

# VT-4B Series

## Datasheet 技术资料表

Aluminum Base Laminate / RCC / RCF

铝基板/背胶铜箔/背胶薄膜

### ● General Information 概述

Ventec offers 3 types of IMS materials without glass reinforced which have below features

腾辉提供 3 种型号的无玻璃布增强的绝缘散热材料，具体如下：

- VT-4B3 Laminate / VT-4B3 RCC&RCF: Thermal conductivity -- 3.0W/mK
- VT-4B4 Laminate / VT-4B4 RCC&RCF: Thermal conductivity -- 3.8W/mK

- Ceramic Filled 陶瓷填充
- Halogen Free 无卤
- Flammability 阻燃 (UL94 V0)
- UL MOT 130°C
- Bending Application Suitable 可静态弯折



### ● Application

- Ultra bright LED Substrate
- Power Conversion
- PDP, LED, Regulator for TV
- Monitor Drives
- Rectifier, Power supply

### 应用

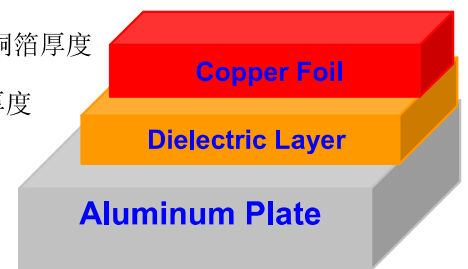
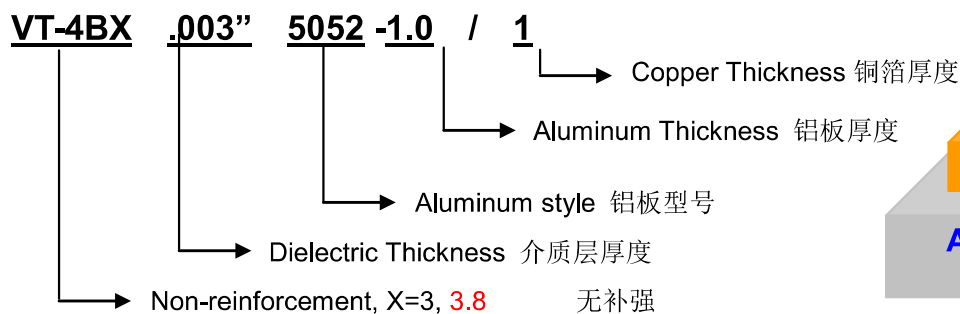
- 超亮 LED
- 电源转换器
- 液晶面板、背光源、稳压器
- 监视器驱动器
- 整流器、电源

### ● Storage Condition & Shelf Life 存储条件&保存期限

|                   |                   | RCC&RCF       |              | Laminate             |
|-------------------|-------------------|---------------|--------------|----------------------|
| Storage Condition | Temperature       | < 23°C (73°F) | < 5°C (41°F) | Room                 |
|                   | Relative Humidity | < 55%RH       | /            | /                    |
| Shelf Life        |                   | 2 Months      | 4 Months     | 24 Months (airproof) |

Note: The RCC&RCF exceeding shelf life should be retested. 过期的背胶铜箔和背胶薄膜在使用前需要复测以确认特性。

