



**Superior thermal resistance
MOT 160°C**

**Wide line-up of film thickness
and copper foil**

**Excellent dimensional
stability**

Applications
Aerospace/Industry/Automotive
Consumer mobile products (Smartphone, tablet PC),
Medical, Industrial, Avionics/Space applications,
In-vehicle cable (Wire harness alternative), etc.



FELIOS

Double-sided copper clad

Single-sided copper clad

R-F775

R-F770

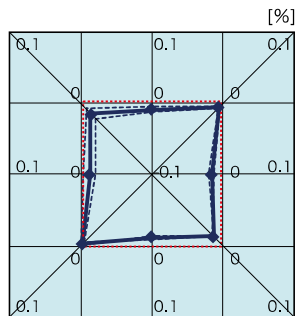
Flexible circuit board materials

FELIOS adhesiveless flex materials are available in a wide-range of film and copper foil thicknesses to support all applications. FELIOS offers superior thermal resistance, dimensional stability and quality. Suitable for aerospace applications with low outgassing. (Compliant with ASTM E-595)

Dimensional stability

Dimensional change after etching

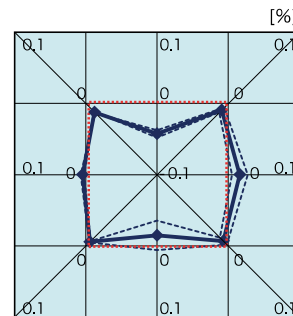
Panasonic Industry
FCCL materials
R-F775 After etching



Evaluation material is R18-100-R18, thickness 4mil.

Comparative material

After etching



The above data are typical values and not guaranteed values

Line-up

Available in various film and copper foil combinations. **Roll-cut type** MAX 610mm(MD) x 500mm(TD)

Roll type W=250mm, 500mm

Copper foil thickness		Film thickness							Unit: mils (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)	
RA copper foil	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	●	●	●	-	
	3oz (105μm)	-	●	●	-	-	-	-	
ED copper foil	- (2μm)	●	●	●	●	-	-	-	
	1/6oz (6μm)	●	●	●	-	-	-	-	
	1/4oz (9μm)	●	●	●	●	●	●	●	
	1/3oz (12μm)	●	●	●	●	●	●	●	
	1/2oz (18μm)	●	●	●	●	●	-	-	
	1oz (35μm)	-	●	●	●	●	-	-	

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

Our Halogen-free materials are based on JPCA-ES-01-2003 standard and others.

Please refer to the next page for General properties.

General properties

Item		Test method	Condition	Unit	FELIOS R-F775
Solder heat resistance		IPC-TM-650	A	℃	>330
			C-96/40/90		260
Dielectric constant(Dk)	1GHz	ASTM D150	A	—	3.2
Dissipation factor(Df)					0.003
Tensile modulus		ASTM D882	A	GPa	7.1
Tensile strength		Internal method	A	MPa	542
Peel strength	RA:1/3oz(12μm)	IPC-TM-650	A	N/mm	1.35
CTE	MD/TD/Z-axis	MD/TD: TMA, Z: JIS R 3251	50—200℃	ppm/℃	17 / 19 / 101
Thermal conductivity		Laser flash	A	W/m・K	0.16
Dimensional stability		IPC-TM-650	After etching MD direction	%	0.00±0.10
			After etching TD direction		0.00±0.10
Water absorption		IPC-TM-650	23℃ 24h immersion	%	0.9
Outgas	TML*	ASTM E595-07 ASTM E595-15	—	%	0.62
	CVCM*				0.05
	WVR*				0.55

The sample thickness is film 25μm, copper foil 12μm.

* TML: Total Mass Loss

CVCM: Collected Volatile Condensable Materials

WVR: Water Vapor Recovered

Our Halogen-free materials are based on JPCA-ES-01-2003 standard and others.
The above data are typical values and not guaranteed values.

Please see our website for Notes before you use.

industrial.panasonic.com/ww/electronic-materials

Panasonic Industry R-F775



Panasonic Industry Co., Ltd. Electronic Materials Business Division

© Panasonic Industry Co., Ltd. 202412