



# IT-170GTTC

## High Tg / Halogen Free/Mid Loss Laminate & Prepreg

- Halogen free, High-Tg (185°C by DSC)
- Lower Dk (3.9 @ 10GHz) and low Df (0.0095 @ 10GHz)
- Compatible with High Tg standard FR-4 processes
- Low CTE & High thermal/CAF resistance reliability

### Laminate properties

Items	IPC TM-650	Typical Value	Unit
Peel Strength Low profile copper foil	2.4.8	4.0	lb/inch
Volume Resistivity	2.5.17.1	10 <sup>10</sup>	MΩ-cm
Surface Resistivity	2.5.17.1	10 <sup>10</sup>	MΩ
Moisture Absorption	2.6.2.1	0.10	%
Permittivity (Dk, 55% resin content)			
A. 1GHz		4.0	
B. 2GHz	2.5.5.13	4.0	--
C. 5GHz		3.9	
D. 10GHz		3.9	
Loss Tangent (Df, 55% resin content)			
A. 1GHz		0.0085	
B. 2GHz	2.5.5.13	0.0085	--
C. 5GHz		0.0085	
D. 10GHz		0.0095	
Flexural Strength			
A. Warp direction	2.4.4	480-510	N/mm <sup>2</sup>
B. Fill direction		400-430	
Thermal Stress 10 s at 288°C			
A. Unetched	2.4.13.1	Pass	Rating
B. Etched		Pass	
Flammability	UL94	V-0	Rating
Glass Transition Temperature (DSC)	2.4.25	185	°C
Decomposition Temperature (@5%wt)	2.4.24.6	380	°C
X/Y Axis CTE(40°C to 125°C)	2.4.41	11/13	ppm/°C
Z-Axis CTE			
A. Alpha 1		45	ppm/°C
B. Alpha 2	2.4.24	183	ppm/°C
C. 50°C to 260°C		2.2	%
Thermal Resistance			
A. T260	2.4.24.1	>60	Minutes
B. T288		>60	Minutes

\*The sample thickness : 0.76mm.