Halogen Free, High Tg, Low Transmission Loss, Low CTE Multilayer Material

MCL-HS100 GH-100〈Prepreg〉

Low Dielectric Constant Glass Thermosetting Resin Multilayer Material

Features
● MCL-HS100 Type(D) with Low Dk glass has low Dk/Df values.
● Suitable for package and high frequency application.
● MCL-HS100 has low CTE value and reduces warpage.
● Well-suited for build-up construction.

Applications
● Semiconductor packages. (FC-CSP, PoP, SiP)
● Thinner Module PWB

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Standard Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Type</th>
<th>Copper Foil Thickness</th>
<th>Code Name</th>
<th>Laminate Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCL-HS100</td>
<td></td>
<td>3μm 5μm 12μm 18μm 35μm</td>
<td>M0.06 0.1 0.10mm</td>
<td>0.06mm</td>
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<td></td>
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<td>(STD,LP,RT,HVLP)</td>
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Note1) STD:Standard copper foil, LP:Low profile copper foil, PF:Profile free copper foil.
Note2) STD:12μm, 18μm, 35μm; LP:3μm, 5μm, 12μm; RT:18μm, 35μm; HVLP:12μm, 18μm, 35μm. Please contact us for details.
Note3) The thickness means that of dielectric layer.

Characteristics

Thin Laminate

Note1) Heating Rate:10℃/min.
Note2) Measured by Cavity Resonator.
Note3) Refer to last page “Condition Note”

Above data are experimental results and not guaranteed.


● Prepreg

<table>
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<tr>
<th>Part Number</th>
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<th>Glass Cloth</th>
<th>Properties</th>
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Reference (IPC-TM-650)

2.3.16

※1) The dielectric thickness after lamination is defined as the thickness of one sheet of prepreg when the resin flow is 0%.

This value changes depending on the press condition or inner layer pattern.

● Warpage of coreless-5 layer

TEG Chip

* Package size: 14mm×14mm
* Chip size: 7.3mm×7.3mm
* Chip thickness: 150μm
* Underfill thickness: 60μm (CEL-C-3730-4)

<Sample>

* 1.5μm Cu (100%), L 2.3μm No copper, SR:
* Prepreg construction

GH-100 Type (D): (1078, R.C.: 63%) × 4ply
GEA-700G: (1078, R.C.: 66%) × 4ply
GEA-705G: (1078, R.C.: 65%) × 4ply

Properties

<table>
<thead>
<tr>
<th>Glass Cloth</th>
<th>Resin Content (%)</th>
<th>Dielectric Thickness after Lamination*1 (mm)</th>
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● Transmission Loss

<Measurement conditions>

- Evaluation PWB: Strip-line
- Temperature & Humidity: 25℃/60%RH
- Characteristic impedance: Approx. 50Ω
- Proofreading method: TRL (Thru-Reflect-Line)

- Trace width: 0.12~0.14mm
- Dielectric thickness: 0.25mm
- Trace thickness: 18μm