Ultra Thin Halogen Free, High Tg, High Modulus, Low CTE Material
GEA-705G Type(F),GEA-770G Type(F) 〈Prepreg〉

■Features

●Superior in impedance control, for prepreg thickness variation is small after press.
●Suitable for fine line formation with its smooth surface.
●Can achieve insulation layer thickness 16μm.
●Suitable for coreless structure by superior variation of dimensional change.
●Undulation of F-Type prepreg is small after press, so F-type can reduce warpage at assembly.

■Standard Specification [Prepreg]

Part Number	Type		Glass Cloth		Properties			
			Style	Yarn Count (warp×fill)	Resin Content (%)	Volatile Content (%)	Gelation Time (sec)	Dielectric Thickness after laminate *1 (mm)
GEA-705G	0.020	(1010F74)	1010	96×96	74±2	≦2.0	200±30	0.021
		(1010F76)			76±2			0.023
		(1010F78)			78±2			0.025
		(1010F80)			80±2			0.027
		(1010F84)			84±2			0.035
	0.025	(1017F73)	1017	95×95	73±2			0.025
		(1017F78)			78±2			0.031
		(1017F83)			83±2			0.040

Part Number	Type		Glass Cloth		Properties			
			Style	Yarn Count (warp×fill)	Resin Content (%)	Volatile Content (%)	Gelation Time (sec)	Dielectric Thickness after laminate *1 (mm)
GEA-770G	0.020	(1010F67)	1010	96×96	67±2	≦2.0	270±40	0.016
		(1010F69)			69±2			0.018
		(1010F71)			71±2			0.019
		(1010F73)			73±2			0.021
		(1010F78)			78±2			0.026
		(1010F82)			82±2			0.032
	0.025	(1017F73)	1017	95×95	73±2			0.026
		(1017F78)			78±2			0.033
		(1017F83)			83±2			0.043
	0.030	(1027F73)	1027	75×75	73±2			0.042
		(1027F78)			78±2			0.052

Test Method (IPC-TM-650)	2.3.16	2.3.19	2.3.18	–

*1) The dielctric 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.

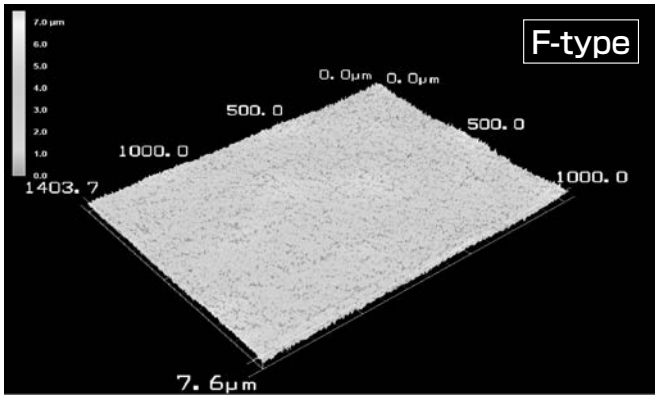
■Characteristics

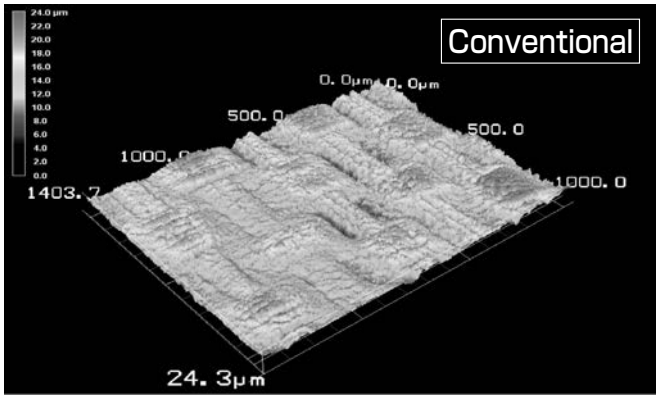
Prepreg=1010F78

Item		Condition *2	Unit	Actual Value		Test Method (IPC-TM-650)
				GEA-705G Type(F)	GEA-770G Type(F)	
Tg		TMA	℃	250～270	260～280	2.4.24
		DMA		295～305	300～330	–
CTE*1	X	30～120℃	ppm/℃	8～10	6～7	2.4.24
	Y			2～5	2～4	
Solder Heat Resistance (260℃)		A	sec.	>300	>300	–
T-260 (Without Copper)		TMA	min.	>60	>60	2.4.24.1
T-288 (Without Copper)				>60	>60	
Undulation		After press	mm	0.0～0.3	0.0～0.3	–

