

Flexible circuit board materials

FELIOS

(Double-sided copper clad)
R-F775
(Single-sided copper clad)
R-F770

■ Features

- Excellent dimensional stability
- Line-up of thick copper foil and thick film specifications
- Halogen-free with UL94V-0

■ Application

- Various modules for Smartphones and Tablet PCs

■ Line-up

Roll-cut Type MAX 610mm(MD) x 500mm(TD) Roll Type W=250mm, 500mm

● RA Copper Foil

Copper Foil Thickness	Film Thickness							Unit: mil (mm)
	0.5 (0.013)	1.0 (0.025)	2.0 (0.050)	3.0 (0.075)	4.0 (0.100)	5.0 (0.125)	6.0 (0.150)	
1/4oz (9μm)	●*1	●*1	●*1	—	—	—	●*1	
1/3oz (12μm)	●	●	●	●	●	—	—	
1/2oz (18μm)	●	●*2	●*2	●*2	●*2	●*2	●	
1oz (35μm)	●*1	●*2	●*2	●*2	●*2	●*2	●	
2oz (70μm)	—	●*2	●*2	●	●	●	—	

*1 Special option *2 W=610mm is optional.

● ED Copper Foil

Copper Foil Thickness	Film Thickness							Unit: mil (mm)
	0.5 (0.013)	1.0 (0.025)	2.0 (0.050)	3.0 (0.075)	4.0 (0.100)	5.0 (0.125)	6.0 (0.150)	
- (2μm)	●	●	●	●	—	—	—	
1/6oz (6μm)	●	●	●	—	—	—	—	
1/4oz (9μm)	●	●	●	●	●	●	●	
1/3oz (12μm)	●	●	●	●	●	●	●	
1/2oz (18μm)	●	●	●	●	●	—	—	
1oz (35μm)	—	●	●	●	●	—	—	

■ General Properties

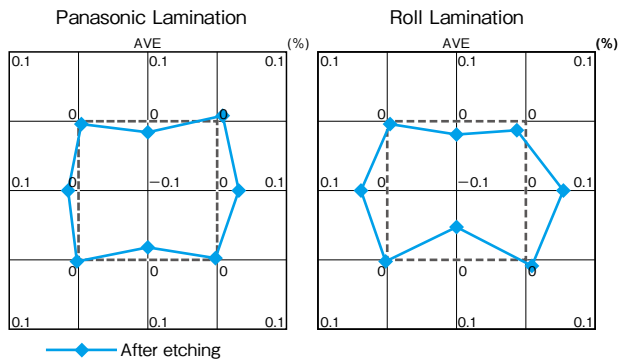
			R-F775
Item	Unit	Condition	Typical value
Surface resistance	MΩ	C-24/23/50	1×10 ¹⁵
Dielectric constant(Dk) (1MHz)	—	C-24/23/50	3.2
Dissipation factor(Df) (1MHz)	—	C-24/23/50	0.002
Solder heat resistance	—	E-1/135 288°C solder float for 1min.	No abnormality
Moisture heat resistance	—	C-96/40/90 260°C solder float for 1min.	No abnormality
Peel strength RA: 0.018mm(18μm)	N/mm	C-24/23/50	1.3
		260°C solder float for 5sec.	1.3
Flammability(UL method)	—	A+E-168/70	94V-0
Tensile modulus	GPa	C-24/23/50	7.1
Chemical resistance	—	HCl 2mol/l 23°C 5min.	No abnormality
		NaOH 2mol/l 23°C 5min.	
		IPA 23°C 5min.	
Dimensional stability	%	After etching MD direction	0.030
		After etching TD direction	0.037
		After E-0.5/150 MD direction	0.022
		After E-0.5/150 TD direction	0.027

Note: The sample thickness is RA copper foil 18μm, film 25μm.

Note: The above test methods are in accordance with JIS C 6481 other than the cases flammability is with UL 94.

■Characteristic graph(reference value)

●Dimensional stability



●Frequency dependence of dielectric property(IPC-TM650 2.5.5.5)

	Condition	1GHz	2.5GHz	5GHz	10GHz
Dielectric constant (Dk)	A	3.2	3.2	3.2	3.2
	C-96/40/96	3.3	3.3	3.2	3.2
Dissipation factor (Df)	A	0.002	0.002	0.002	0.003
	C-96/40/96	0.002	0.002	0.003	0.003