



Low CTE Middle Tg Material

EM-825/ EM-825B

- Low Z-axis CTE < 3.5% (50~260 °C)
- Low moisture absorption
- Excellent thermal stability for lead-free processing
- For general application

Basic Laminate Property

| Item | IPC-TM-650 | Test condition | Unit | Typical Value | |
|-------------------------------|------------|-----------------|----------------------|-------------------|---------|
| Glass transition temp. | 2.4.25 | DSC | °C | 150 | |
| CTE, X-, Y-axis | 2.4.24 | Pre-Tg, TMA | ppm/°C | 12/15 | |
| CTE, Z-axis | 2.4.24 | Alpha 1, TMA | ppm/°C | 50 | |
| | | Alpha 2, TMA | ppm/°C | 260 | |
| Z-axis Expansion | 2.4.24 | 50~260°C, TMA | % | 3.2 | |
| Decomposition temp. | 2.4.24.6 | TGA | °C | 340 | |
| Thermal stress 10sec 288°C | 2.4.13.1 | Clad | — | Pass Visual | |
| | | Etched | — | Pass Visual | |
| Water absorption | 2.6.2.1 | E-1/105+D-24/23 | % | 0.10 | |
| Peel strength | 0.5 oz | 2.4.8 | as received | lb/in | 6.5 |
| | | | after thermal stress | lb/in | 6.5 |
| | 1.0 oz | 2.4.8 | as received | lb/in | 8.5 |
| | | | after thermal stress | lb/in | 8.5 |
| Permittivity (RC 50%) | 1 MHz | 2.5.5.9 | C-24/23/50 | — | 4.9 |
| | 1 GHz | | | — | 4.3 |
| Loss tangent (RC 50%) | 1 MHz | 2.5.5.9 | C-24/23/50 | — | 0.015 |
| | 1 GHz | | | — | 0.016 |
| Volume resistivity | 2.5.17.1 | C-96/35/90 | MΩ-cm | >10 ¹⁰ | |
| Surface resistivity | 2.5.17.1 | C-96/35/90 | MΩ | >10 ⁹ | |
| Flexural strength | Warp | 2.4.4 | as received | MPa | 510~540 |
| | Fill | | as received | MPa | 410~460 |
| Flame resistance | UL-94 | A&E-24/125 | — | V-0 | |