

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

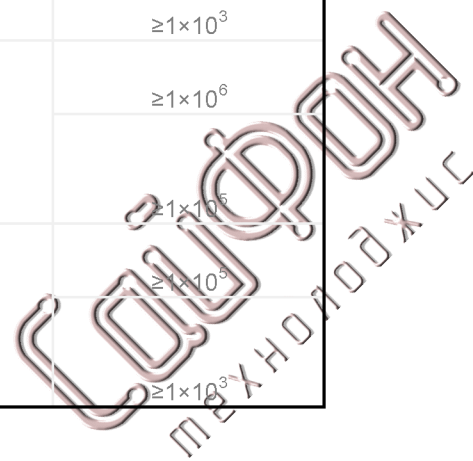
This product is formulated with varnished glass cloth, prepreg and Teflon resin through scientific formulation and strict technology procedures. It takes some advantages over F4B series in electrical performance and the passive intermodulation can be enhanced.

Technical Specifications

Appearance	Meet the specification requirements for microwave PCB baseplate specified in National and Military Standards.					
Types	F ₄ BME217	F ₄ BME220	F ₄ BME245	F ₄ BME255	F ₄ BME265	F ₄ BME275
	F ₄ BME285	F ₄ BME295	F ₄ BME300	F ₄ BME320	F ₄ BME338	F ₄ BME350
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°C for 24 hours.		%	≤0.02
Operating temperature	high-low temperature chamber		°C	-50~+260
Thermal conductivity coefficient			Kcal /m . h.°C	0.8
Coefficient of thermal expansion	Temperature rise of 96°C 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	≥1×10 ⁴
		Constant humidity and temperature		≥1×10 ³
volume resistance	Normal state		MΩ.cm	≥1×10 ⁶
	Constant humidity and temperature			≥1×10 ⁶
Pin resistance	500V DC	Normal state	MΩ	≥1×10 ³
		Constant humidity and		≥1×10 ³



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

Thickness and tolerance (mm)	Plate thickness	0.25	0.5	0.8	1.0	
	Tolerance	$\pm 0.02 \sim \pm 0.04$				
	Plate thickness	1.5	2.0	3.0	4.0	5.0
	Tolerance	$\pm 0.05 \sim \pm 0.07$				
	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 $< 1\text{mm}$, no burrs after cutting, minimum space between two punching holes is 0.55mm, no separation. For the plate of $\geq 1\text{mm}$, no burrs after cutting, minimum space between two punching holes is 1.10mm, no separation.					
Peel strength	In normal state: $\geq 18\text{N/cm}$; No bubbling, no separation and peel strength $\geq 15\text{N/cm}$ when in the environment of constant humidity and temperature and kept in the melting solder of $260^\circ\text{C} \pm 2^\circ\text{C}$ for 20 seconds.					
Chemical properties	According to different properties of baseplates, the chemical etching method for PCB can be $\geq 15\text{N/cm}$ used for the circuit processing, the dielectric properties of materials are not changed and the holes can be metalized.					

