

Low-Halogen Filled TG150 Material Datasheet



Classification according to IPC-4101 E/128 (127)

Reinforcement: Woven E-Glass
Resin System: Epoxy, filled; low-halogen content

Explanations :

C = preconditioning in humidity chamber
E = preconditioning at temperature

The figures following the letter symbols indicate with the first digit the duration of the preconditioning in hours, with the second digit the preconditioning temperature in °C and with the third digit the relative humidity.

Laminate Requirements	Thickness < 0,50mm		Thickness ≥ 0,5mm		Units	Test Method
	Typical Value	Specification	Typical Value	Specification	Metric	IPC-TM-650 or as described
Peel Strength, minimum A: Low profile copper foil and very low profile copper foil – all copper foil > 17µm B: Standard profile copper foil 1. After thermal stress 2. At 125°C 3. After process solutions C: All other foil - composite	0,8	0,70	0,85	0,70	N/mm	2.4.8
	0,85	0,80	1,2	1,05		2.4.8.2
	0,8	0,70	0,85	0,70		2.4.8.3
	0,7	0,55	0,85	0,80		2.4.8
Volume Resistivity, minimum A: C-96/35/90 B: After humidity conditioning C: At elevated temperature E-24/125	5 10 ⁶	10 ⁶		10 ⁶	MΩ cm	2.5.17.1
	2 10 ⁷	10 ³	2 10 ⁶	10 ³		
Surface Resistivity, minimum A: C-96/35/90 B: After humidity conditioning C: At elevated temperature E-24/125	2 10 ⁵	10 ⁴		10 ⁴	MΩ	2.5.17.1
	1 10 ⁷	10 ³	1 10 ⁶	10 ³		
Moisture Absorption, maximum	-	-	0,11	0,80	%	
Dielectric Breakdown, minimum			> 50	40	kV	2.5.6
Permittivity @ 1MHz (Laminate and prepreg as laminated)	4,4-4,6	5,4	4,6-4,9	5,4		2.5.5.2 2.5.5.3 2.5.5.9
Loss Tangent @ 1MHz (Laminate and prepreg as laminated)	0,015-0,02	0,035	0,015-0,02	0,035		2.5.5.2 2-5.5.3 2.5.5.9
Flexural Strength , minimum A: Length direction B: Cross direction			450 390	415 345	N/mm ²	2.4.4
Arc Resistance, minimum	120	90	120	90	s	2.5.1
Thermal Stress 10 s @288°C, minimum Unetched Etched	Pass	Pass Visual	Pass	Pass Visual	rating	2.4.13.1
	Pass	Pass Visual	Pass	Pass Visual		
Electric Strength, minimum (Laminate and prepreg as laminated)	40	30			kV/mm	2.5.6.2
Flammability (Laminate and prepreg as laminated)	V0	min. V0	V0	min. V0	rating	UL94
Halogen content , maximum Chlor Brom Chlor + Brom	Pass	900	Pass	900	ppm	2.3.41
	Pass	900	Pass	900		
	Pass	1500	Pass	1500		
Glass Transition Temperature	Typical		150		°C	2.4.24
Decomposition Temperature			≥330	min. 325	°C	2.4.24.6 (5% weight loss)
CTE Z-axis A: Alpha 1 B: Alpha 2 C: 50°C – 260°C			30-50	maximum 60	ppm/°C	2.4.24
			200-230	maximum 300	ppm/°C	
			3	maximum 3,5	%	
Time to Delamination (TMA) (copper removed) A: T260 B: T288 C: T300			>60	min. 30	minutes	2.4.24.1 and corresponding adjustments in 3.10.1.2
			>15	min. 5		
				AABUS		
Others PLC CTI			2 320	250 - 400	class V	UL IEC 112