

Wide dielectric constant of PTFE fiber glass reinforced copper clad laminate

features:

- Extremely low loss, low tolerances and excellent high frequency performance
- Lower the dielectric constant of a wide
- Maintaining the stability of PTFE at different frequencies
- Electrical performance
- Reasonable commercial cost
- Structure
- Excellent machining performance
- Fast bulk delivery

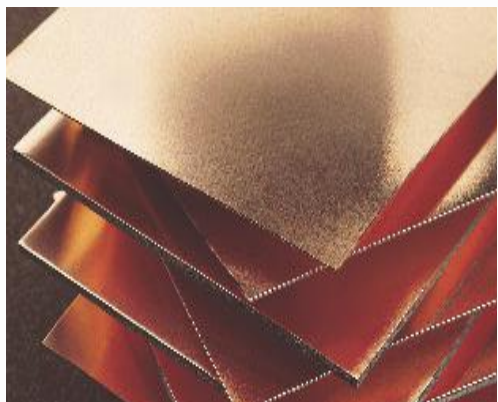
Typical Applications: :

- Military radar, missile guidance systems
- Low loss base station antenna
- Filters, couplers, low noise amplifier
- Digital broadcasting antenna

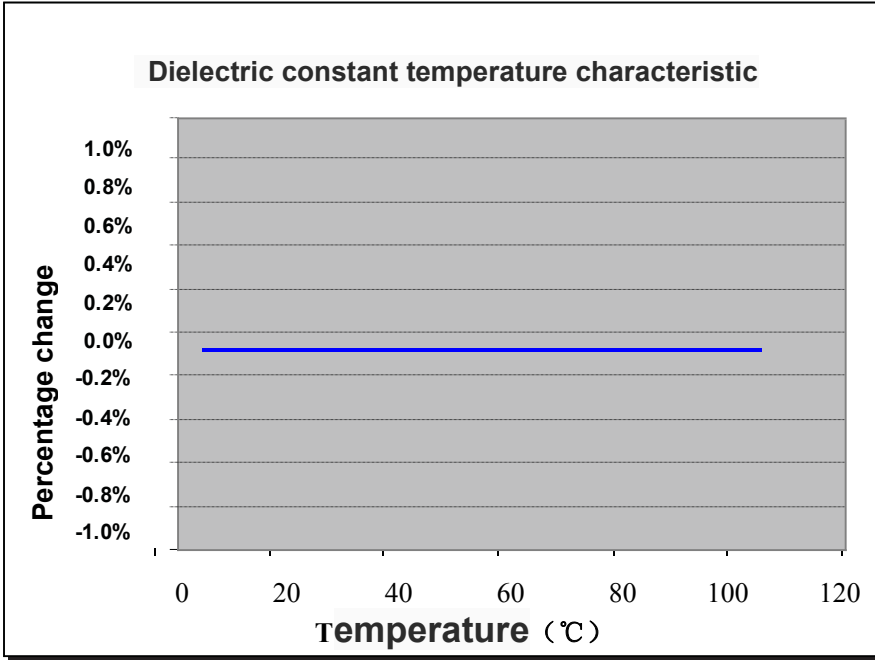
ZYF-233D series are the theme of a PTFE resin, imported glass fiber reinforced materials, designed specifically for the printed circuit board composite high-frequency microwave materials, performance close to the traditional substrate; such materials combination of PTFE outstanding characteristics of the physical, chemical and electrical properties and low dielectric loss, enhanced with high quality imported glass fiber cloth composite;formed the wide dielectric constant of Teflon glass fiber substrate , to provide the lowest dielectric constant and loss factor for the circuit board, wider optional dielectric constant ,excellent dimensional stability and superior electrical performance.

ZYF-233Dseries of quality glass fiber to enhance the stability of the plate, and to ensure that dielectric constant and dielectric loss at the highest frequency stability and low dielectric loss, it is the ideal board of various microwave. Using high quality imported glass fiber reinforced to ensure the stability of the thermal expansion coefficient, improve the reliability of plated through holes.

