

# IT-180A

High-Tg, Low-CTE, Multifunctional Epoxy Resin with Fillers, Phenolic-Curing, Lead-free Process Compatible

## ● Specification Sheet

IT-180ATC(Laminate) Property	Specification (Typical Value)		Units Metric(English)	Test Method	
	<0.50mm[0.0197in]	≥0.50mm[0.0197in]		IPC-TM-650	Ref. Para.
1. Peel Strength, As received A. 17 micron [1/2 ounce/Ft2] copper and under B. 35 micron [1-ounce/Ft2] copper C. 70micron [2-ounce/Ft2] copper D. 105,140,175micron [3,4,5-ounce/Ft2 ] copper and above	>4.0 >4.5 >5.0 >5.5	>5.0 >6.0 >8.0 >9.0	(lb/inch)	2.4.8 2.4.8.2 2.4.8.3	3.9.1.1 3.9.1.1.1 3.9.1.1.2 3.9.1.1.3
2. Volume Resistivity, minimum A. C-96/35/90 B. After moisture resistance C. At elevated temperature E-24/125	10 <sup>6</sup> --- 10 <sup>3</sup>	--- 10 <sup>4</sup> 10 <sup>3</sup>	MΩ-cm	2.5.17.1	3.11.1.3
3. Surface Resistivity, minimum A. C-96/35/90 B. After moisture resistance C. At elevated temperature E-24/125	10 <sup>4</sup> --- 10 <sup>3</sup>	--- 10 <sup>4</sup> 10 <sup>3</sup>	MΩ	2.5.17.1	3.11.1.4
4. Moisture Absorption, maximum	-	0.5	%	2.6.2.1	3.12.1.1
5. Dielectric Breakdown, minimum	-	40	kV	2.5.6	3.11.1.6
6. Permittivity at 1 MHz, maximum (Laminate & Prepreg as laminated)	<5.4 (4.8)	<5.4 (4.8)	-	2.5.5.3 2.5.5.5 2.5.5.6	3.11.1.1 3.11.2.1
7. Loss Tangent at 1 MHz, maximum (Laminate & Prepreg as laminated)	<0.035 (0.016)	<0.035 (0.016)	-	2.5.5.3 2.5.5.3 2.5.5.9	3.11.1.2 3.11.2.2
8. Flexural Strength, minimum A. Length direction B. Cross direction	- -	415(60,190) 345(50,140)	N/mm <sup>2</sup> (lb/in <sup>2</sup> )	2.4.4	3.9.1.3
9. Flexural Strength at Elevated Temperature, length direction, minimum	-	-	N/mm <sup>2</sup> (lb/in <sup>2</sup> )	2.4.4.1	3.9.1.4
10. Arc Resistance, minimum	60	60	s	2.5.1	3.11.1.5
11. Thermal Stress 10 sec at 288°C [550.4F] min A. Unetched B. Etched	Pass Visual Pass Visual	Pass Visual Pass Visual	Rating	2.4.13.1	3.10.1.2
12. Electric Strength, minimum (Laminate & Prepreg as laminated)	30	-	kV/mm	2.5.6.2	3.11.1.7 3.11.2.3
13. Flammability (Laminate & Prepreg as laminated)	V-0	V-0	Rating	UL94	3.10.2.1 3.10.1.1
14. Glass Transition Temperature	-	>170	°C	2.4.24 2.4.25	3.10.1.6
15. Decomposition Temperature	-	(350)	°C	TBD (5% wt loss)	3.10.1.10
16. Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 to 260 Degrees C	-- -- --	(45) (240) (2.8)	PPM/°C PPM/°C %	2.4.24	3.10.1.11
17. Thermal Resistance (Copper removed) A.T260 B.T288 C.T300	-- -- --	(>60) (20) (5)	Minutes Minutes Minutes	2.4.24.1	3.10.1.12
18. CAF Resistance	--	AABUS	Pass/Fail	2.6.25	3.12.1.4

Pass or Fail are determined by Fail Being ≥ 1 decade drop in the sample's initial insulation resistance value.

IT-180ABS (Prepreg) Property	Specification	Units	Test Method	Ref. Para
1. Shelf Life, minimum(Condition 1/Condition 2)	180/90	Days	AABUS	3.17
2. Reinforcement		As per IPC-4412 or AABUS		
3. Volatile content maximum	<1.5	%	2.3.19	3.9.2.2.8
4. Prepreg Parameters	-	AABUS	AABUS	1.1.7
5. Flammability (as laminated)	V-0	rating	UL94	3.10.2.1
6. Other	-			

\*AABUS = As agreed upon between user and supplier.

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