

IT-158

Features

- Low CTE with excellent thermal resistance
- Tg >150 °C (DSC)
- High thermal decomposition temperature (Td)
- Lead-free process compatible
- Extremely robust, good for high reliability board

Properties

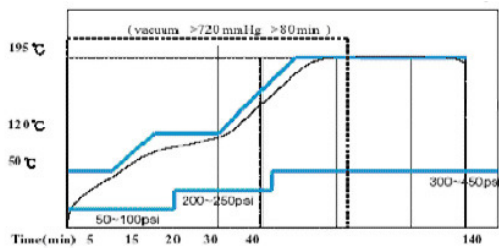
ITEQ Laminate/ Prepreg : IT-158TC / IT-158BS						
IPC-4101 Spec /99						
LAMINATE (IT-158TC)						
Property	Thickness<0.50 mm [0.0197 in]		Thickness≥0.50 mm [0.0197 in]		Units	Test Method
	Typical Value	Spec	Typical Value	Spec	Metric (English)	IPC-TM-650 (or as noted)
Peel Strength, minimum						
A. Low profile copper foil and very low profile copper foil - all copper weights > 17µm [0.669 mil]	0.88(5.0)	0.70(4.0)	0.88(5.0)	0.70(4.0)	N/mm (lb/inch)	2.4.8 2.4.8.2 2.4.8.3
B. Standard profile copper foil	1.58(9.0)	0.80 (4.57)	1.66(9.5)	1.05 (6.00)		
1. After Thermal Stress	1.31(7.5)	0.70 (4.00)	1.40(8.0)	0.70 (4.00)		
2. At 125°C [257 F]						
Volume Resistivity, minimum						
A. C-96/35/90	3.0x10⁷	10⁶		---	MΩ-cm	2.5.17.1
B. After moisture resistance	-	-	5.0x10⁷	10⁴		
C. At elevated temperature E-24/125	5.0x10⁷	10³	1.0x10⁸	10³		
Surface Resistivity, minimum						
A. C-96/35/90	1.0x10⁷	10⁴		---	MΩ	2.5.17.1
B. After moisture resistance	---	-	1.0x10⁷	10⁴		
C. At elevated temperature E-24/125	5.0x10⁷	10³	3.0x10⁷	10³		
Moisture Absorption, maximum		-	0.08	0.5	%	2.6.2.1
Dielectric Breakdown, minimum	-	-	60	40	kV	2.5.6
Permittivity at 1 MHz, maximum (Laminate & Prepreg as laminated)	4.6	5.4	4.8	5.4	-	2.5.5.
Loss Tangent at 1 MHz, maximum (Laminate & Prepreg as laminated)	0.016	0.035	0.016	0.035	-	2.5.5.
Flexural Strength, minimum						
A. Length direction	-	-	487(70,000)	415 (60,190)	N/mm² (lb/in²)	2.4.4
B. Cross direction	-	-	466(67,000)	345 (50,140)		
Arc Resistance, minimum	125	60	125	60	S	2.5.1
Thermal Stress 10 s at 288°C [550.4F], minimum						
A. Unetched	Pass	Pass	Pass	Pass	Rating	2.4.13.1
B. Etched	Pass	Visual Pass Visual	Pass	Visual Pass Visual		
Electric Strength, minimum (Laminate & Prepreg as laminated)	45	30	-	-	kV/mm	2.5.6.2
Flammability, (Laminate & Prepreg as laminated)	V-0	V-0	V-0	V-0	Rating	UL94
Glass Transition Temperature	155	150 - 200	155	150 - 200	?C	2.4.25
Decomposition Temperature		--	345	330 minimum	?C	2.4.24.6 (5% wt loss)
Z-Axis CTE						
A. Alpha 1	-	--	40	60 maximum	PPM/?C PPM/?C %	2.4.24
B. Alpha 2	-	--	240	300 maximum		
C. 50 to 260 Degrees C	-	--	3.3	3.5 maximum		
Thermal Resistance						
A. T260	-	--	>60	30 minimum	Minutes Minutes	2.4.24.1
B. T288	-	--	>20	5 minimum		

PREPREG (IT-158BS)				
	Typical Value	Specification	Units	Test Method
1. Shelf Life, minimum (Condition 1/Condition 2)	Meet requirement	180/90	Days	AABUS
2. Volatile content maximum	0.4	1.5	%	2.3.19

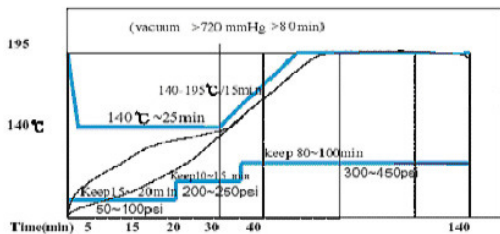
*AABUS = As agreed upon between user and supplier.

Recommended Press Cycle For IT158

(a) Cold Press Cycle



(b) Hot Press Cycle



Suggestion:

1. Heating rate of material between 80°C and 140°C is 1.3~1.8°C/min
2. Curing time: 165°C and above for >60min