



The World Leader in Technology and Quality. **Electro-Materials**

DS-7405 (ANSI : FR-4)

FEATURES

- Good dimensional stability.
- Soldering reliability has been bettered
- Good electrical properties
- High density automatic mounting can be carried out

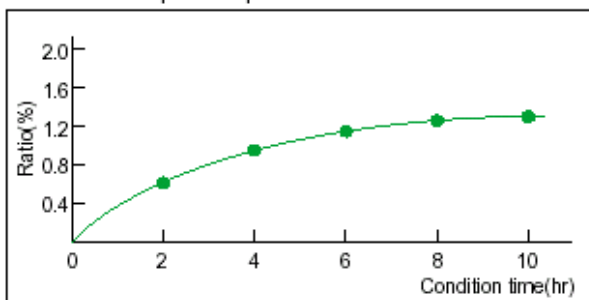
APPLICATIONS

Computer, Instrumentation, VCR, Television, Electronic Toy, etc.,

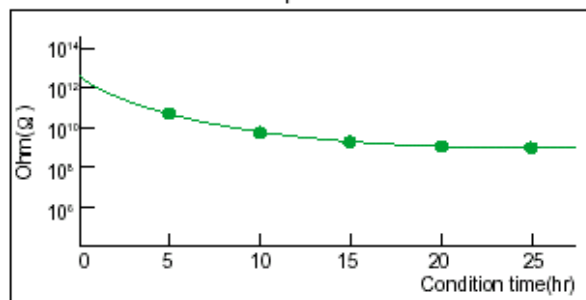
INTERNATIONAL STANDARD RECOGNITION

- UL : E103670
- CSA : LS-93237
- BSI : 6741
- VDE : VDE-Reg-Nr. 4945

Water absorption at pressure cooker

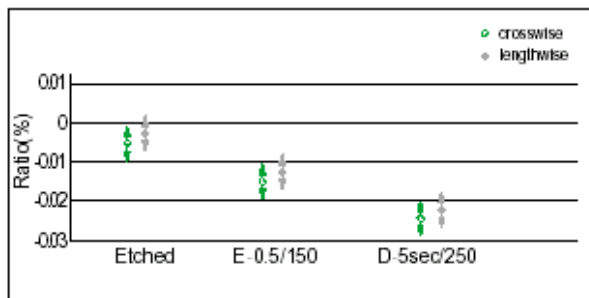


Insulation resistance at pressure cooker



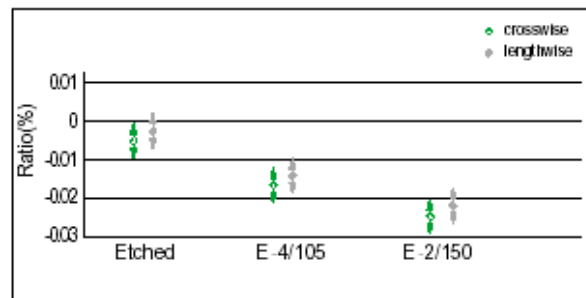
Dimensional stability

PCB process (size 360X310mm span 310X254mm)

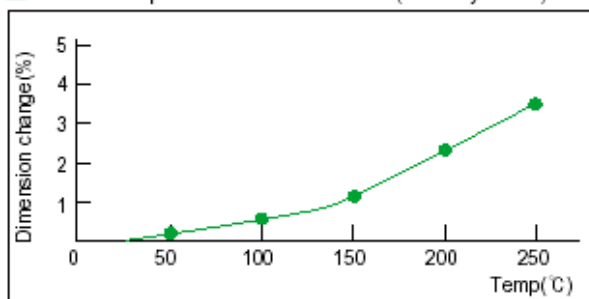


Dimensional stability

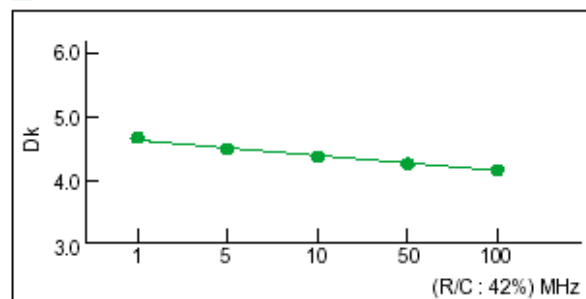
Test method (IPC-TM.650 2.4.39)



Thermal expansion of Z-direction (Test by TMA)



Dielectric constant





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GENERAL PROPERTIES

| Test Item | Unit | Treatment Condition | Designation | DS-7405 |
|--------------------------------|---------------------------|-----------------------|---------------------------------------|--------------------------|
| | | | ANSI Grade | FR-4 |
| | | | Property Data | |
| | | | Standard Value | Guaranteed Value |
| Tg | °C | DSC | 135 | above 130 |
| | | TMA | 135 | above 130 |
| | | DMA | 165 | above 160 |
| CTE x-axis y-axis z-axis | ppm/°C | Ambient to Tg | 18 | less than 20 |
| | | | 13 | less than 15 |
| | | | 55 | less than 60 |
| Flammability | - | UL-94 | V-0 | V-0 |
| Insulation Resistance | ohm | C-96/20/65 | $1 \times 10^{12} - 1 \times 10^{13}$ | above 5×10^{11} |
| | | C-96/20/65+D-2/100 | $1 \times 10^{10} - 1 \times 10^{11}$ | above 1×10^9 |
| Volume Resistivity | ohm-cm | C-96/20/65 | $1 \times 10^{14} - 1 \times 10^{15}$ | above 1×10^{13} |
| | | C-96/20/65+C-96/40/90 | $5 \times 10^{13} - 5 \times 10^{14}$ | above 5×10^{12} |
| Surface Resistance | ohm | C-96/20/65 | $5 \times 10^{13} - 5 \times 10^{14}$ | above 1×10^{12} |
| | | C-96/20/65+C-96/40/90 | $1 \times 10^{12} - 1 \times 10^{13}$ | above 1×10^{11} |
| Arc Resistance | min.seconds | | 110 | above 60 |
| Dielectric Constant (1 MHz) | - | C-96/20/65 | 4.5 - 4.8 | less than 5.5 |
| | | C-96/20/65+D-48/50 | 4.6 - 5.2 | less than 5.8 |
| Dissipation Factor (1 MHz) | - | C-96/20/65 | 0.015 - 0.020 | less than 0.035 |
| | | C-96/20/65+D-48/50 | 0.018 - 0.023 | less than 0.045 |
| Comparative Tracking Index | volt | IEC Method | - | - |
| Solder Float(260 °C) | sec | A | above 180 | above 120 |
| Peel Strength | Cu.foil 1 oz (0.035mm) | kgf/cm | A | 1.8 - 2.2 |
| Flexural Strength | kgf/mm ² | A | 40 - 50 | above 32.7 |
| Water Absorption | % | E-24/50+D-24/23 | 0.10 - 0.15 | less than 0.25 |

Specimen Thickness : 1.6mm

PURCHASING INFORMATION

- Copper foil : 0.5 oz/ft²(0.018 mm), 1 oz/ft²(0.035 mm), 2 oz/ft²(0.070 mm) available.
- Thickness : 0.2mm to 3.2mm

| Standard Size | Tolerance(mm) |
|-----------------------------|---------------|
| 1,020 X 1,220mm (40" X 48") | +3 |
| 915 X 1,220mm (36" X 48") | -0 |
| 1,070 X 1,220mm (42" X 48") | -0 |
| 970 X 1,220mm (38" X 48") | -0 |

※ Other sheet size and thickness could be available upon request.