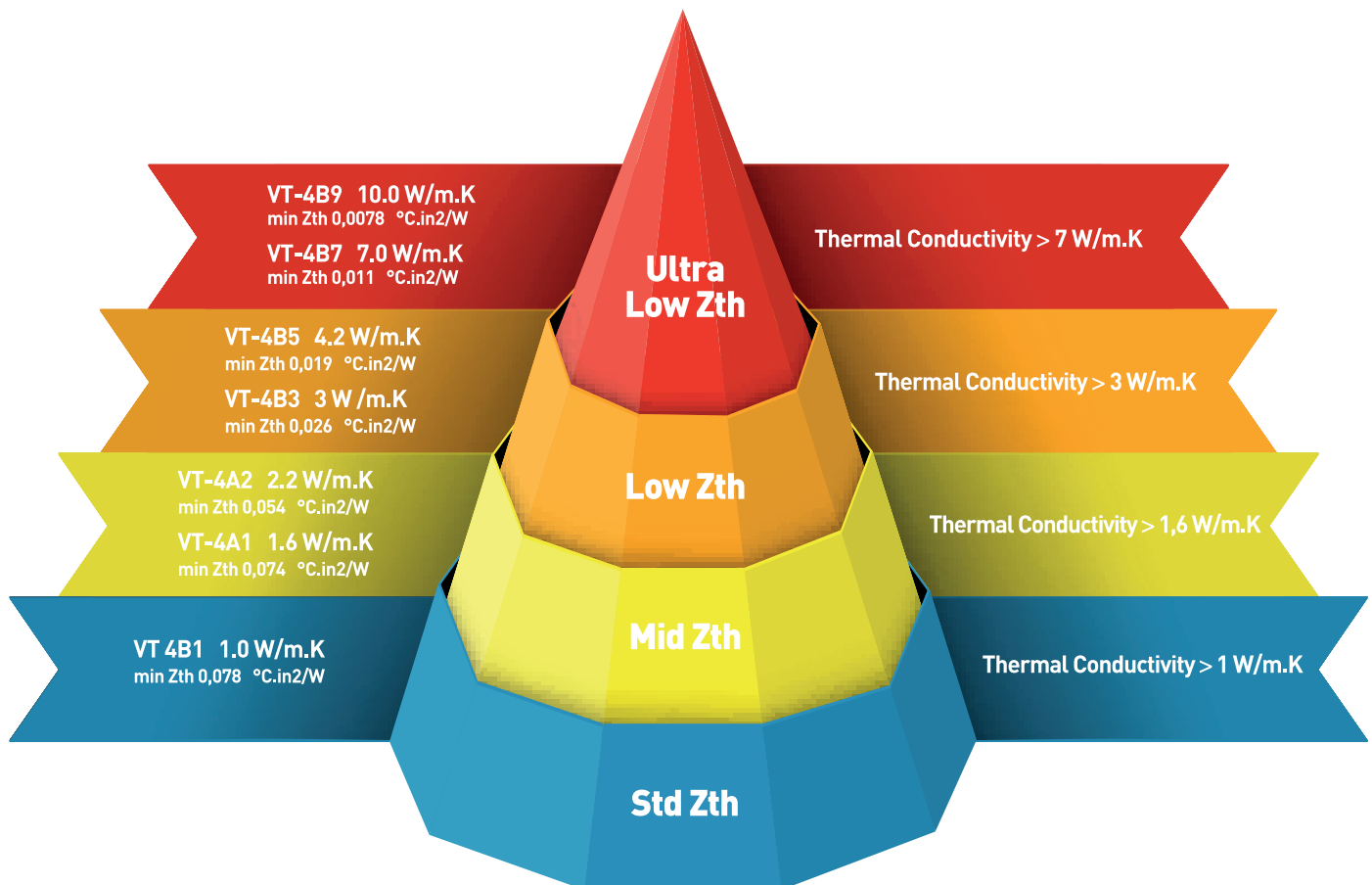




# VT-4B5 SP

## Aluminum Base Laminate

UL Approval: E214381    Version: B1



### CORPORATE HEADQUARTERS

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### General Information

- > Thermal conductivity -- 4.2W/mK
- > Ceramic Filled
- > Halogen Free
- > Flammability UL94 V0
- > MOT 130°C
- > Selective Preference Dielectric for Ultra Low Thermal Resistance

### Application

- > Matrix LED for Auto Bulb
- > High Power LED for Projector
- > Electric Power Steering

