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

●RA Copper Foil

Unit: mils (mm)

Copper Foil Thickness	Film Thickness															
	Sheet Type Max 610mm(MD) x 510mm(TD)								Roll Type W=250mm, 500mm							
	0.5 (0.013)	0.8 (0.02)	1.0 (0.025)	2.0 (0.05)	3.0 (0.075)	4.0 (0.10)	5.0 (0.125)	6.0 (0.15)	0.5 (0.013)	0.8 (0.02)	1.0 (0.025)	2.0 (0.05)	3.0 (0.075)	4.0 (0.10)	5.0 (0.125)	6.0 (0.15)
1/4oz (9μm)	●*1	●*1	●*1	●*1	—	—	—	—	●*1	●*1	●*1	●*1	—	—	—	—
1/3oz (12μm)	●	●	●	●	●	●	—	—	●	●*1	●	●	●	—	—	—
1/2oz (18μm)	●	●	●	●	●	●	●	●	●	●*1	●*2	●*2	●*2	●*1	●*1	—
1oz (35μm)	●	●	●	●	●	●	●	●	●*1	●*1	●*2	●*2	●*1	●*1	●*1	—
2oz (70μm)	—	●	●	●	●	●	●	●	—	●*1	●*2	●*2	—	—	—	—

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

●ED Copper Foil

Unit: mils (mm)

Copper Foil Thickness	Film Thickness															
	Sheet Type Max 610mm(MD) x 510mm(TD)								Roll Type W=250mm, 500mm							
	0.5 (0.013)	0.8 (0.02)	1.0 (0.025)	2.0 (0.05)	3.0 (0.075)	4.0 (0.10)	5.0 (0.125)	6.0 (0.15)	0.5 (0.013)	0.8 (0.02)	1.0 (0.025)	2.0 (0.05)	3.0 (0.075)	4.0 (0.10)	5.0 (0.125)	6.0 (0.15)
- (2μm)	●	●	●	●	●	—	—	—	●*1	●*1	●	●	●*1	—	—	—
1/6oz (6μm)	●	—	●	●	—	—	—	—	●*1	—	●	●	—	—	—	—
1/4oz (9μm)	●	●	●	●	●	●	●	●	●*1	●*1	●	●	●*1	●*1	●*1	—
1/3oz (12μm)	●	●	●	●	●	●	●	●	●*1	●*1	●	●	●	●*1	●*1	—
1/2oz (18μm)	●	●	●	●	●	●	—	—	●*1	●*1	●	●	●*1	●*1	—	—
1oz (35μm)	—	●	●	●	●	●	—	—	—	—	●	●	—	—	—	—

*1 Special option

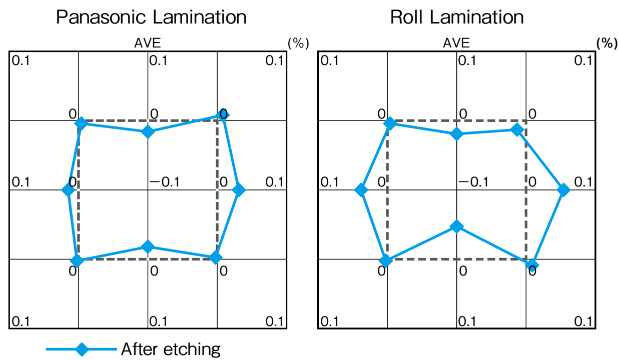
■General Properties

Item	Unit	Condition	R-F775 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℃ solder float for 1min.	No abnormality
Moisture heat resistance	—	C-96/40/90 260℃ solder float for 1min.	No abnormality
Peel strength RA: 0.018mm(18μm)	N/mm	C-24/23/50	1.3
		260℃ 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	—	HCI 2mol/ℓ 23℃ 5min.	No abnormality
		NaOH 2mol/ℓ 23℃ 5min.	
		IPA 23℃ 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