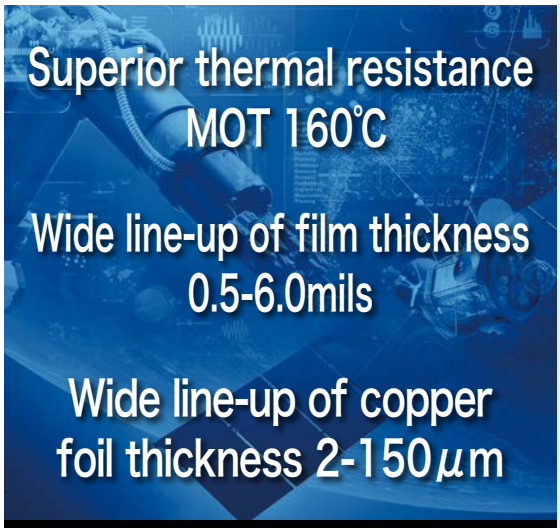
Panasonic INDUSTRY



Applications
Avionics / Industry
Consumer Mobile Products (Smartphone, Tablet PC), Medical, Industrial, Avionics/Space Applications

Halogen -free

FELIOS

Double-sided copper clad **R-F775**

Single-sided copper clad **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.

Line-up

Available in various film and copper foil combinations. **Roll-cut type** MAX 610mm(MD) x 500mm(TD) **Roll type** W=250mm, 500mm

Unit: mils (mm)

Copper foil thickness		Film thickness 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)	●	●*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.

General properties

Item		Test method	Condition	Unit	FELIOS R-F775
Solder heat resistance		JIS C 6471	A	℃	>330
			C-96/40/90		260
Tensile modulus		ASTM D882	A	GPa	7.1
Tensile strength		Internal method	A	MPa	542
Peel strength	RA: 1/3oz(12μm)	JIS C 6471	A	N/mm	1.35
CTE	MD/TD/Z-axis	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
Flammability		UL	A+E-168/70	-	94V-0
Outgas	TML/CVCM/WVR*	ASTM E595-07/ASTM E595-15	-	%	0.62 / 0.05 / 0.55

The sample thickness is film 25μm, copper foil 12μm.
* TML: Total Mass Loss, CVCM: Collected Volatile Condensable Material, WVR: Water Vapor Recovered

Please see our website for Notes before you use.

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

industrial.panasonic.com/ww/electronic-materials

Panasonic Industry R-F775

Panasonic Industry Co., Ltd. Electronic Materials Business Division