



IT-140

Conventional FR-4 / High Reliability Laminate & Prepreg

- Excellent CAF resistance
- Good through-hole reliability
- Good thermal reliability
- For automotive, PC and notebook, memory module, game player, and consumer applications

Laminate properties

Items	IPC TM-650	Typical Value	Unit
Peel Strength, minimum			
A. Low profile copper foil	2.4.8	5.5	lb/inch
B. Standard profile copper foil		11	
Volume Resistivity	2.5.17.1	1x10 ⁹	MΩ-cm
Surface Resistivity	2.5.17.1	1x10 ⁸	MΩ
Moisture Absorption, maximum	2.6.2.1	0.10	%
Permittivity (Dk, 50% resin content)			
A. 1GHz		4.3	
B. 2GHz	2.5.5.13	4.3	--
C. 5GHz		4.1	
D. 10GHz		4.0	
Loss Tangent (Df, 50% resin content)			
A. 1GHz		0.017	
B. 2GHz	2.5.5.13	0.017	--
C. 5GHz		0.018	
D. 10GHz		0.018	
Flexural Strength, minimum			
A. Length direction	2.4.4	480-510	N/mm ²
B. Cross direction		410-440	
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	140	°C
Decomposition Temperature	2.4.24.6	305	°C
X/Y Axis CTE (40°C to 125°C)	2.4.24	11-13 / 13-15	ppm/°C
Z-Axis CTE			
A. Alpha 1		55	ppm/°C
B. Alpha 2	2.4.24	290	ppm/°C
C. 50 to 260 Degrees C		4.2	%
Thermal Resistance			
A. T260	2.4.24.1	15	Minutes
B. T288		2	Minutes