



建滔積層板有限公司 KINGBOARD LAMINATES LTD

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TECHNICAL INFORMATION 技術資料

KB-6150

KB-6150 是一種環氧玻璃布基覆銅板，可用作單面 / 雙面線路板和多層線路板的芯板。具有良好的阻燃性能及尺寸穩定性。

KB-6150 is glass fabric based epoxy resin copper clad laminate, which could be processed into single/double sided printed circuit board or core for multilayer printed circuit board. It has good performances in flame resistance and dimensional stability.

| Type 型號 | Grade 級別 | Construction 組成 |
|---------|------------------|---|
| KB-6150 | ANSI (NEMA) FR-4 | 玻璃布、銅箔、環氧樹脂 Glass fabric, Copper foil, Epoxy resin |

Features 特點

- 良好的尺寸穩定性**
Excellent dimensional stability
 經熱處理後其尺寸變化小，可保證線路的精確定位。受熱時其厚度方面的尺寸變化小，可提高金屬化孔的可靠性。
 Small dimension and thickness changes after heated could warrant precise positioning of circuits and improve the reliability of PTH.
- 良好的耐濕、熱性能**
Excellent heat and moisture resistance
 濕、熱條件下能有效抵抗離子遷移，能經受加嚴的濕、熱沖擊而不會產生白斑。
 Ion-migration is effectively minimized in hot and humid environment avoiding the occurrence of measling.
- 良好的厚度均勻性**
Excellent thickness uniformity
 良好的厚度均勻性可提高表面安裝元器件的裝配位置精度，有利于多層板層壓時的厚度控制。
 Excellent thickness uniformity improves surface mounting precision which is propitious especially to the thickness control in multilayer PCB.
- 可提供多種CTI值**
Different CTI grade available upon request
CTI: 125V/175V/400V/600V

Standard Configuration 標準數據

- Thickness 厚度** : **0.1 mm - 3.2mm (IPC-4101 Class B)**
- Copper Cladding 銅箔厚度** : **18 μ m, 35 μ m, 70 μ m**
- Regular Size (mm) 常規尺寸** : **914 X 1220, 1020 X 1220, 1041 X 1245, 1067 X 1220**
- Other Size 其他尺寸** : **As specified by customers**

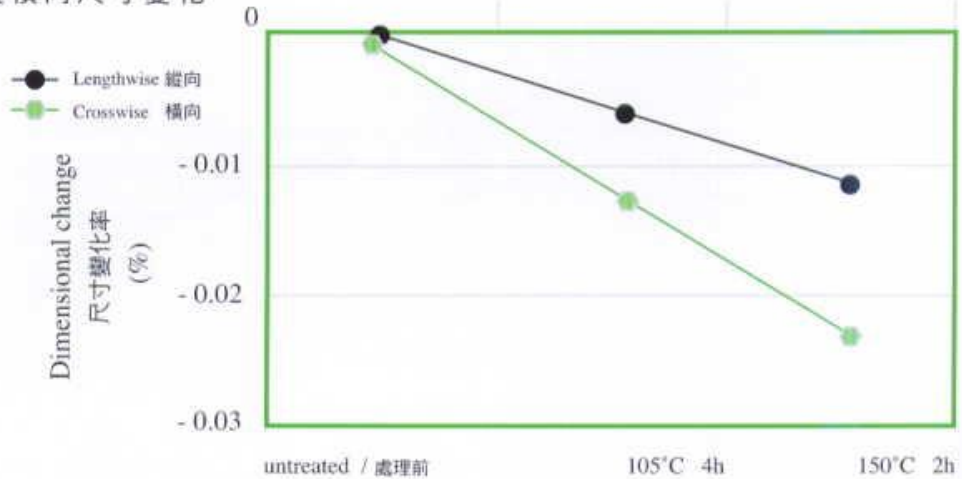
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Performance 表現