*1) Heating Rate:10℃/min. *2) Refer to last page "Condition Note"

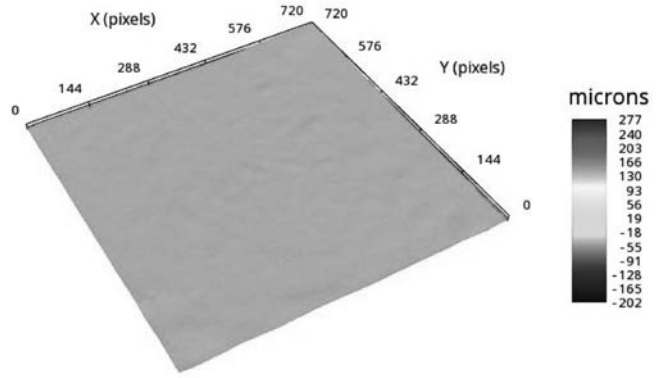
●Surface Smoothness of Prepreg (Microscope)



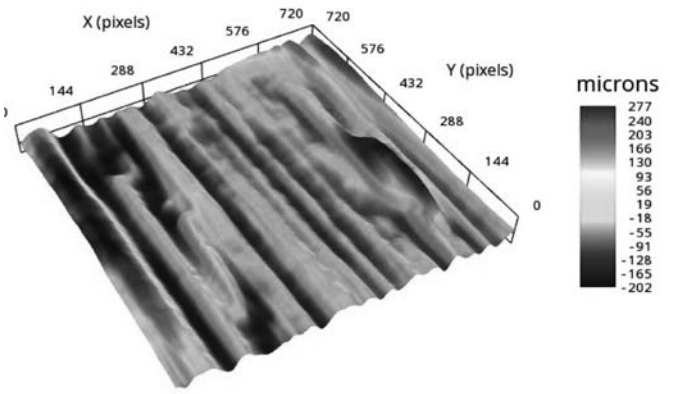


●Surface Smoothness of Prepreg after press (shadow moire)

F-type

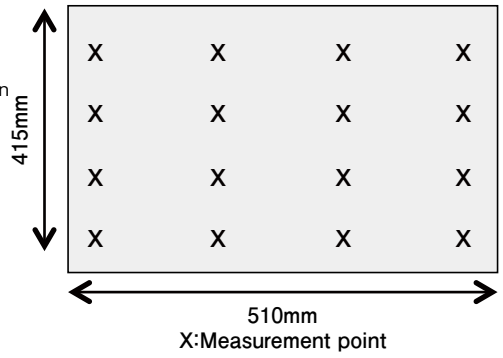


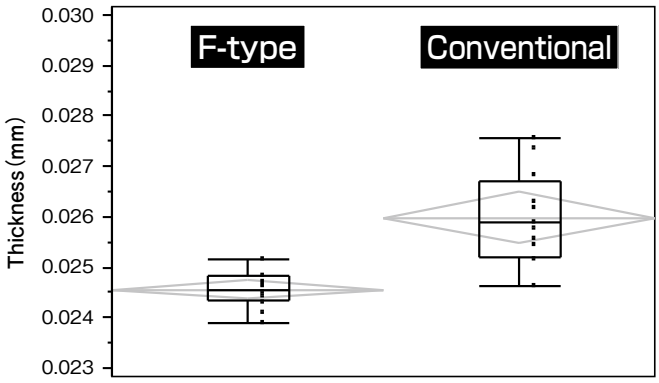
Conventional



●Prepreg thickness after Press

・Copper foil ; 3μm
・Laminate condition
Temp. ; 230℃100min
Heating rate ; 3.0℃/min
Pressure ; 3MPa





●Undulation of prepreg after press