IT-200LKBS/IT-200LKTC

High Tg and High Speed Multifunctional Epoxy Resin, Low Dk/Df Laminate & Prepreg

IT-200LK is an advanced low Dk and low Df resin system with low CTE, high Tg (200℃ by DSC) multifunctional epoxy laminate. Excellent thermal reliability, especially for 260℃ assembly and sequential lamination process.

Key Features ==========

Advanced High Tg Resin Technology

Industrial standard material with high Tg (200℃ by DSC) and excellent electrical properties of dielectric constant (Dk) and loss tangent (Df) properties.

Ultra Low Dk and Low Df

Low Dk=3.8 & low Df=0.008, and keep equivalent electrical properties form 1MHz to 10GHz. It contributes to designer for easier signal simulation.

Excellent Signal Integrity

Low Dk and low Df provide high electrical performance device that need faster signal propagation and low signal loss for high frequency applications even more than 20GHz.

Lead-Free Assembly Compatible

RoHS compliant and suitable for high thermal reliability needs, and Lead free assemblies with a maximum reflow temperature of 260℃.

Friendly Processing and CAF Resistance

Friendly PCB process like high Tg FR4. Low CTE and excellent CAF resistance even after multiple lead-free assembly. Provide long-term reliability for both RF and digital applications.

Available in Variety of Constructions

Available in a various of constructions, copper weights and glass styles, including standard(HTE), RTF and VLP copper foil.

Applications

Backplanes

Multilayer PCB

Line Card

High Speed Servers

High Speed Storage Networks

Routing and Switching Systems

Antenna

RF and Wireless Communication

Industrial Approval

UL 94 V-0

IPC-4101D Spec / 99/101/126

RoHS Compliant

ITEQ Laminate/ Prepreg : IT-200LKTC/IT-200LKBS

IPC-4101D Spec / 99/101/126

LAMINATE (IT-200LKTC)

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]	0.44 ~ 0.61 (2.5 ~ 3.5)	0.44 (2.50)	0.44 ~ 0.61 (2.5 ~ 3.5)	0.44 (2.50)	N/mm (lb/inch)	2.4.8
B. Standard profile copper foil						
1. After Thermal Stress	1.23 (7.0)	0.70 (4.0)		0.70 (4.0)		2.4.8.2
2. At 125°C [257 F]	1.05 (6.0)	0.70 (4.0)	1.23 (7.0)	0.70 (4.0)		2.4.8.3
3. After Process Solutions	1.05 (6.0)	0.70 (4.0)	1.05 (6.0)	0.70 (4.0)		
			1.14 (6.5)			
Volume Resistivity, minimum						
A. C-96/35/90	10^{10}	10^{6}	--	--	MΩ-cm	2.5.17.1
B. After moisture resistance	--	--	10^{10}	10^{4}		
C. At elevated temperature E-24/125	10^{10}	10^{3}	10^{10}	10^{3}		
Surface Resistivity, minimum						
A. C-96/35/90	10^{10}	10^{4}	--	--	MΩ	2.5.17.1
B. After moisture resistance	--	--	10^{10}	10^{4}		
C. At elevated temperature E-24/125	10^{10}	10^{3}	10^{10}	10^{3}		
Moisture Absorption, maximum	--	--	0.10	0.8	%	2.6.2.1
Dielectric Breakdown, minimum	--	--	60	40	kV	2.5.6
Permittivity (Dk, 50% resin content) (Laminate & Laminated Prepreg)						
A. 1MHz	3.8	5.4	3.8	5.4	--	2.5.5.9
B. 1GHz	3.8	5.2	3.8	5.2		
C. 2GHz	3.8		3.8			2.5.5.13
D. 5GHz	3.7		3.8			
E. 10GHz	3.7	AABUS	3.7	AABUS		
Loss Tangent (Df, 50% resin content) (Laminate & Laminated Prepreg)						
A. 1MHz	0.007		0.007		--	2.5.5.9
B. 1GHz	0.008	0.035	0.007	0.035		
C. 2GHz	0.008		0.007			2.5.5.13
D. 5GHz	0.008		0.008			
E. 10GHz	0.008		0.008			
Flexural Strength, minimum						
A. Length direction	--	--	430-460	415	N/mm^2 (lb/in^2)	2.4.4
	--	--	(62,350-66,700)	(60,190)		
B. Cross direction	--	--	400-430	345		
	--	--	(62,350-66,700)	(50,040)		
Arc Resistance, minimum	120	60	120	60	s	2.5.1
Thermal Stress 10 s at 288°C [550.4F],minimum						
A. Unetched	Pass	Pass Visual	Pass	Pass Visual	Rating	2.4.13.1
B. Etched	Pass	Pass Visual	Pass	Pass Visual		
Electric Strength, minimum (Laminate & Laminated Prepreg)	45	30	--	--	kV/mm	2.5.6.2
Flammability, (Laminate & Laminated Prepreg)	V-0	V-0	V-0	V-0	Rating	UL94
Glass Transition Temperature(DSC)	200	190 minimum	200	190minimum	˚C	2.4.25
Decomposition Temperature	--	--	370	350 minimum	˚C	2.4.24.6 (5% wt loss)
X/ Y Axis CTE (40℃ to 125℃)	--	--	9-12	--	ppm/˚C	2.4.24
Z-Axis CTE						
A. Alpha 1	--	--	40	--	ppm/˚C	2.4.24
B. Alpha 2	--	--	200	--	ppm/˚C	
C. 50 to 260 Degrees C	--	--	2.5	--	%	
Thermal Resistance						
A. T260	--	--	>60	--	Minutes	2.4.24.1
B. T288	--	--	>30	--	Minutes	
CAF Resistance	--	--	Pass	AABUS	Pass/Fail	2.6.25