IT-968BS SE/IT-968TC SE

High Tg, Low Dk and Ultra Low Df Laminate & Prepreg

The IT-968SE is an advanced low DK Glass fabric, low CTE, high Tg (185° C by DSC) and high speed material. This material is designed not only for standard multilayer PWBs, but also for high electrical performance (ultra low loss) and Lead-free applications.

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

Advanced High Tg Resin Technology

Industrial standard material with high Tg (185° C by DSC) and excellent electrical properties of dielectric constant (Dk) and loss tangent (Df) properties.

Low Dk and Ultra Low Df

Ultra low Df, less than 0.004 at 10GHz, and keep very stable electrical properties across a wide frequency range. This contributes to easier signal simulation for PCB designers.

Excellent Signal Integrity

Low Dk and ultra low Df provide high electrical performance in devices that require faster signal propagation and very low signal loss for high frequency applications greater than 20GHz.

Lead-Free Assembly Compatible

RoHS compliant and suitable for high thermal reliability needs, including Lead free assembly with a maximum reflow temperature of 260° C with excellent CAF performance.

Available in Variety of Constructions

Available in a variety of constructions, copper weights and glass styles, including H-VLP Rz<2umcopper 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

RoHS Compliant

ITEQ Laminate/ Prepreg : IT-968TC SE/IT-968BS SE

LAMINATE (IT-968TC SE)

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 - 1oz standard foil	0.44 ~ 0.61 (2.5 ~ 3.5) 0.88 ~ 1.23 (5.0 ~ 7.0)	0.44 (2.50) 0.7 (4.00)	0.44 ~ 0.61 (2.5 ~ 3.5) 0.88 ~ 1.23 (5.0 ~ 7.0)	0.44 (2.50) 0.70 (4.00)	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	$>10^{9}$ -- $>10^{9}$	10^{4} -- 10^{3}	-- $>10^{9}$ $>10^{9}$	-- 10^{4} 10^{3}	MΩ	2.5.17.1
Moisture Absorption, maximum	--	--	0.12	0.5	%	2.6.2.1
Dielectric Breakdown, minimum	--	--	>50	40	kV	2.5.6
Permittivity (Dk, 50% resin content) (Laminate & Laminated Prepreg) A. 1GHz B. 2GHz C. 5GHz D. 10GHz	 3.44 3.44 3.35 3.34	 AABUS	 3.44 3.44 3.35 3.34	 AABUS	--	 2.5.5.9 2.5.5.13 2.5.5.13 2.5.5.13
Loss Tangent (Df, 50% resin content) (Laminate & Laminated Prepreg) A. 1GHz B. 2GHz C. 5GHz D. 10GHz	 0.0027 0.0030 0.0035 0.0038	 AABUS	 0.0031 0.0030 0.0035 0.0038	 AABUS	--	 2.5.5.9 2.5.5.13 2.5.5.13 2.5.5.13
Flexural Strength, minimum A. Length direction B. Cross direction	 -- --	 -- --	 444 (64380) 415 (60175)	 415 (60,190) 345 (50,040)	N/mm^2 (lb/in^2)	2.4.4
Arc Resistance, minimum	>60	60	>60	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)	>30	30	--	--	kV/mm	2.5.6.2
Flammability, (Laminate & Laminated Prepreg)	V-0	V-0	V-0	V-0	Rating	UL94
Glass Transition Temperature(TMA)	--	--	175	170 minimum	˚C	2.4.24
Decomposition Temperature	--	--	400	340 minimum	˚C	2.4.24.6 (5% wt loss)
X/Y Axis CTE (40℃ to 125℃)	--	--	12-14	--	ppm/˚C	2.4.24
Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 to 260 Degrees C	 -- -- --	 -- -- --	 45 260 2.3	 60 maximum 300 maximum 3.5 maximum	 ppm/˚C ppm/˚C %	2.4.24
Thermal Resistance A. T260 B. T288	 -- --	 -- --	 >60 >60	 30 minimum 15 minimum	 Minutes Minutes	2.4.24.1
CAF Resistance	--	--	Pass	AABUS	Pass/Fail	2.6.25