

# VT-4B3 (Copper base)

Version: Preliminary 2

## 技术资料表

### 概述

Ventec offers a copper based IMS material without glass reinforcement which has below features

- Copper Base Laminate
- Thermal Conductivity – 3W/mK, Ceramic Filled
- Halogen Free
- Flame Retardant
- MOT 130°C

### 应用

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

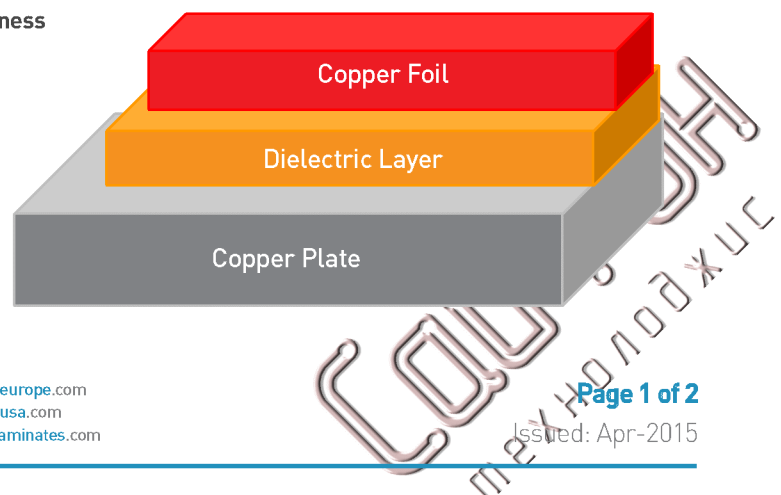
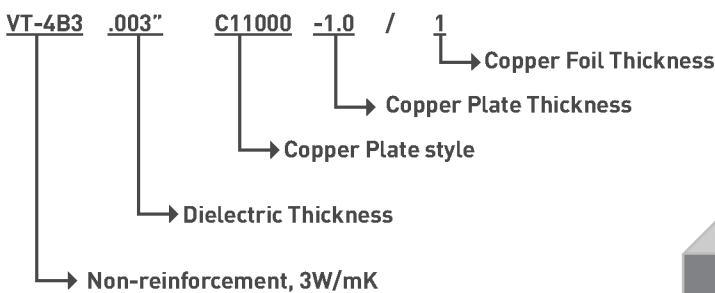
### 产品规格

- Copper Plate: 0.5mm, 0.8mm, 1.0mm, 1.5mm, 2.0mm
- Copper Foil: Hoz, 1oz, 2oz, 3oz, 4oz, 6oz
- Dielectric layer: 50um, 75um, 100um

### 存储条件&保存期限

|                   |                   | Laminate             |
|-------------------|-------------------|----------------------|
| Storage Condition | Temperature       | Room                 |
|                   | Relative Humidity | /                    |
| Shelf Life        |                   | 12 Months (airproof) |

### 料号编码



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## DATASHEET

### 基板特性

| Laminate Properties     |                      | Test Method<br>(IPC TM-650)<br>or as noted | Unit                   | 1.0mm Plate/ 100um Die/ 1oz copper foil |                             |
|-------------------------|----------------------|--|------------------------|---|-----------------------------|
|                         |                      |  |                        | VT-4B3<br>(Cu base C11000)              | VT-4B3<br>(Al base 5052H32) |
| Thermal Conductivity    |                      | ISO 22007-2                                | W/m*K                  | 3                                       | 3                           |
| Total Thermal Impedance |                      | ISO 22007-2                                | °C *in <sup>2</sup> /W | 0.056                                   | 0.063                       |
| Tg                      | DSC                  | 2.4.25                                     | °C                     | 130                                     | 130                         |
| Td                      | TGA                  | ASTM D3850                                 | °C                     | 380                                     | 380                         |
| Thermal Stress          | 288°C solder dipping | 2.4.13.1                                   | Minute                 | 4                                       | ≥5                          |
| Hi-pot withstand        | DC                   | 2.5.7                                      | Volts                  | 6000                                    | 3500                        |
| Dielectric Strength     | AC                   | 2.5.6.2                                    | V/mil                  | 1500                                    | 1000                        |
| Dk (1MHz)               | C-24 / 23 / 50       | 2.5.5.3                                    | -                      | 4.8                                     | 4.8                         |
| Df (1MHz)               | C-24 / 23 / 50       | 2.5.5.3                                    | -                      | 0.016                                   | 0.016                       |
| Volume Resistance       | After Moisture       | 2.5.17.1                                   | 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>         |
| Surface Resistance      | After Moisture       | 2.5.17.1                                   | 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           | As received          | 2.4.8                                      | Lb/in                  | 11                                      | 11                          |
| CTI                     | As received          | ASTM D3638                                 | Volts                  | 600                                     | 600                         |
| Flammability            | As received          | UL 94                                      | -                      | V0                                      | V0                          |

Note: All test data provided are typical values and not intended to be specification values.

Note: Ventec provide C11000 as a standard copper plate.

### Copper Plate Consideration

| Alloy      | Thermal Conductivity (W/mK) | CTE (ppm/°C) | Density (g/cm <sup>3</sup> ) | Modulus (GPa) | Yield Strength (MPa) |
|------------|-----------------------------|--------------|------------------------------|---------------|----------------------|
| Cu-C11000  | 386                         | 17           | 8.9                          | 44            | 310                  |
| Al-5052H32 | 138                         | 25           | 2.7                          | 26            | 215                  |

### Copper Plate Protective Film Selection Guide

- PET film: Standard protective film, operation temperature up to 170°C
- PI film: Special protective film, operation temperature up to 270°C