



# IT-170GRA2TC

*High Tg / Halogen Free / Low-Loss Laminate & Prepreg*

- Halogen free, High-Tg (175°C)
- Lower Dk (3.8 @ 10GHz) and low Df (0.008 @ 10GHz)
- Compatible with High Tg standard FR-4 processes
- High CAF resistance reliability
- Super High thermal resistance reliability

## Laminate properties

Items	IPC TM-650	Typical Value	Unit
Peel Strength, minimum A. Low profile copper foil	2.4.8	4.0~5.0	lb/inch
Volume Resistivity	2.5.17.1	1x10 <sup>10</sup>	MΩ-cm
Surface Resistivity	2.5.17.1	1x10 <sup>10</sup>	MΩ
Moisture Absorption, maximum	2.6.2.1	0.10	%
Permittivity (Dk, 50% resin content) A. 1GHz B. 2GHz C. 5GHz D. 10GHz	2.5.5.13	4.0 3.9 3.9 3.8	--
Loss Tangent (Df, 50% resin content) A. 1GHz B. 2GHz C. 5GHz D. 10GHz	2.5.5.13	0.0060 0.0063 0.0075 0.0080	--
Flexural Strength, minimum A. Length direction B. Cross direction	2.4.4	450-480 380-410	N/mm <sup>2</sup>
Thermal Stress 10 s at 288°C A. Unetched B. Etched	2.4.13.1	Pass Pass	Rating
Flammability	UL94	V-0	Rating
Glass Transition Temperature(DSC)	2.4.25	175	°C
Decomposition Temperature	2.4.24.6	390	°C
X/Y Axis CTE (40°C to 125°C)	2.4.41	13-16	ppm/°C
Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 to 260 Degrees C	2.4.24	40 215 2.4	ppm/°C ppm/°C %
Thermal Resistance A. T260 B. T288	2.4.24.1	>60 >60	Minutes Minutes

