



PRODUCTS

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IT-150DABS SE/IT-150DATC SE

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

The IT-150DA is an advanced low CTE, high Tg (180 °C by DSC) multifunctional epoxy laminate. This material is designed for not only in standard multilayer PWB, but also for high electrical performance (ultra low Dk and Df), lead-free applications.

IT-150DA SE and IT-150DA L exist different low Dk yarn for lower Dk/Df properties. That's for user's demand.

Key Features =====

Advanced High Tg Resin Technology

Industrial standard material with high Tg (180 °C by DSC) and excellent electrical properties of dielectric constant (Dk) and loss tangent (Df) properties.

Ultra Low Dk and Low Df

Ultra low Dk=3.6-3.3 & low Df=0.005-0.003, and keep equivalent electrical properties from 1MHz to 10GHz. It contributes to designer for easier signal simulation.

Excellent Signal Integrity

Ultra 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 °C.

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, RTF and VLP copper foil.

Applications

Backplanes

Multilayer PCB

Line Card

High Speed Servers

High Speed Storage Networks

Routing and Switching Systems

Antenna

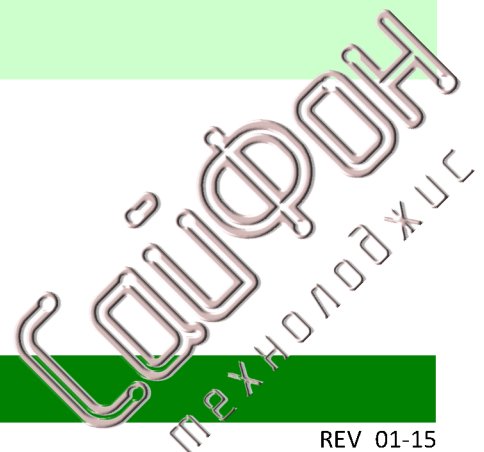
RF and Wireless Communication

Industrial Approval

UL 94 V-0

IPC-4101D Spec /99/101/126

RoHS Compliant



ITEQ Laminate/ Prepreg : IT-150DATC SE/IT-150DABS SE/IT-150DA L

IPC-4101D Spec / 99/101/126

LAMINATE (IT-150DATC)

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	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 2.4.8.2 2.4.8.3
Volume Resistivity, minimum A. C-96/35/90 B. After moisture resistance C. At elevated temperature E-24/125	10 ¹⁰ -- 10 ¹⁰	10 ⁶ -- 10 ³	-- 10 ¹⁰ 10 ¹⁰	-- 10 ⁴ 10 ³	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	10 ¹⁰ -- 10 ¹⁰	10 ⁴ -- 10 ³	-- 10 ¹⁰ 10 ¹⁰	-- 10 ⁴ 10 ³	MΩ	2.5.17.1
Moisture Absorption, maximum	--	--	0.1	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 B. 1GHz C. 2GHz D. 5GHz E. 10GHz	3.3 3.3 3.3 3.3 3.3	N/A AABUS	3.3 3.3 3.3 3.3 3.3	N/A AABUS	--	2.5.5.9 2.5.5.13
Loss Tangent (Df, 50% resin content) (Laminate & Laminated Prepreg) A. 1MHz B. 1GHz C. 2GHz D. 5GHz E. 10GHz	0.004 0.004 0.004 0.005 0.005	N/A	0.003 0.003 0.003 0.004 0.004	N/A	--	2.5.5.9 2.5.5.13
Flexural Strength, minimum A. Length direction B. Cross direction	-- -- --	-- -- --	430-460 (62,350-66,700) 390-410 (56,550-59,450)	415 (60,190) 345 (50,040)	N/mm ² (lb/in ²)	2.4.4
Arc Resistance, minimum	120	60	120	60	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 & 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)	180	175 minimum	180	175 minimum	°C	2.4.25
Decomposition Temperature	--	--	370	350 minimum	°C	2.4.24.6 (5% wt loss)
X/Y Axis CTE (40°C to 125°C)	--	--	12-14	--	ppm/°C	2.4.24
Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 to 260 Degrees C	-- -- --	-- -- --	45 250 2.6	-- -- --	ppm/°C ppm/°C %	2.4.24
Thermal Resistance A. T260 B. T288	-- --	-- --	>60 >30	-- --	Minutes Minutes	2.4.24.1
CAF Resistance	--	--	Pass	AABUS	Pass/Fail	2.5.2.1

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 method and the instrument used. The actual sales of the product should be according to specification in the agreement between ITEQ and its customer. ITEQ reserves the right to revise its data at any time without notice and to maintain the best information available to users.