



IT-189

Low CTE / High Reliability Laminate & Prepreg

- Excellent CAF resistance (1000 Volts)
- Good through-hole reliability
- Lead Free , High Tg and high thermal reliability
- For automotive ECU and heavy copper applications

Laminate properties

Items	IPC TM-650	Typical Value	Unit
Peel Strength, minimum			
A. Low profile copper foil	2.4.8	5	lb/inch
B. Standard profile copper foil		8	
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	2.5.5.13	4.4	--
B. 2GHz		4.2	
C. 5GHz		4.1	
D. 10GHz		4.1	
Loss Tangent (Df, 50% resin content)			
A. 1GHz	2.5.5.13	0.013	--
B. 2GHz		0.014	
C. 5GHz		0.015	
D. 10GHz		0.016	
Flexural Strength, minimum			
A. Length direction	2.4.4	500-550	N/mm ²
B. Cross direction		400-450	
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	175	°C
Decomposition Temperature	2.4.24.6	350	°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	2.4.24	35	ppm/°C
B. Alpha 2		230	ppm/°C
C. 50 to 260 Degrees C		2.4	%
Thermal Resistance			
A. T260	2.4.24.1	>60	Minutes
B. T288		25	Minutes