



IT-180ABS/IT-180ATC

High Tg, Low CTE, Multifunctional Epoxy Resin Laminate & Prepreg

IT-180A is an advanced high Tg (175 °C by DSC) multifunctional epoxy with low CTE, high thermal reliability and CAF resistance. It's design for high layer PCB and can pass 260 °C Lead free assembly and sequential lamination process.

Key Features =====

Advanced High Tg Resin Technology

Industrial standard material with high Tg (175 °C by DSC) multifunctional 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 °C.

Friendly Processing and CAF Resistance

Friendly PCB process like high Tg FR4. Users can short the learning curve when using this material.

CAF Resistance

Low thermal expansion coefficient (CTE) helps to 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

Multilayer and High Layer PCB

Automobile

Backplanes

Servers and Networking

Telecommunications

Data Storage

Heavy Copper Application

Industrial Approval

UL 94 V-0

IPC-4101C Spec / 99/ 101/ 126

RoHS Compliant

Global Availability

| Area | Address | Contact e-mail | TEL |
|-------------|---|---|--|
| Taiwan | 22,Kung Yen 1st Rd. Ping Chen Industry Zone. Ping Chen, Taoyuan, Taiwan, R.O.C. | Sales: jimmy.chiang@iteq.com.tw Technician: tompeng@iteq.com.tw | 886-3-4152345 #3000 886-3-4152345 #3203 |
| East China | Chun Hui Rd., Xishan Economic Development Zone, Wuxi City, Jiangsu Province, China | Sales: lian@wxmail.iteq.com.cn Technician: jimmypeng@wxmail.iteq.com.cn | 86-510-8223-5888 #3200 86-510-8223-5888 #3000 |
| South China | 168, Dongfang Road, Nanfang Industrial Park, Beice Village, Humen Town, Dongguan City, Guangdong Province, China | Sales: lo@iteq.com.cn Technician: calvinwu@iteq.com.cn | 86-769-88623268 #320 86-769-88623268 #309 |
| Japan | No.2, Huafang Rd, Yonghe Economic Zone, Economic and Technological Development Zone, Guangzhou, Guangdong Province, China | Sales: Stephen@iteq.com.cn Technician: anderson@iteq.com.tw | 86-20-6286-8088 #8027 886-3-4152345 #5388 |
| USA | Tapco Circuit Supply 1225 Greenbriar Drive, Suite A Addison, IL 60101, USA | Sales: mshields@tapcocircuitsupply.com Technician: bmacdonald@tapcocircuitsupply.com | 1-614-937-5205 1-603-583-2888 |
| Europe | ITEQ Europe, Via L. Pergher, 16 38121 Trento, Italy | Sales: serena@iteqeuropa.eu Technician: service@iteqeuropa.eu | 39-0461-820526 39-0461-820526 |

ITEQ Laminate/ Prepreg : IT-180ATC / IT-180ABS

IPC-4101C Spec / 99 / 101 / 126

LAMINATE(IT-180ATC)

| 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 | 0.88 (5.0) | 0.70 (4.00) | 0.88 (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 | 3.0x10 ¹⁰ | 10 ⁶ | -- 3.0x10 ¹⁰ | -- 10 ⁴ | 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 | 3.0x10 ¹⁰ | 10 ⁴ | -- 3.0x10 ¹⁰ | -- 10 ⁴ | MΩ | 2.5.17.1 |
| Moisture Absorption, maximum | -- | -- | 0.12 | 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 B. 1GHz C. 2GHz D. 5GHz E. 10GHz | 4.4 4.4 4.2 4.1 4.0 | 5.4 | 4.4 4.4 4.3 4.1 4.1 | 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 | 0.015 0.015 0.015 0.016 0.017 | 0.035 | 0.014 0.015 0.015 0.016 0.016 | 0.035 | -- | 2.5.5.9 2.5.5.13 |
| Flexural Strength, minimum A. Length direction B. Cross direction | -- -- -- | -- -- -- | 500-530 (72,500-76,850) 410-440 (59,450-63,800) | 415 (60,190) 345 (50,140) | N/mm ² (lb/in ²) | 2.4.4 |
| Arc Resistance, minimum | 125 | 60 | 125 | 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) | 175 | 170 minimum | 175 | 170 minimum | °C | 2.4.25 |
| Decomposition Temperature | -- | -- | 345 | 340 minimum | °C | 2.4.24.6 (5% wt loss) |
| X/Y Axis CTE (40°C to 125°C) | -- | -- | 10-13 | -- | PPM/°C | 2.4.24 |
| Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 to 260 Degrees C | -- -- -- | -- -- -- | 45 210 2.7 | 60 maximum 300 maximum 3.0 maximum | PPM/°C PPM/°C % | 2.4.24 |
| Thermal Resistance A. T260 B. T288 | -- -- | -- -- | >60 >30 | 30 minimum 15 minimum | Minutes Minutes | 2.4.24.1 |
| CAF Resistance | -- | -- | Pass | AABUS | Pass/Fail | 2.6.25 |

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.