IT-158BS/IT-158TC

Multifunctional Filled Epoxy Resin and Phenolic-Cured Lead Free Laminate & Prepreg

IT-158 is a medium Tg (>150℃ by DSC) multifunctional filled epoxy with high thermal reliability and CAF resistance. It's suitable for industrial PCB, automobile and can pass 260℃ Lead free assembly.

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

Advanced Resin Technology

Industrial standard material with medium Tg (150℃ by DSC) multifunctional filled epoxy resin and excellent thermal reliability.

Lead-Free Assembly Compatible

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

Friendly Processing and CAF Resistance

Friendly to PCB process that users can easily handle the process by current equipment and chemical.

CAF Resistance

Excellent thermal reliability and CAF resistance providing long-term reliability for industrial boards and automobile application.

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

Game Player

Multilayer PCB

Automobile

Servers and Networking

Telecommunications

Heavy Copper Application

Industrial Approval

UL 94 V-0

IPC-4101C Spec / 99

RoHS Compliant

ITEQ Laminate/ Prepreg : IT-158TC / IT-158BS

IPC-4101C 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 (4.00)	0.88 (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						2.4.8.3
2. At 125°C [257 F]	1.58 (9.0)	0.80 (4.57)	1.66 (9.5)	1.05 (6.00)		
3. After Process Solutions	1.31 (7.5)	0.70 (4.00)	1.40 (8.0)	0.70 (4.00)		
	1.14 (6.5)	0.55 (3.14)	1.23 (7.0)	0.80 (4.57)		
Volume Resistivity, minimum						
A. C-96/35/90	$3.0x10^{10}$	10^6	--	--	MΩ-cm	2.5.17.1
B. After moisture resistance	--	--	$5.0x10^{10}$	10^4		
C. At elevated temperature E-24/125	$5.0x10^{10}$	10^3	$1.0x10^{10}$	10^3		
Surface Resistivity, minimum						
A. C-96/35/90	$1.0x10^{10}$	10^4	--	--	MΩ	2.5.17.1
B. After moisture resistance	--	--	$1.0x10^{10}$	10^4		
C. At elevated temperature E-24/125	$5.0x10^{10}$	10^3	$3.0x10^{10}$	10^3		
Moisture Absorption, maximum	--	--	0.08	0.5	%	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		4.4		--	2.5.5.9
B. 1GHz	4.3	5.4	4.3	5.4		
C. 2GHz	4.2		4.2			2.5.5.13
D. 5GHz	4.1		4.1			
E. 10GHz	4.0		4.0			
Loss Tangent (Df, 50% resin content) (Laminate & Laminated Prepreg)						
A. 1MHz	0.016		0.016		--	2.5.5.9
B. 1GHz	0.016	0.035	0.016	0.035		
C. 2GHz	0.017		0.017			2.5.5.13
D. 5GHz	0.018		0.018			
E. 10GHz	0.019		0.018			
Flexural Strength, minimum						
A. Length direction	--	--	450-480	415	N/mm^2 (lb/in^2)	2.4.4
	--	--	(65,250-69,600)	(60,190)		
B. Cross direction	--	--	370-400	345		
	--	--	(53,650-62,350)	(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 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	150 minimum	155	150 minimum	˚C	2.4.25
Decomposition Temperature	--	--	345	325 minimum	˚C	2.4.24.6 (5% wt loss)
X/Y Axis CTE (40℃ to 125℃)	--	--	11-13	--	ppm/˚C	2.4.24
Z-Axis CTE						
A. Alpha 1	--	--	40	60 maximum	ppm/˚C	2.4.24
B. Alpha 2	--	--	240	300 maximum	ppm/˚C	
C. 50 to 260 Degrees C	--	--	3.3	3.5 maximum	%	
Thermal Resistance						
A. T260	--	--	>60	30 minimum	Minutes	2.4.24.1
B. T288	--	--	>30	5 minimum	Minutes	
CAF Resistance	--	--	Pass	AABUS	Pass/Fail	2.6.25