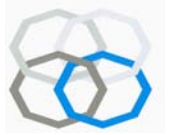
### ● Designation of Laminate 料号编码





| Item                      | Test Method<br>(IPC-TM-650)  | Unit                      | VT-4B3              |       |       |       | VT-4B4 |       |                     |  |  |
|---------------------------|------------------------------|---------------------------|---------------------|-------|-------|-------|--------|-------|---------------------|--|--|
|                           |                              |                           | 50um                | 75um  | 100um | 125um | 50um   | 75um  | 100um               |  |  |
| Thermal Conductivity      | ISO 22007-2                  | W/m*K                     | 3.0                 |       |       |       |        |       | 3.8                 |  |  |
| Thermal Impedance         | ISO 22007-2                  | °C<br>*in <sup>2</sup> /W | 0.027               | 0.040 | 0.053 | 0.067 | 0.022  | 0.032 | 0.042               |  |  |
|                           | DSC                          | °C                        | 130                 |       |       |       |        |       | 120                 |  |  |
| Tg                        | 2.4.25                       | °C                        | 380                 |       |       |       |        |       | 380                 |  |  |
| Td                        | ASTM D3850                   | °C                        | ≥5                  |       |       |       |        |       | ≥5                  |  |  |
| Thermal Stress            | 2.4.13.1                     | Minute                    | ≥5                  |       |       |       |        |       | ≥5                  |  |  |
| Hi-pot Withstand          | 2.5.7                        | Volt                      | 2000                | 3500  | 4000  | 5000  | 2000   | 3000  | 3500                |  |  |
| Dielectric Strength       | AC                           | V/mil                     | 1000                |       |       |       |        |       | 1000                |  |  |
|                           | Before Tg                    | ppm/°C                    | 34                  |       |       |       |        |       | 34                  |  |  |
| CTE<br>(X/Y/Z) axis       | After Tg                     | ppm/°C                    | 88                  |       |       |       |        |       | 88                  |  |  |
|                           | Total<br>expansion(50-260°C) | %                         | 1.662               |       |       |       |        |       | 1.662               |  |  |
| Dk (1MHz)                 | C-24 / 23 / 50               | -                         | 4.8                 |       |       |       |        |       | 4.8                 |  |  |
|                           | C-24 / 23 / 50               | -                         | 0.016               |       |       |       |        |       | 0.016               |  |  |
| Df (1MHz)                 | After Moisture               | MΩ-cm                     | 5.0×10 <sup>8</sup> |       |       |       |        |       | 5.0×10 <sup>8</sup> |  |  |
|                           | E-24/125                     |                           | 3.0×10 <sup>7</sup> |       |       |       |        |       | 3.0×10 <sup>7</sup> |  |  |
| Volume Resistance         | After Moisture               | MΩ                        | 2.0×10 <sup>7</sup> |       |       |       |        |       | 2.0×10 <sup>7</sup> |  |  |
|                           | E-24/125                     |                           | 5.0×10 <sup>6</sup> |       |       |       |        |       | 5.0×10 <sup>6</sup> |  |  |
| Peel Strength (1oz<br>Cu) | As received                  | Lb/in                     | 11                  |       |       |       |        |       | 7                   |  |  |
| CTI                       | As received                  | Volt                      | 600                 |       |       |       |        |       | 600                 |  |  |
|                           | As received                  | -                         | V0                  |       |       |       |        |       | V0                  |  |  |
| Flammability              | Electric                     | °C                        | 130                 |       |       |       |        |       | 130                 |  |  |
|                           | Mechanical                   | °C                        | 130                 |       |       |       |        |       | 130                 |  |  |

Note: All test data provided are typical values but not intended to be specification values. 所有提供的测试数据均为典型值, 非特定规范。



# VT-4B Series

● **Availability** 产品规格

➤ **Laminate**

| Item                  | VT-4B3   | VT-4B4                                  |  |
|-----------------------|--|---|--|
| <b>Dielectric</b>     | .002"(50um) .003"(75um)<br>.004"(100um) .005"(125um) | .002"(50um) .003"(75um)<br>.004"(100um) |  |
| <b>Standard Size</b>  | 18"*24" (457mm*610mm) 18"*48" (457mm*1220mm)         |   |  |
|                       | 20"*24" (508mm*610mm) 20"*48" (508mm*1220mm)         |   |  |
|                       | 21"*24" (533mm*610mm) 21"*48" (533mm*1220mm)         |   |  |
|                       | 24"*24" (559mm*610mm) 24"*48" (559mm*1220mm)         |   |  |
| <b>Copper</b>         | 1/3oz Hoz 1oz 2oz 3oz 4oz 6oz                        |   |  |
| <b>Aluminum</b>       | 0.5mm 0.8mm 1.0mm 1.2mm 1.5mm 2.0mm 3.0mm            |   |  |
| <b>Aluminum Alloy</b> | 1100 5052 or as required                             |   |  |

➤ **RCC**

| Item                 | VT-4B3   | VT-4B4                  |  |
|----------------------|--|-------------------------|--|
| <b>Dielectric</b>    | .002"(50um) .003"(75um) .004"(100um)   | .002"(50um) .003"(75um) |  |
| <b>Standard Size</b> | Width: 25"(635mm)<br>Length: 15.7"(400mm), 19.7"(500mm), 21.0"(533mm), 23.6"(600mm), or as required (Max 24.0"(610mm)) |                         |  |
| <b>Copper</b>        | 1/3oz Hoz 1oz 2oz  |                         |  |

➤ **RCF**

| Item                 | VT-4B3  | VT-4B4                  |  |
|----------------------|---|-------------------------|--|
| <b>Dielectric</b>    | .002"(50um) .003"(75um) .004"(100um)  | .002"(50um) .003"(75um) |  |
| <b>Flow-in</b>       | 70~250mil   | 10~50mil                |  |
| <b>Standard Size</b> | Width: 25"(635mm)<br>Length: 15.7"(400mm), 19.7"(500mm), 21.0"(533mm), 23.6"(600mm), or as required (Max 49.0"(1245mm)) |                         |  |
| <b>PET film</b>      | 75um  |                         |  |

➤ **Protective Film for Aluminum Plate**

| Type                  | Material  | Operation Temperature |
|-----------------------|-----------|-----------------------|
| Standard Type         | PET       | 170°C                 |
| High Temperature Type | Polyimide | 270°C                 |