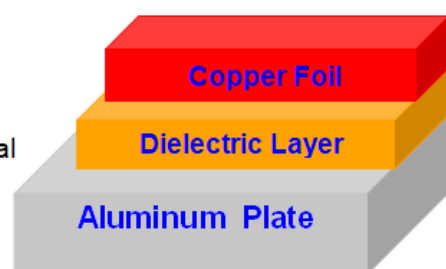
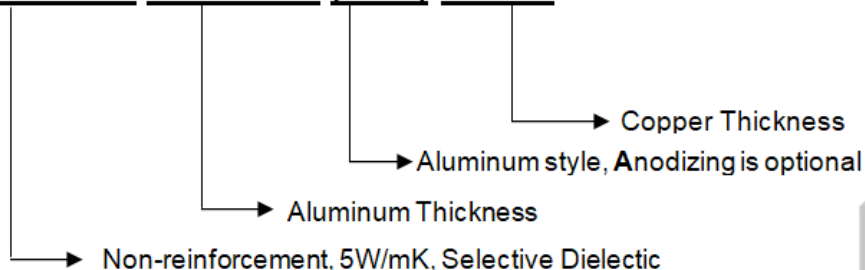
### Storage Condition & Shelf Life

|                   |                   | Laminate  |
|-------------------|-------------------|-----------|
| Storage Condition | Temperature       | Room      |
|                   | Relative humidity | /         |
| Shelf Life        |                   | 24 months |

The RCF exceeding shelf life should be retested.

### Designation of IMS Laminate

**VT-4B5 SP 1.0mm Alu (5052) 1oz Cu**



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### Laminate Properties

| Item                 |                    | Test Method<br>(IPC-TM-650) | Unit                  | VT-4B5 SP |
|----------------------|--------------------|-----------------------------|-----------------------|-----------|
| Thermal Conductivity |                    | ISO22007-2                  | W/m*K                 | 4.2       |
| Thermal Impedance    |                    | ISO22007-2                  | °C*in <sup>2</sup> /W | 0.015     |
| Tg                   | DSC                | 2.4.25                      | °C                    | 120       |
| Td                   | TGA                | ASTM D3850                  | °C                    | 380       |
| Thermal Stress       | Solder Dip @ 288°C | 2.4.13.1                    | Minute                | ≥5        |
| Hi-Pot Withstand     | DC                 | 2.5.7.2                     | V                     | 1000      |
| Breakdown Voltage    | AC                 | 2.5.6.3                     | V                     | 3000      |
| Dk @ 1MHz            | C-24 /23 / 50      | 2.5.5.3                     | —                     | 4.8       |
| Df @ 1MHz            | C-24/ 23 / 50      | 2.5.5.3                     | —                     | 0.016     |
| Volume Resistance    | After Moisture     | 2.5.17.1                    | MΩ-cm                 | 5.0E+8    |
|                      | E-24/125           |                             |                       | 3.0E+7    |
| Surface Resistance   | After Moisture     | 2.5.17.1                    | MΩ                    | 2.0E+7    |
|                      | E-24/125           |                             |                       | 5.0E+6    |
| Peel strength (1oz)  | As Received        | 2.4.8                       | Lb/in                 | 7         |
| CTI                  | As Received        | ASTM D3638                  | V                     | 600       |
| Flammability         | As Received        | UL 94                       | Rating                | V0        |
| RTI                  | Electric           | UL 94                       | °C                    | 130       |
|                      | Mechanical         | UL 94                       | °C                    | 130       |

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

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## Aluminum Base Laminate

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### Availability

### Laminate

| Item               |          | Availability                                                                 |
|--------------------|----------|------------------------------------------------------------------------------|
| Standard Size      | Imperial | 18.11*24.02, 20.08*24.02, 20.98*24.02, 18.11*48.03, 20.02*48.03, 20.98*48.03 |
|                    | Metric   | 460*610, 510*610, 533*610, 460*1220, 510*1220, 533*1220                      |
| Copper Weight      |          | 1/3oz, Hoz, 1oz, 2oz, 3oz, 4oz, 6oz                                          |
| Aluminum Thickness |          | 0.6mm, 0.8mm, 1.0mm, 1.2mm, 1.5mm, 2.0mm, 3.0mm                              |
| Aluminum Alloy     |          | 1100, 5052, or as required                                                   |

### Protective Film for Aluminium Plate

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

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