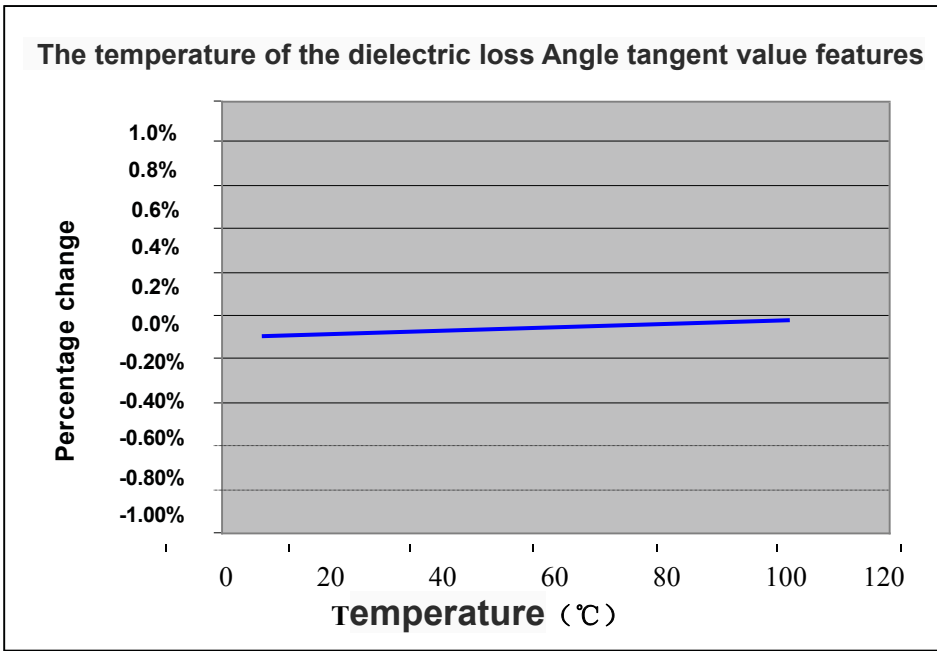
ZYF-233D series can provide thickness ranges 0.127-6.0mm,a dielectric constant of 2.14-2.65; standard board sizes 36 "X48", 40 "X48", 42 "X48", the other to follow customer demand; two-sided CCL for 1/2 ounce,one ounce, two ounces, according to specific customer needs.



Product temperature characteristic:

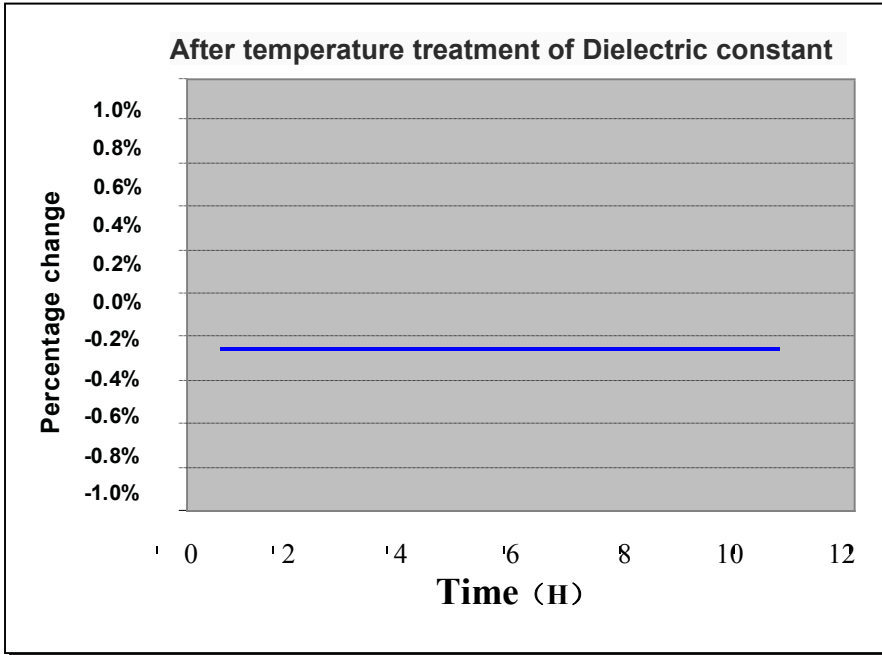


ZYF-233D teflon glass fiber cloth copper clad laminate in 10 GHz frequency band of the dielectric constant of temperature characteristic and temperature characteristic of dielectric loss Angle is, as shown on the left, the results show that under different frequencies, Teflon glass fiber cloth laminated sheet under the condition of high frequency, along with the change of processing temperature, the dielectric constant and dielectric loss tangent change is very small.

