ThinFlex®

Distributed by: ventec INTERNATIONAL GROUP 騰輝電子

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:

H - 05 02 E S-N3

Product	Thickness of PI	Thickness of Cu	Cu Type	Structure
H : 2L-FCCL	05 : 0.5 mil	02 : 1/4 oz	E : ED	Single-sided
Supply Size	W: 250/500 ± 1mm; L: 100 +2/-0m (roll type), splice ≦3			

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

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3. Construction:

Copper foil
Polyimide film

4. Properties:

IPC Designation IPC-4204/11

Test item		Unit	H-0502ES-N3	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				
M.D.		Cycles	≧1200	JIS-C 6471, 0.8mmR, 0.5kg
T.D.		Cycles	≧1200	JIS-C 6471, 0.8mmR, 0.5kg
Electrical Properties				
Surface Resistance		Ω	$\sim 10^{11}$	IPC-TM650 2.5.17
Volume Resistance		Ω-cm	$\sim 10^{12}$	IPC-TM650 2.5.17
Insulation Resistance		Ω	$\sim 10^{9}$	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				
Dimensional Stability	M.D.	%	-0.1~0.1	IPC-TM650 2.2.4C
	T.D.	%	-0.1~0.1	IPC-TM650 2.2.4C
CTE		ppm/℃	26	ThinFlex
T_g		℃	327	ThinFlex
Solder Float	10sec at 288℃ (550^0F)	-	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.

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