

ITEQ
Your Partner of Advanced Materials & Mass Lam Service

IT-988GSE

CCL : IT-988GSETC
Prepreg: IT-988GSEBS

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

- ANSI Type : **No ANSI**
- Applicable IPC-4101 /134；IPC-4103 /240/540
- Lower Dk (<3.21 @ 10GHz) and Ultra low Df (<0.0014 @ 10GHz)/ 100G/400G Switch solution
- Very Stable dk-df across frequency / Advanced High Tg Resin Technology

Laminate properties

Items	IPC TM-650		Typical Value		Unit
Peel Strength A. Low profile copper foil	2.4.8		4.1		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		0.15		%
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*	50%/70% 3.45/3.15 3.35/3.05 3.29/3.01 3.28/3.01	50% 3.21 3.21 3.21 3.21	--
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*	50%/70% 0.0018/0.0014 0.0021/0.0016 0.0023/0.0020 0.0026/0.0022	50% 0.0014 0.0014 0.0014 0.0014	--
Flexural Strength A. Length direction B. Cross direction	2.4.4		410-440 390-410		N/mm²
Thermal Stress 10 s at 288℃ 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)
Maximum Operating Temperature(MOT)	UL 746		130		℃
Glass Transition Temperature(TMA)	2.4.24		180		℃
Decomposition Temperature(5% W.L)	2.4.24.6		400		℃
X/Y Axis CTE (40℃ to 125℃)	2.4.41		16/17		ppm/℃
Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 to 260 Degrees C	2.4.24		 53 280 2.71		 ppm/℃ ppm/℃ %
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.