

ThinFlex Corporation

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ThinFlex H-0502ES-N3 Adhesiveless Copper Clad Laminate

(Halogen Free)

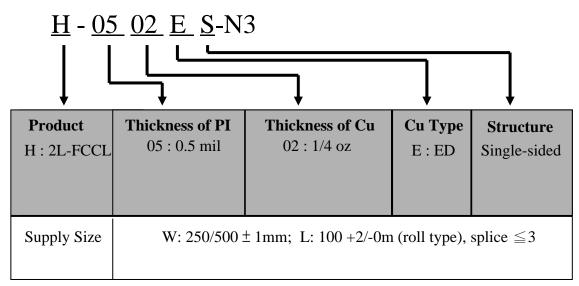
IPC Designation IPC-4204/11

ThinFlex H-0502ES-N3 is an adhesiveless metal clad polyimide film, furnished in the form of roll laminate with ED copper on one side. ThinFlex H-0502ES-N3 adhesiveless composites are designed for a wide variety of flexible circuit applications which require advanced material performance, temperature resistance, fine pitch, and high reliability.

1. Product Characteristics:

- * Excellent dimensional stability
- * Excellent flexibility
- * Finer line etching capability
- * Low moisture absorption
- * Excellent flammability (Flame class UL 94V-0; UL File No. E219724)
- * Excellent chemical resistance
- * Excellent thermal, mechanical, and electrical properties

2. Specifications:



^{*}Other thicknesses and dimensions are available on customers' demand.

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3. Construction:

Copper foil

Polyimide film

4. Properties:

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Test item	Unit	H-0502ES-N	3 Test Method
Peel Strength			
As Received	Kgf/cm	≧0.6	IPC-TM650 2.4.9 B
Solder Float	Kgf/cm	≧0.6	IPC-TM650 2.4.13 B
After Temp. Cycling	Kgf/cm	≧0.6	IPC-TM650 2.4.9
Chemical Resistance	Kgf/cm	≧0.6	IPC-TM650 2.3.2
Tensile Strength (Base Film)	Kg/mm ²	23	IPC-TM-650 2.4.19
Elongation (Base Film)	%	22	IPC-TM-650 2.4.19
Tensile Modulus (Base Film)	Kg/mm ²	700	ASTM D882
Initial Tear Strength (Base Film)	g	420	IPC-TM-650 2.4.16
Propagation Tear Strength (Base Film)	g	10	IPC-TM-650 2.4.17.1
Flexural Endurance, MIT	ŭ		
M.D.	Cycles	≥1200	JIS-C 6471, 0.8mmR, 0.5kg
T.D.	Cycles	= 1200 ≥1200	JIS-C 6471, 0.8mmR, 0.5kg
Electrical Properties			
Surface Resistance	Ω	~10 ¹¹	IPC-TM650 2.5.17
Volume Resistance	$\Omega ext{-cm}$	~1012	IPC-TM650 2.5.17
Insulation Resistance	Ω	~109	IPC-TM650 2.6.3.2
Dielectric Strength	kV/mil	5.0	ASTM-D149
Dielectric Constant	-	3.6	IPC-TM650 2.5.5.3
Dissipation factor	-	0.01	IPC-TM650 2.5.5.3
Physical and Thermal Properties			
M.D. Dimensional Stability T.D.	%	-0.1~0.1	IPC-TM650 2.2.4C
T.D.	% nnm/°C	-0.1~0.1	IPC-TM650 2.2.4C
CTE	ppm/°C °C	26 327	ThinFlex ThinFlex
T_g Solder Float 10sec at 288° (550°F)	-	Pass	IPC-TM650 2.4.13
Moisture Absorption Test	%	1.1	IPC-TM650 2.6.2
Chemical Resistance- single	-	Pass	IPC-TM650 2.3.2
Thickness tolerance	um	22±10%	ThinFlex
UL Flame Class	-	94V-0	UL

^{*} Above data are typical values, and are not guaranteed values.

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5. Storage:

ThinFlex-H-0502ES-N3 will meet its shelf-life for at least 12 months after arrival at the user's factory when stored in the original packaging at temperatures of below 25°C and below 70% humidity. The products do not need refrigeration and should not be frozen.

6. Note

If products are used in the Rigid Flex board for combine with Pre-preq, our suggestion that the products need to be deal with by Plasma treatment in order to improve bonding strength.

Note: The information and data contained in this technical literature is believed to be accurate and is offered in good faith for the benefit of the user. The user should make his own tests to verify the suitability of this product for any application before its use. All data are typical values only and subject to change without notice.

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