



IT-158

CCL : IT-158TC
Prepreg: IT-158BS

Middle Tg / Lead Free / High Reliability Laminate & Prepreg

- ANSI Type : **FR-4.0**
- Applicable IPC-4101 /98/99/101 ; IPC-4103 /250/550
- Excellent CAF resistance / Good through-hole reliability / Low CTE and high thermal reliability
- For automotive, PC and notebook, game player, networking, 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	2.5.5.9	4.3	--
B. 2GHz	2.5.5.13	4.2	
C. 5GHz	2.5.5.13	4.1	
D. 10GHz	2.5.5.13	4.0	
Loss Tangent (Df, 50% resin content)			
A. 1GHz	2.5.5.9	0.016	--
B. 2GHz	2.5.5.13	0.017	
C. 5GHz	2.5.5.13	0.018	
D. 10GHz	2.5.5.13	0.018	
Flexural Strength, minimum			
A. Length direction	2.4.4	450-480	N/mm ²
B. Cross direction		370-400	
Thermal Stress 10 s at 288°C			
A. Unetched	2.4.13.1	Pass	Rating
B. Etched		Pass	
Flammability	UL94	V-0	Rating
Comparative Tracking Index (CTI)	ASTM D3638 / UL 746	CTI 3 (175-249)	Class (Volts)
Maximum Operating Temperature(MOT)	UL 746	130	°C
Glass Transition Temperature(DSC)	2.4.25	155	°C
Decomposition Temperature(5% W.L)	2.4.24.6	345	°C
X/Y Axis CTE (40°C to 125°C)	2.4.41	11-13 / 13-15	ppm/°C
Z-Axis CTE			
A. Alpha 1		40	ppm/°C
B. Alpha 2	2.4.24	240	ppm/°C
C. 50 to 260 Degrees C		3.3	%
Thermal Resistance			
A. T260	2.4.24.1	>60	Minutes
B. T288		20	Minutes