

ITEQ
Your Partner of Advanced Materials & Mass Lam Service

IT-988GLSE

CCL : IT-988GLSETC
Prepreg: IT-988GLSEBS

High Tg / Halogen Free / Ultra Low Loss Laminate & Prepreg

- ANSI Type : **No ANSI**
- Appliceable IPC-4101 /134；IPC-4103 /240/540
- 400G Switch solution / Lower Dk (3.12 @ 10GHz) and Ultra low Df (0.0025 @ 10GHz)
- Very stable Dk-Df across frequency / Very Low CTE (1.7%)

Laminate properties

Items	IPC TM-650		Typical Value		Unit
Peel Strength A. Low profile copper foil (18um)	2.4.8		3.5		lb/inch
Volume Resistivity	2.5.17.1		10^{10}		MΩ-cm
Surface Resistivity	2.5.17.1		10^{10}		MΩ
Moisture Absorption	2.6.2.1		0.12		%
Permittivity (Dk) A. 1GHz B. 2GHz C. 5GHz D. 10GHz	2.5.5.9 2.5.5.13 2.5.5.13 2.5.5.13	Note*	(55%/70%) 3.41/3.18 3.40/3.17 3.35/3.14 3.34/3.12	55% 3.30 3.30 3.30 3.30	--
Loss Tangent (Df) A. 1GHz B. 2GHz C. 5GHz D. 10GHz	2.5.5.9 2.5.5.13 2.5.5.13 2.5.5.13	Note*	(55%/70%) 0.0018/0.0018 0.0021/0.0021 0.0023/0.0023 0.0026/0.0025	55% 0.0014 0.0015 0.0015 0.0015	--
Flexural Strength A. Length direction B. Cross direction	2.4.4		475 415		N/mm^2
Young's Modulus A. Warp direction B. Fill direction	ASTM D3039		15 14		Gpa
Thermal Stress 10 s at 288˚C A. Unetched B. Etched	2.4.13.1		Pass Pass		Rating
Flammability	UL94		V-0		Rating
Comparative Tracking Index (CTI)	ASTM D3638 / UL 746		CTI 2 (250-399)		Class (Volts)
Glass Transition Temperature (TMA/DMA)	2.4.24/2.4.24.4		180/200		˚C
Decomposition Temperature (5% W.L)	2.4.24.6		400		˚C
X/Y Axis CTE (40℃ to 125℃)	2.4.41		11/11		ppm/˚C
	2.4.24.5		8/9		ppm/˚C
Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 ˚C to 260˚C	2.4.24		 35 185 1.7		 ppm/˚C ppm/˚C %
Thermal Resistance A. T260 B. T288	2.4.24.1		 >60 >60		 Minutes Minutes

Note*: The data presented above relates to the perpendicular dielectric parameters of the substrates. Resonators with different diameters have been used for the measurements of the disk samples