ITEQ
INNOVATION • TEAMWORK • EXCELLENCE • QUALITY

IT-140GBS/IT-140GTC

Halogen Free Multifunctional Epoxy Laminate & Prepreg

IT-140G is a medium Tg (>140 ℃ by DSC) halogen free multifunctional epoxy resin system with good thermal reliability and CAF resistance. It's suitable for handheld and consumer applications. It's also Lead free compatible.

Key Features ==========

Advanced Resin Technology

It's a medium Tg (140 ℃ by DSC) halogen free multifunctional epoxy with modified Dicy cured. Br and Cl are less than 900ppm respectively. Total halogen contents are less than 1500ppm.

Good Thermal Resistance

Advanced halogen free resin system provides better thermal reliability compared to the similar resin system of competitor's. It's suitable for HDI and consumer application.

Lead-Free Assembly Compatible

It's suitable for thermal reliability needs, and Lead free assemblies with a maximum reflow temperature of 260 ℃..RoHS compliant.

Friendly Processing and CAF Resistance

Friendly to PCB process that users can easily handle the process by current equipments and chemicals.

Available in Variety of Constructions

Available in a various of constructions, copper weights and glass styles, including standard(HTE), RTF and VLP copper foil.

Applications

PC and Notebook

Memory Module

LCD Panels

Game Player

HDI and Multilayer PCB

Industrial Approval

UL 94 V-0

IPC-4101C Spec /24/ 127

RoHS Compliant

ITEQ Laminate/ Prepreg : IT-140GTC/IT-140GBS

IPC-4101A Spec / 24 / 127

LAMINATE (IT-140GTC)

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]	0.87 (5.0)	0.70 (4.00)	0.87 (5.0)	0.70 (4.00)	N/mm (lb/inch)	2.4.8
B. Standard profile copper foil						2.4.8.2
1. After Thermal Stress	1.57 (9.0)	0.80 (4.57)	1.57 (9.0)	1.05 (6.00)		2.4.8.3
2. At 125°C [257 F]	1.40 (8.0)	0.70 (4.00)	1.40 (8.0)	0.70 (4.00)		
3. After Process Solutions	1.23 (7.0)	0.55 (3.14)	1.23 (7.0)	0.80 (4.57)		
Volume Resistivity, minimum						
A. C-96/35/90	10^{10}	10^{6}	--	--	MΩ-cm	2.5.17.1
B. After moisture resistance	--	--	10^{10}	10^{4}		
C. At elevated temperature E-24/125	10^{10}	10^{3}	10^{10}	10^{3}		
Surface Resistivity, minimum						
A. C-96/35/90	10^{10}	10^{4}	--	--	MΩ	2.5.17.1
B. After moisture resistance	--	--	10^{10}	10^{4}		
C. At elevated temperature E-24/125	10^{10}	10^{3}	10^{10}	10^{3}		
Moisture Absorption, maximum	--	--	0.12	0.8	%	2.6.2.1
Dielectric Breakdown, minimum	--	--	60	40	kV	2.5.6
Permittivity (Dk, 50% resin content) (Laminate & Laminated Prepreg)						
A. 1MHz	4.3	5.4	4.3	5.4	--	2.5.5.9
B. 1GHz	4.3		4.3			
C. 2GHz	4.2		4.2			2.5.5.13
D. 5GHz	4.1		4.2			
E. 10GHz	4.1		4.1			
Loss Tangent (Df, 50% resin content) (Laminate & Laminated Prepreg)						
A. 1MHz	0.012	0.035	0.012	0.035	--	2.5.5.9
B. 1GHz	0.013		0.013			
C. 2GHz	0.013		0.013			2.5.5.13
D. 5GHz	0.014		0.013			
E. 10GHz	0.014		0.014			
Flexural Strength, minimum						
A. Length direction	--	--	430-460	415	N/mm^2 (lb/in^2)	2.4.4
	--	--	(62,350-66,700)	(60,190)		
B. Cross direction	--	--	370-400	345		
	--	--	(63,650-58,000)	(50,140)		
Arc Resistance, minimum	90	60	90	60	s	2.5.1
Thermal Stress 10 s at 288°C [550.4F],minimum						
A. Unetched	Pass	Pass Visual	Pass	Pass Visual	Rating	2.4.13.1
B. Etched	Pass	Pass Visual	Pass	Pass Visual		
Electric Strength, minimum (Laminate & Laminated Prepreg)	45	30	--	--	kV/mm	2.5.6.2
Flammability, (Laminate & Laminated Prepreg)	V-0	V-0	V-0	V-0	Rating	UL94
Glass Transition Temperature(DSC)	155	140 minimum	155	140 minimum	˚C	2.4.25
Decomposition Temperature	--	--	365	310 minimum	˚C	2.4.24.6 (5% wt loss)
X/Y Axis CTE (40℃ to 125℃)	--	--	12-14	--	ppm/˚C	2.4.24
Z-Axis CTE						
A. Alpha 1	--	--	35	60 maximum	ppm/˚C	2.4.24
B. Alpha 2	--	--	230	300 maximum	ppm/˚C	
C. 50 to 260 Degrees C	--	--	3.1	4.0 maximum	%	
Thermal Resistance						
A. T260	--	--	>60	--	Minutes	2.4.24.1
B. T288	--	--	>60	--	Minutes	
CAF Resistance	--	--	Pass	AABUS	Pass/Fail	2.6.25
Halogen Content, maximum						
-Chlorine	<900	900	<900	900	ppm	2.3.41
-Bromine	<900	900	<900	900		
-Chlorine+Bromine	<1500	1500	<1500	1500		

information available to users.