

## 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

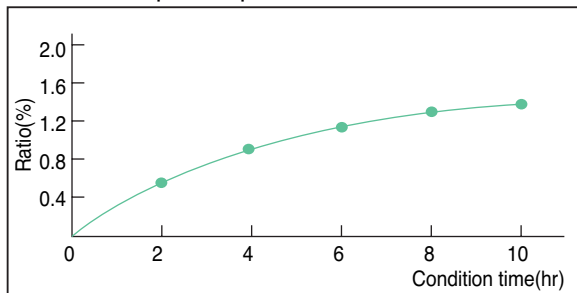
## APPLICATIONS

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

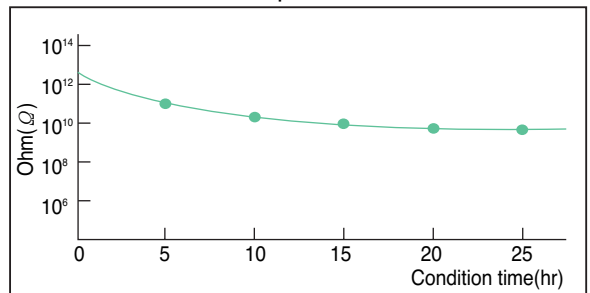
## INTERNATIONAL STANDARD RECOGNITION

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

## ■ Water absorption at pressure cooker

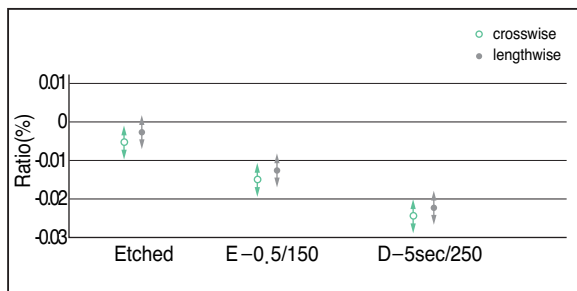


## ■ Insulation resistance at pressure cooker



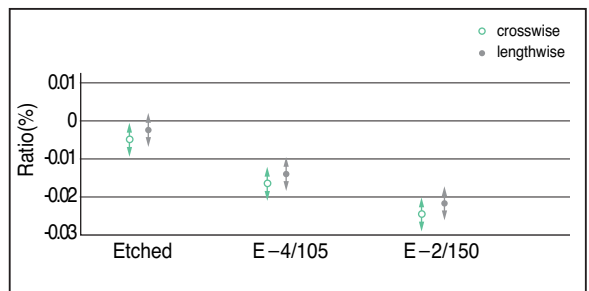
## ■ Dimensional stability

PCB process(size360X310mm span310X254mm)

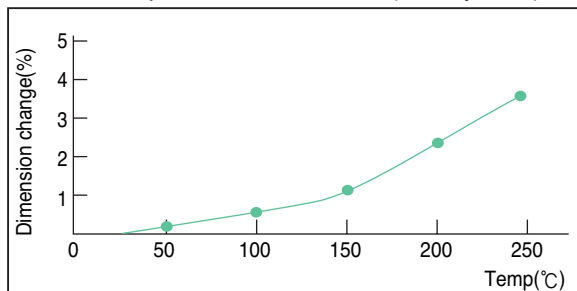


## ■ Dimensional stability

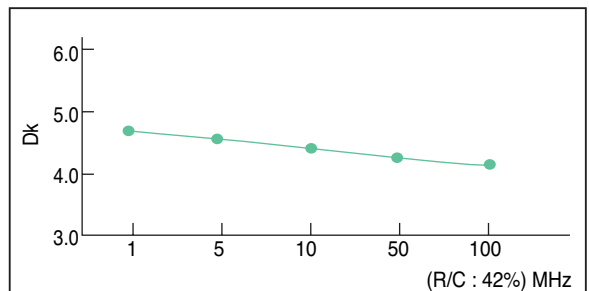
Test method(IPC. TM.650 2. 4. 39)



## ■ Thermal expansion of Z-direction (Test by TMA)



## ■ Dielectric constant



## GENERAL PROPERTIES

			Designation	DS-7405
			ANSI Grade	FR-4
Test Item	Unit	Treatment Condition	Property Data	
			Standard Value	Guaranteed Value
Tg	°C	DSC TMA DMA	135 135 165	above 130 above 130 above 160
CTE x-axis y-axis z-axis	ppm/°C	Ambient to Tg	18 13 55	less than 20 less than 15 less than 60
Flammability	-	UL-94	V-0	V-0
Insulation Resistance	ohm	C-96/20/65 C-96/20/65+D-2/100	$1 \times 10^{12} - 1 \times 10^{13}$ $1 \times 10^{10} - 1 \times 10^{11}$	above $5 \times 10^{11}$ above $1 \times 10^9$
Volume Resistivity	ohm-cm	C-96/20/65 C-96/20/65+C-96/40/90	$1 \times 10^{14} - 1 \times 10^{15}$ $5 \times 10^{13} - 5 \times 10^{14}$	above $1 \times 10^{13}$ above $5 \times 10^{12}$
Surface Resistance	ohm	C-96/20/65 C-96/20/65+C-96/40/90	$5 \times 10^{13} - 5 \times 10^{14}$ $1 \times 10^{12} - 1 \times 10^{13}$	above $1 \times 10^{12}$ above $1 \times 10^{11}$
Arc Resistance	min.seconds		110	above 60
Dielectric Constant (1 MHz)	-	C-96/20/65 C-96/20/65+D-48/50	4.5 - 4.8 4.6 - 5.2	less than 5.5 less than 5.8
Dissipation Factor (1 MHz)	-	C-96/20/65 C-96/20/65+D-48/50	0.015 - 0.020 0.018 - 0.023	less than 0.035 less than 0.045
Comparative Tracking Index	volt	IEC Method	-	-
Solder Float(260°C)	sec	A	above 180	above 120
Peel Strength	Cu.foil 1oz (0.035mm)	kgf/cm	A	1.8 - 2.2
Flexural Strength	kgf/mm <sup>2</sup>	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/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 : 0.4mm 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
1,020 X 1,020mm (40" X 40")		

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