



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

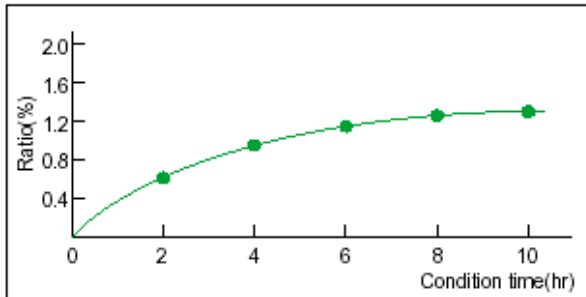
### APPLICATIONS

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

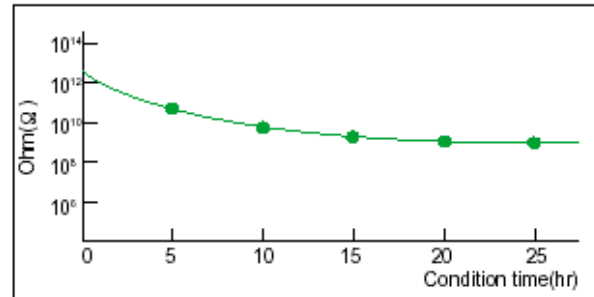
### INTERNATIONAL STANDARD RECOGNITION

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

#### Water absorption at pressure cooker

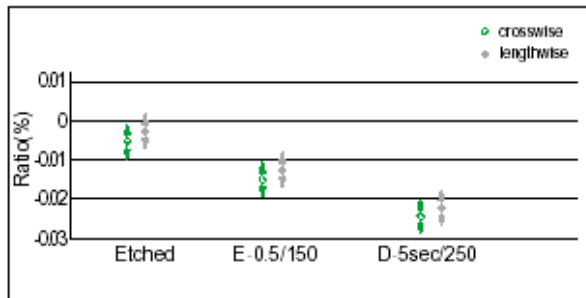


#### Insulation resistance at pressure cooker



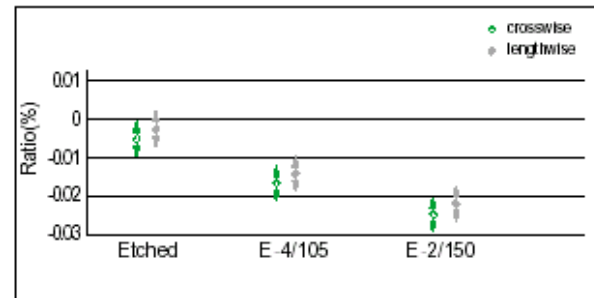
#### Dimensional stability

PCB process (size 360X310mm span 310X254mm)

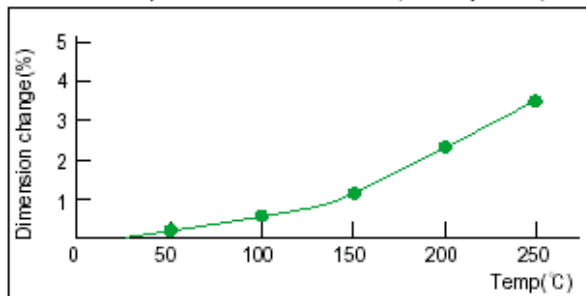


#### Dimensional stability

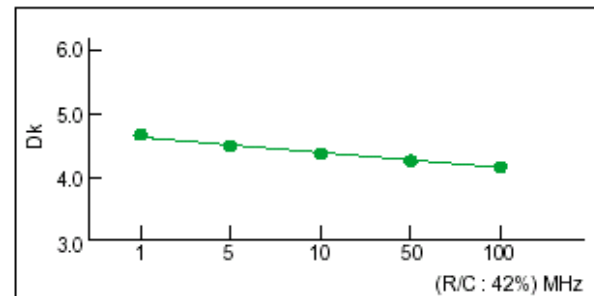
Test method (IPC-TM.650 2.4.39)



#### 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	℃	DSC	135	above 130
		TMA	135	above 130
		DMA	165	above 160
CTE x-axis y-axis z-axis	ppm/℃	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 $5 \times 10^{11}$
		C-96/20/65+D-2/100	$1 \times 10^{10} - 1 \times 10^{11}$	above $1 \times 10^9$
Volume Resistivity	ohm-cm	C-96/20/65	$1 \times 10^{14} - 1 \times 10^{15}$	above $1 \times 10^{13}$
		C-96/20/65+C-96/40/90	$5 \times 10^{13} - 5 \times 10^{14}$	above $5 \times 10^{12}$
Surface Resistance	ohm	C-96/20/65	$5 \times 10^{13} - 5 \times 10^{14}$	above $1 \times 10^{12}$
		C-96/20/65+C-96/40/90	$1 \times 10^{12} - 1 \times 10^{13}$	above $1 \times 10^{11}$
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℃)	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 <sup>2</sup>	A	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/ft<sup>2</sup>(0.018 mm), 1 oz/ft<sup>2</sup>(0.035 mm), 2 oz/ft<sup>2</sup>(0.070 mm) available.
- Thickness : 0.2mm to 3.2mm

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

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