FSD108T

Professional low Dk/Df high frequency and reliability plastic filler material, high temperature resistance, special plastic filler laminate, with excellent dielectric, constitute high frequency, microwave laminate.

KeyFeatures==========

FSD108T laminate is made of plastic composite and made of special glass fiber. The Dk of this series of laminates reaches 1.08±0.03 (the "X" series can be modified according to customer requirements). Special plastic air ball application, laminated copper clad laminate with high density molecular structure. PTFE has excellent physical, chemical, electronic, heat resistance, rigidity and other properties. Low Dk, Df and low CTE, with good performance stability in low frequency and high frequency tests. Suitable for mechanical operation, better electronic performance and dimensional stability. It is an ideal material for the manufacture of radio and antenna products with high frequency and high speed requirements.

FSD108T meets the requirements of lead-free process and can be constructed on a factory built with ordinary FR4, and only needs to be fine-tuned when electroplating through holes. This series of laminates have very good Z-axis CTE performance, mainly to improve the reliability of plated through holes during SMT reflow, excellent moisture resistance, stability in hot environments, low loss, and signal during high-frequency transmission Integrity and anti-CAF performance. It is the best material for communication system products.

StandardAvailability==========

Thickness: [1.0mm] to [30.0mm]

size: 36″ *48″ 、24″ *36″ 、18″ *24″ 、12″ *18″ , and other size can be provided according to customer special requirement.

copper foil types: 1/2OZ[18um]、1OZ[35um] 、2OZ[70um]; it can be customerized.Copper foil type is RTF

Performance And Processing Advantages:

Low loss/Low tolerances with better high frequency performance

Signal integrity at different frequency

Low dielectric constant

Excellent, stable and flat Dk/Df

PCB processing as well as FR-4

Stable high-frequency intermodulation, meet customer special requirement.

Excellent dimension stability, thickness uniformity and flatness

Good reliability for plated through hole

Anti-CAF

Very low Z-axis CTE

Excellent rigidity

Cross alternates requirement≤-160dbc

Typical Applications:

Filters, couplers, combiners low noise amplifier

Military radar and missile-guidance systems, positioning systems

BDS series

High speed Data transmission systems/Automatic bump-shielded system of the automobile

Aviation/Marine GPS equipment applicaiton

GPS microwave modules

Security alarm device

Digital broadcast antenna

Base station radio antenna

Industrial Approval:

UL 94 V-0

IPC-4103 Spec /for Referance

RoHS Compliant

FSD Laminate: FSD108T

IPC-4103 Spec 01/02/05 for Reference

TYPICAL PROPERTIES FOR FSD108T LAMINATES

Property	Thickness<0.50 mm [0.0197 in]		Thickness≧0.50 mm [0.0197 in]		Units	Test Method
	Typical Value	Spec	Typical Value	Spec	Metric (English)	IPC-TM-650 (or as noted)
Peel Strength, minimum A. Low profile copper foil and very low profile copper foil - all copper weights > 17μm [0.669 mil] B. Standard profile copper foil 1. After Thermal Stress 2. At 125°C [257 F] 3. After Process Solutions	1.75(10.0) 1.31(7.5) 1.22(7.0) 1.13(6.5)	1.92(11.0) 1.75 (10.0) 1.40 (8.00) 1.13 (6.50)	2.01(11.5) 1.31(7.5) 1.22(7.0) 1.13(6.5)	2.1(12.0) 1.92 (11.00) 1.83 (10.5) 1.13 (6.50)	N/mm (lb/inch)	2.4.8 2.4.8.2 2.4.8.3
Dielectric Constant at 10G, maximum (DK)	1.080	1.08± 0.03	1.08	1.08± 0.03	--	2.5.5.5
Dissipation Factor at 10 G, maximum (DF)	0.0025	0.0025	0.0025	0.0025	--	2.5.5.5
Volume Resistivity, minimum A. C-96/35/90 B. After moisture resistance C. At elevated temperature E-24/125	$1.2*10^9$ -- $1.2*10^9$	$1.2*10^9$ -- $1.2*10^9$	-- $1.2*10^9$ $1.2*10^9$	-- $1.2*10^9$ $1.2*10^9$	MΩ-cm	2.5.17.1
Surface Resistivity, minimum A. C-96/35/90 B. After moisture resistance C. At elevated temperature E-24/125	$2.9*10^{10}$ -- $2.9*10^{10}$	$2.9*10^8$ -- $2.9*10^8$	-- $2.9*10^{10}$ $2.9*10^{10}$	-- $2.9*10^8$ $2.9*10^8$	MΩ	2.5.17.1
Moisture Absorption, maximum	--	0.01	--	0.01	%	2.6.2.1
Dielectric Breakdown, minimum	50	50	50	50	kV	2.5.6.2
Flexural Strength, minimum A. Length direction B. Cross direction	-- --	-- --	-- --	＞88 ＞67	N/mm^2	2.4.4
Arc Resistance, minimum	60	>180	60	>180	S	2.5.1
Thermal Stress 10 s at 288°C [550.4F],minimum A. Unetched B. Etched	Pass Pass	Pass Visual Pass Visual	Pass Pass	Pass Visual Pass Visual	Rating	2.4.13.1
Electric Strength, minimum (Laminate)	--	45	--	45	Kv/mm	2.5.6.2
Dielectric Withstand Voltage (Hi-Pot)	1000	1200	1000	1200	VDC/mil	*2.5.7.2*
Dielectric Withstand Voltage (Hi-Pot)	500	600	500	600	VAC/mil	*2.5.7.2*
Flammability (Laminate & Laminated Prepreg)	V-0	V-0	V-0	V-0	Rating	UL94
melting temperature(TMA)	--	380	--	380	℃	2.4.24.6
Decomposition Temperature	500	500	500	500	℃	2.4.24.6 (5% wt loss)
X/Y Axis CTE (0℃ to 100℃)	--	--	--	--	ppm/℃	2.4.24
A. X Axis B. Y Axis C. Z Axis	-- -- --	-- -- --	-- -- --	＜20 ＜33 ＜228	ppm/℃ ppm/℃ ppm/℃	2.4.24
Thermal Resistance A. T260 B. T288	>1 >1	＞15 ＞10	>1 >1	＞15 ＞10	Minutes Minutes	2.4.24.1

The above data and fabrication guide provide designers and PCB shop for their reference. We believe that these information are accurate, however, the data may vary depend on the test methods and specification used. The actual sales of the product should be according to specification in the agreement between FSD and its customer. FSD reserves the right to revise its data at any time without notice and maintain the best information available to users.