



# IT-180A

CCL : IT-180ATC  
Prepreg: IT-180ABS

## High Tg / Lead Free / High Reliability Laminate & Prepreg

- ANSI Type : **FR-4.0**
- Applicable IPC-4101 /98/99/101/126 ; IPC-4103 /250/550
- Excellent CAF resistance / Good through-hole reliability
- Low CTE and high thermal reliability
- For automotive, high layer PCB, 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 <sup>9</sup>	MΩ-cm
Surface Resistivity	2.5.17.1	1x10 <sup>8</sup>	MΩ
Moisture Absorption, maximum	2.6.2.1	0.10	%
Permittivity (Dk, 50% resin content)			--
A. 1MHz	2.5.5.9	4.5	
B. 1GHz	2.5.5.9	4.4	
Loss Tangent (Df, 50% resin content)			--
A. 1MHz	2.5.5.9	0.014	
B. 1GHz	2.5.5.9	0.015	
Flexural Strength, minimum			
A. Length direction	2.4.4	500-530	N/mm <sup>2</sup>
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
Comparative Tracking Index (CTI)	ASTM D3638/ UL 746	CTI 3 (175-249)	Class (Volts)
Maximum Operating Temperature	UL 746	130	°C
Glass Transition Temperature (DSC/DMA)	2.4.25/2.4.24.4	175/185	°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	2.4.24	45	ppm/°C
B. Alpha 2		210	ppm/°C
C. 50 to 260 Degrees C		2.7	%
Thermal Resistance			
A. T260	2.4.24.1	>60	Minutes
B. T288		20	Minutes