

ITEQ
Your Partner of Advanced Materials
& Mass Lam Service

IT-170GTTC

CCL : IT-170GTTC
Prepreg: IT-170GTBS

High Tg / Halogen Free/Mid Loss Laminate & Prepreg

- ANSI Type : **FR-4.1**
- Appliceable IPC-4101 /127/128/130；IPC-4103 /240/540
- Halogen free, High-Tg (185˚C by DSC) / Compatible with High Tg standard FR-4 processes
- Lower Dk(3.9 @ 10GHz) and Low Df (0.0095 @ 10GHz)
- CAF resistance reliability / Low CTE and High thermal

Laminate properties

Items	IPC TM-650	Typical Value	Unit
Peel Strength Low profile copper foil(35um)	2.4.8	4.0	lb/inch
Volume Resistivity	2.5.17.1	$1x10^{10}$	MΩ-cm
Surface Resistivity	2.5.17.1	$1x10^{10}$	MΩ
Moisture Absorption	2.6.2.1	0.10	%
Permittivity (Dk, 55% resin content) A. 1GHz B. 2GHz C. 5GHz D. 10GHz	 2.5.5.9 2.5.5.13 2.5.5.13 2.5.5.13	 4.0 4.0 3.9 3.9	--
Loss Tangent (Df, 55% resin content) A. 1GHz B. 2GHz C. 5GHz D. 10GHz	 2.5.5.9 2.5.5.13 2.5.5.13 2.5.5.13	 0.0085 0.0085 0.0085 0.0095	--
Flexural Strength A. Warp direction B. Fill direction	2.4.4	 480-510 400-430	N/mm^2
Young's Modulus A. Warp direction B. Fill direction	ASTM D3039	 20 19	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)
Maximum Operating Temperature(MOT)	UL 746	130	˚C
Glass Transition Temperature (DSC)	2.4.25	185	˚C
Decomposition Temperature (5% W.L)	2.4.24.6	380	˚C
X/Y Axis CTE(40℃ to 125℃)	2.4.41	11/13	ppm/˚C
	2.4.24.5	10/11	ppm/˚C
Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50˚C to 260˚C	2.4.24	 45 / 40 183 / 180 2.2 / 1.7 (RC58%) / (RC48%)	 ppm/˚C ppm/˚C %
Thermal Resistance A. T260 B. T288	2.4.24.1	 >60 >60	 Minutes Minutes