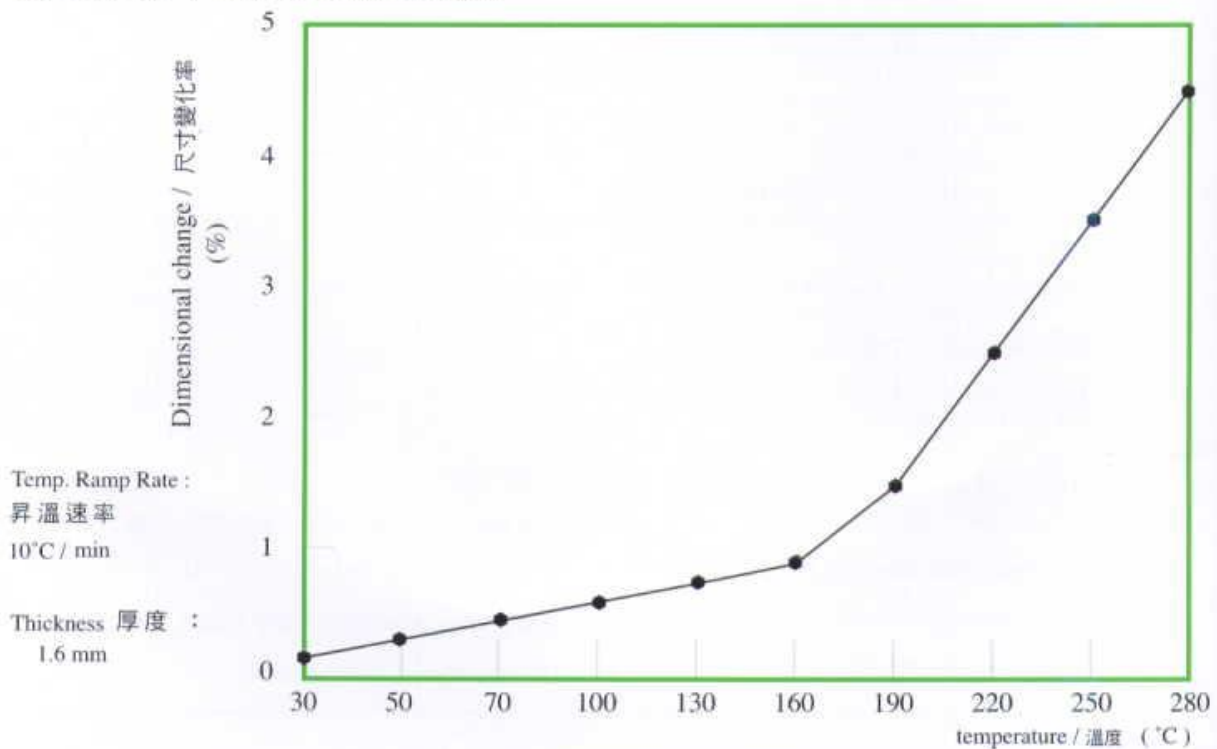
Dimensional change in crosswise and lengthwise direction after heat treatment

熱處理後板材縱橫向尺寸變化



Relationship between change in thickness and temperature

厚度方向尺寸變化率與溫度的關係



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金屬化孔耐熱沖擊性

Heat resistance of PTH

試驗條件：260°C 油中浸 10 秒 → 20°C 流水中沖 10 秒 → 20°C 溶劑中浸 10 秒，循環直至斷線為止。

Test Condition : dip in oil (260°C) for 10 seconds → wash in flowing water (20°C) for 10 seconds
→ dip in solution (20°C) for 10 seconds, recycle the process until PTH break off.

