Teflon woven glass fabric copper-clad laminates

This product is formulated with varnished glass cloth, prepreg and Teflon resin through scientific formulation and strict technology procedures. It takes some advantages over F4B series in electrical performance, including wider range of dielectric constant, low dielectric loss angle tangent, increased resistance and more stable in performance.

Technical Specifications

Appearance	Meet the specification requirements for microwave PCB baseplate specified in National and Military Standards.				
Types	F4BM220	F4BM255	F4BM265	F4BM300	F4BM350
Permittivity	2.20	2.55	2.65	3.0	3.50
Dimensions (mm)	300×250	350×380	440×550	500×500	460×610
	600×500	840×840	840×1200	1500×1000	
	For special dimensions, customized lamination is available.				

Thickness and tolerance(mm)	Plate thickness	0.25	0.5	0.8	1.0	
	Tolerance	±0.02 ~ ±0.04				
	Plate thickness	1.5	2.0	3.0	4.0	5.0

	Tolerance	±0.05 ~ ±0.07			
	Plate thickness includes the copper thickness. For special dimensions, customized lamination is available.				
Mechanical properties	Angularity	Plate thickness（mm）	Maximum angularity mm/mm		
			Original board	Single-sided board	Double-sided board
		0.25 ~ 0.5	0.03	0.05	0.025
		0.8 ~ 1.0	0.025	0.03	0.020
		1.5 ~ 2.0	0.020	0.025	0.015
		3.0 ~ 5.0	0.015	0.020	0.010
	Cutting/ punching property	For the plate of < 1mm, no burrs after cutting, minimum space between two punching holes is 0.55mm, no separation. For the plate of≥1mm, no burrs after cutting, minimum space between two punching holes is 1.10mm, no separation.			
	Peel strength	In normal state:≥18N/cm; No bubbling, no separation and peel strength ≥15 N/cm when in the environment of constant humidity and temperature and kept in the melting solder of 260℃±2℃ for 20 seconds.			

Chemical properties	According to different properties of baseplates, the chemical etching method for PCB can be used for the circuit processing, the dielectric properties of materials are not changed and the holes can be metallized.

Electrical properties	Names	Test conditions	Unit	Specifications
	Gravity	Normal state	g/cm3	2.2 ~ 2.3
	Water absorption rate	Dip in distilled water of 20±2℃ for 24 hours.	%	≤0.02
	Operating temperature	high-low temperature chamber	℃	-50 ~ +260
	Thermal conductivity coefficient		Kcal /m .h.℃	0.8
	Coefficient of thermal expansion	Temperature rise of 96℃ per hour	Coefficient of thermal expansion×1	≤5×10-5
	Shrinkage factor	Two hours in boiling water	%	0.0002

	Surface insulation resistance	500V DC	Normal state	M.Ω	≥1×104
			Constant humidity and temperature		≥1×103
	volume resistance	Normal state		MΩ.cm	≥1×106
		Constant humidity and temperature			≥1×105
	Pin resistance	500V DC	Normal state	MΩ	≥1×105
			Constant humidity and temperature		≥1×103
	Surface dielectric strength	Normal state		δ=1mm(kV/mm)	≥1.2
		Constant humidity and temperature			≥1.1
	Permittivity	10GHZ		εr	2. 2.20

				2. 2.55 2.65 (±2%) 2. 3.0 3.5
	Dielectric loss angle tangent	10GHZ	tgδ	≤7×10-4