm	242
12	Temp. Decomposition ( °C/TGA 5% wt loss )	°C	341/356 ( Baked at 190°C/1 hr )
13	Moisture Absorption (%)	%	0.18(after PCT/0.5hr)
14	Flammability	/	94V-0
15	Time to Delamination (min/TMA)	min	
	T260		60
	T288		29
	T300		11.8
	T320		2.5
16	Flexural Strength (Mpa) warp fill	Mpa	532 456
17	Dimensional Stability (ppm) (105°C/ 4hr)	ppm	
	warp fill		61.23 80.44
18	Hydrothermal Resistance (min) (PCT/1hr/solder dip288°C)	min	>5