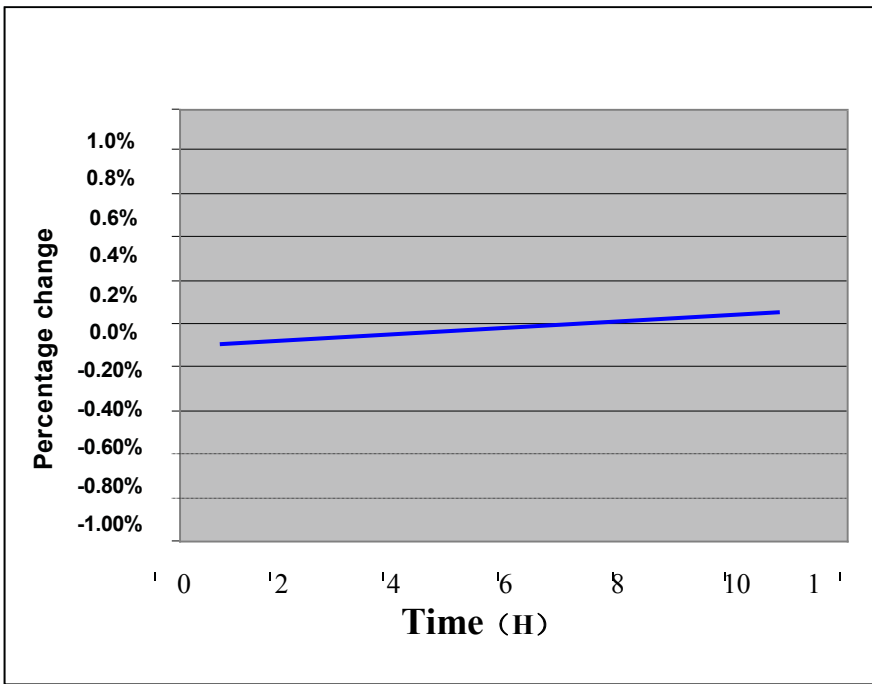


Test method: choose split cylinder cavity, the cavity body formed by around half a cylindrical cavity body; Placed between two and a half cylinder, and the sample of the cylindrical cavity body and a half is fixed, the other one and a half cylindrical cavity body can be adjusted according to the thickness of the sample interval between the two and a half cylindrical cavity body. In the cylindrical cavity body, electric field direction parallel to the sample section, perpendicular to the axis of the cylindrical cavity body. In order to get the highest sensitivity, samples need to maximize placed in an electric field, according to the in the before and after change the resonance frequency and quality factor Q to measure the software and related samples to determine the dielectric constant and dielectric loss tangent values. Using this method, temperature changing plate processing time, repeated tests

❖ Product temperature characteristic:

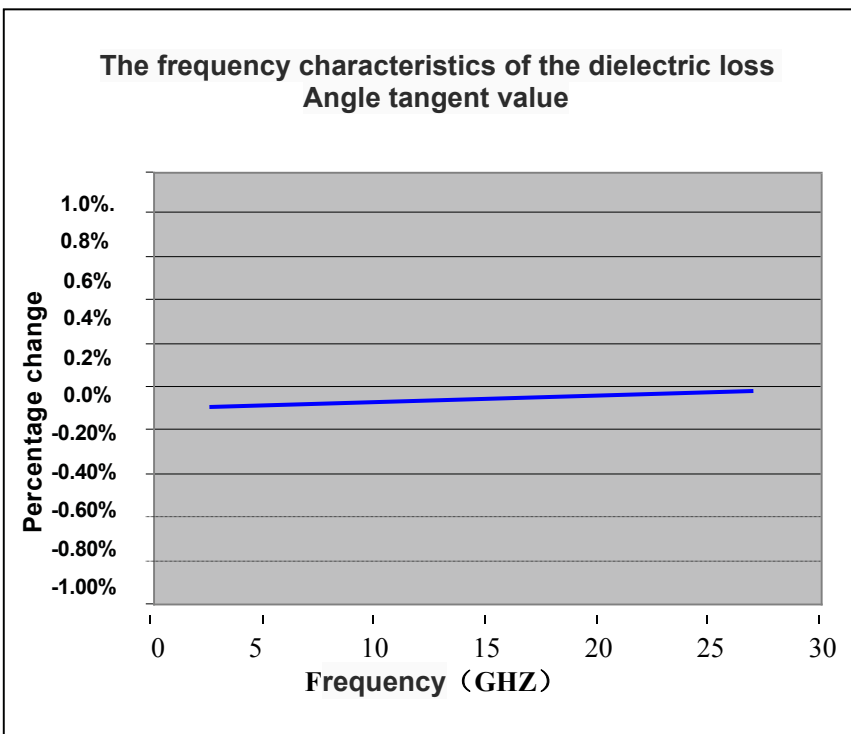
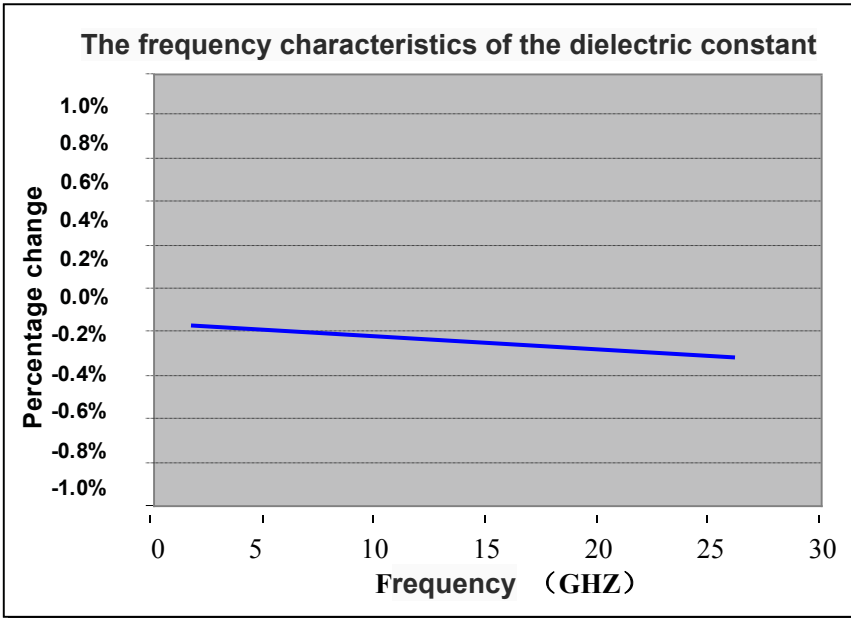


