# EM-827 / EM-827B
## High Tg / Low CTE / Lead Free

- Applications include: server, computer, consumer electronics
- Excellent thermal stability for lead-free process
- Low Z-axis CTE < 3.0% (50~260°C)
- RoHS Compliant
- UL File: E150504
- Applicable IPC Slash Sheets: IPC-4101 /98, /99, /101, /126; IPC-4103 /250, /550

### *Basic Laminate Property*

| Property | Item | | Typical Value | Unit | Test Condition | IPC-TM-650 |
|---|---|---|---|---|---|---|
| Thermal | Tg | | 175 | °C | DSC | 2.4.25 |
| | | | 160 | °C | TMA | 2.4.24 |
| | | | 185 | °C | DMA | 2.4.24.4 |
| | CTE, X/Y-axis | | 12/15 | ppm/°C | < Tg, TMA | 2.4.24.5 |
| | CTE, Z-axis | | 40~45 | ppm/°C | < Tg, TMA | 2.4.24 |
| | | | 200~220 | ppm/°C | > Tg, TMA | |
| | Z-axis Expansion | | 2.6 | % | 50~260°C | 2.4.24 |
| | Td | | 350 | °C | TGA (5% W.L) | 2.4.24.6 |
| | T288 | | >25 | min. | Clad | 2.4.24.1 |
| | | | >30 | min. | Etched | |
| | Thermal Conductivity | | 0.44 | W/m.K | - | ASTM D5470 |
| Electrical | Dk (R/C: 50%) | 1 MHz | 4.8 | - | C-24/23/50 | 2.5.5.9 |
| | | 1 GHz | 4.3 | - | | |
| | Df (R/C: 50%) | 1 MHz | 0.018 | - | C-24/23/50 | 2.5.5.9 |
| | | 1 GHz | 0.019 | - | | |
| | Volume Resistivity | | $>10^{10}$ | MΩ-cm | C-96/35/90 | 2.5.17.1 |
| | Surface Resistivity | | $>10^{9}$ | MΩ | C-96/35/90 | 2.5.17.1 |
| Physical | Water Absorption | | 0.15 | % | E-1/105+D-24/23 | 2.6.2.1 |
| | Peel Strength (HTE) | H oz | 6.5 | lb/in | As Received | 2.4.8 |
| | | | 6.5 | lb/in | After Thermal Stress | |
| | | 1 oz | 8.5 | lb/in | As Received | |
| | | | 8.5 | lb/in | After Thermal Stress | |
| | Flexural Strength | Warp | 510~570 | MPa | As Received | 2.4.4 |
| | | Fill | 450~500 | MPa | As Received | |
| | Flame Resistance | | V-0 | - | A & E-24/125 | UL-94 |

Above typical values are tested under specified constructions and not intended for specification.

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