Teflon woven glass fabric copper-clad laminates with high permittivity F4BME-1/2

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 and the passive intermodualtion can be enhanced.

Technical Specifications

Appearance	Meet the specification requirements for microwave PCB baseplate specified in National and Military Standards.					
Types	F_4BME217	F_4BME220	F_4BME245	F_4BME255	F_4BME265	F_4BME275
	F_4BME285	F_4BME295	F_4BME300	F_4BME320	F_4BME338	F_4BME350
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.					

Electrical properties

Names	Test conditions		Unit	Specifications
Gravity	Normal state		g/cm^3	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	$\leq 5\times10^{-5}$
Shrinkage factor	Two hours in boiling water		%	0.0002
Surface insulation resistance	500V DC	Normal state	M.Ω	$\geq 1\times10^{4}$
		Constant humidity and temperature		$\geq 1\times10^{3}$
volume resistance	Normal state		MΩ.cm	$\geq 1\times10^{6}$
	Constant humidity and temperature			$\geq 1\times10^{5}$
Pin resistance	500V DC	Normal state	MΩ	$\geq 1\times10^{5}$
		Constant humidity and		$\geq 1\times10^{3}$

		temperature		
Surface dielectric strength	Normal state		δ=1mm(kV/mm)	≥1.2
	Constant humidity and temperature			≥1.1
Permittivity	10GHz		εr	2.17,2.20,2.45, 2.55,2.65,2.75,（±2%） 2.85,2.95,3.00, 3.3.20,3.38,3.50.
Dielectric loss angle tangent	10GHz		tgδ	$\leq 7\times10^{-4}$
PIMD	2.5GHz		dbc	≤-120

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		Maximum angularity mm/mm			
		Plate thickness（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 metalized.					