



PRODUCTS

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IT-150GBS/IT-150GTC

Halogen Free Multifunctional Epoxy Resin and Lead Free Laminate & Prepreg

IT-150G is a medium Tg (>150 °C by DSC) halogen free multifunctional epoxy with high thermal reliability and CAF resistance. It's suitable for handheld and consumer applications, especially for 5 press cycles in Any layer HDI process. Besides, it can pass 260 °C Lead free assembly.

Key Features =====

Advanced Resin Technology

Industrial standard material with medium Tg (150 °C by DSC) halogen free multifunctional epoxy resin and excellent thermal reliability.

Excellent Thermal Resistance

Advanced halogen free resin system provides high thermal reliability, even 5 press cycles of Any layer HDI construction, especially for smart phone application.

Lead-Free Assembly Compatible

RoHS compliant and low CTE, that's suitable for high thermal reliability needs, and Lead free assemblies with a maximum reflow temperature of 260 °C.

Friendly Processing and CAF Resistance

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

Smart Phone and Cell Phone

HDI and Multilayer PCB

PC and Notebook

Memory Module

LCD Panels

Game Player

Servers and Networking

Telecommunications

Industrial Approval

UL 94 V-0

IPC-4101C Spec 24 / 128

RoHS Compliant

ITEQ Laminate/ Prepreg : IT-150GTC/IT-150GBS

IPC-4101A Spec / 24 / 128

LAMINATE (IT-150GTC)

| 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] B. Standard profile copper foil 1. After Thermal Stress 2. At 125°C [257 F] 3. After Process Solutions | 0.87 (5.0) | 0.70 (4.00) | 0.87 (5.0) | 0.70 (4.00) | N/mm (lb/inch) | 2.4.8 2.4.8.2 2.4.8.3 |
| Volume Resistivity, minimum A. C-96/35/90 B. After moisture resistance C. At elevated temperature E-24/125 | 10 ¹⁰ -- 10 ¹⁰ | 10 ⁶ -- 10 ³ | -- 10 ¹⁰ 10 ¹⁰ | -- 10 ⁴ 10 ³ | MΩ-cm | 2.5.17.1 |
| Surface Resistivity, minimum A. C-96/35/90 B. After moisture resistance C. At elevated temperature E-24/125 | 10 ¹⁰ -- 10 ¹⁰ | 10 ⁴ -- 10 ³ | -- 10 ¹⁰ 10 ¹⁰ | --- 10 ⁴ 10 ³ | MΩ | 2.5.17.1 |
| 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 B. 1GHz C. 2GHz D. 5GHz E. 10GHz | 4.5 4.5 4.4 4.3 4.3 | 5.4 | 4.5 4.5 4.5 4.3 4.3 | 5.4 | -- | 2.5.5.9 2.5.5.13 |
| Loss Tangent (Df, 50% resin content) (Laminate & Laminated Prepreg) A. 1MHz B. 1GHz C. 2GHz D. 5GHz E. 10GHz | 0.011 0.011 0.012 0.012 0.013 | 0.035 | 0.011 0.011 0.011 0.012 0.013 | 0.035 | -- | 2.5.5..9 2.5.5.13 |
| Flexural Strength, minimum A. Length direction B. Cross direction | -- -- -- | -- -- -- | 470-500 (68,150-72,500) 400-430 (62,350-66,700) | 415 (60,190) 345 (50,140) | N/mm ² (lb/in ²) | 2.4.4 |
| Arc Resistance, minimum | 90 | 60 | 90 | 60 | s | 2.5.1 |
| Thermal Stress 10 s at 288°C [550.4F], minimum A. Unetched B. Etched | Pass Pass | Pass Visual Pass Visual | Pass Pass | Pass Visual Pass Visual | Rating | 2.4.13.1 |
| 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 | -- | -- | 365 | 325 minimum | °C | 2.4.24.6 (5% wt loss) |
| X/ Y Axis CTE (40°C to 125°C) | -- | -- | 11-13 | -- | ppm/°C | 2.4.24 |
| Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 to 260 Degrees C | -- -- -- | -- -- -- | 35 230 2.8 | 60 maximum 300 maximum 3.5 maximum | ppm/°C ppm/°C % | 2.4.24 |
| Thermal Resistance A. T260 B. T288 | -- -- | -- -- | >60 >60 | 30 minimum 5 minimum | Minutes Minutes | 2.4.24.1 |
| CAF Resistance | -- | -- | Pass | AABUS | Pass/Fail | 2.6.25 |
| Halogen Content, maximum -Chlorine -Bromine -Chlorine+Bromine | <900 <900 <1500 | 900 900 1500 | <900 <900 <1500 | 900 900 1500 | ppm | 2.3.41 |

The above data and fabrication guide provide designers and PCB shop for their reference. We believe that these information are accurate, however, the data may vary depend on the test methods and specification used. The actual sales of the product should be according to specification in the agreement between ITEQ and its customer. ITEQ reserves the right to revise its data at any time without notice and maintain the best information available to users.