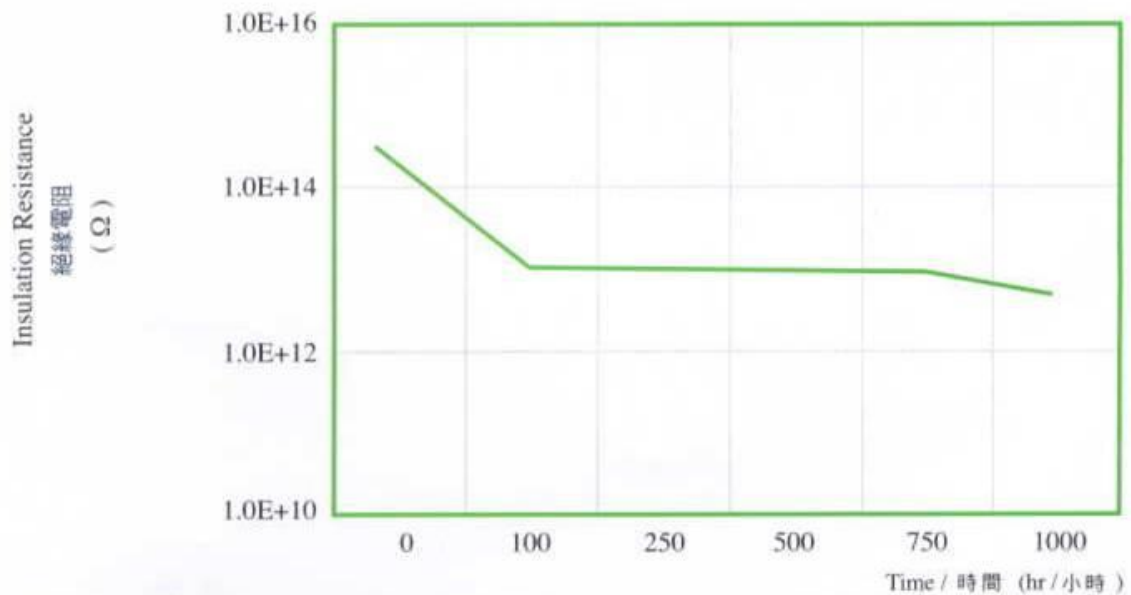
| | | |
|----------------------------------|------------------|------------------|
| 鍍層厚度 Thickness of PTH plating | 25 μm | 40 μm |
| 循環次數 Number of cycles | 36 | 69 |

耐金屬離子遷移性

Resistance of ion-migration

在濕、熱(40°C, RH93%)條件下，施加直流電壓(500V)處理後測定絕緣電阻。

Test insulation resistance after applied with DC 500V in condition of 40°C, RH93%.





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General Properties 一般特性

| Properties 特性 | Unit 單位 | Test Condition 處理條件 | IPC-4101 Testing Method IPC-4101測試方法 | IPC-4101 Requirement IPC-4101要求 | Typical Value 典型值 |
|------------------------------------|-------------------|-------------------------|--|--|--|
| Flexural Strength 屈曲強度 | Kg/m ² | Lengthwise Crosswise | 2.4.4 | above 4.23 X 10 ⁷ above 3.52 X 10 ⁷ | 5.58 X 10 ⁷ 4.54 X 10 ⁷ |
| Peel Strength (1 oz) 抗剝強度 (1安士) | Kg/cm | A | 2.4.8 | above 1.43 | 2.0 |
| Glass Transition (Tg) 玻璃化轉變度 | °C | E2 / 105 DSC | 2.4.25 | above 130 | 135 |
| Flammability 耐燃性 | Sec/秒 | E24 / 23 | 2.3.10 | Average Burn \leq 5 Max Burn \leq 10 | 1.6 7 |
| Thermal Stress 耐焊性 | Sec/秒 | Float 288°C | 2.4.13.1 | above 20 | above 180 |
| Surface Resistance 表面電阻 | M Ω | C96/35/90 | 2.5.17.1 | above 1.0 X 10 ⁴ | 1.0 X 10 ⁷ |
| Volume Resistivity 體積電阻 | M Ω -cm | C96/35/90 | 2.5.17.1 | above 1.0 X 10 ⁶ | 1.0 X 10 ⁹ |
| Permittivity 介電常數 | — | Etched/@1MHZ | 2.5.5.3 | less than 5.4 | 4.6 |
| Loss Tangent 介質損耗 | — | Etched/@1MHZ | 2.5.5.3 | less than 0.035 | 0.02 |
| Moisture Absorption 吸水性 | % | D24/23 | 2.6.2.1 | less than 0.5 | 0.1 |

Remarks: Typical values for reference only 註：典型值只作參考