ZYF-233D teflon glass fiber cloth copper clad laminate after 60 °C, relative humidity 90%, in 10 GHZ frequency band, test the characteristics of dielectric constant and dielectric loss Angle is as shown on the left, the results show that under different processing time after, under the condition of high frequency PTFE glass fiber cloth laminated sheet, its dielectric constant and dielectric loss tangent change is very small.



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Product frequency characteristic:



ZYF-233D teflon glass fiber cloth copper clad laminate GHz frequency band of the frequency characteristics of the dielectric constant and dielectric loss Angle is frequency characteristics, as shown on the left, the results show that, under different frequency, teflon glass fiber cloth laminated sheet under the condition of high frequency, the dielectric constant and dielectric loss tangent is very small, and change is very small.

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Product Features:

ZYF233D wide dielectric constant of glass fiber reinforced PTFE laminates

feature	Test Methods	Condition	ZYF233D
Dielectric Constant @ 10 GHz	IPC TM-650 2.5.5.5	C23/50	2.33
Dielectric Constant @ 1 MHz	IPC TM-650 2.5.5.3	C23/50	2.33
Dielectric loss tangent @ 10 GHz	IPC TM-650 2.5.5.5	C23/50	0.0013
Dielectric loss tangent @ 1 MHz	IPC TM-650 2.5.5.3	C23/50	0.0009
Thermal conductivity (ppm/° C)	IPC TM-650 2.5.5.5 Adapted	-10°C to +140°C	-161
Peel strength (lbs.per inch)	IPC TM-650 2.4.8	After Thermal Stress	14
Volume resistivity (MΩ-cm)	IPC TM-650 2.5.17.1	C96/35/90	1.5 x 10 ⁹
Surface resistivity (MΩ)	IPC TM-650 2.5.17.1	C96/35/90	3.4 x 10 ⁷
Arc resistance (Second)	ASTM D-495	D48/50	>180
Tensile modules (X,Y) (kpsi)	ASTM D-638	A, 23°C	485, 346
Tensile strengths (X,Y) (kpsi)	ASTM D-882	A, 23°C	14.9, 11.2
Compression modules (kpsi)	ASTM D-695	A, 23°C	327
Flexural modules (kpsi)	ASTM D-790	A, 23°C	437
Dielectric breakdown voltage (kV)	ASTM D-149	D48/50	>45
Density (g/cm³)	ASTM D-792 Method A	A, 23°C	2.26
Water absorption(%)	MIL-S-13949H 3.7.7	E1/105 + D24/23	0.02
	IPC TM-650 2.6.2.2		
CTE(ppm/°C)	IPC TM-650 2.4.24 Mettler 3000 Thermomechanical Analyzer	0° C to 100° C	X Axis
			Y Axis
			Z Axis
Thermal conductivity (W/mK)	ASTM E-1225	100°C	0.257
Flame resistance UL File E 80166	UL 94 Vertical Burn IPC TM-650 2.3.10	C48/23/50, E24/125	Meets requirements of UL94-V0

