



ThinFlex

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**ThinFlex Corporation**

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# ThinFlex-LK, LK-2005RD-J6 Adhesiveless Double Sided Copper Clad Laminate

ThinFlex-LK, LK-2005RD-J6 is an adhesiveless double-sided (D/S) copper clad laminate via the laminating of ThinFlex-LK film with RA copper foil on both sides. The LK-2005RD-J6 adhesiveless composites are designed for a wide variety of flexible circuit applications which require advanced material performance, temperature resistance, fine pitch, high reliability, low dielectric constant and low dissipation factor.

## 1. Product Characteristics:

- \* Excellent dimensional stability
- \* Excellent flexibility
- \* Excellent flammability and chemical resistance
- \* Excellent thermal, mechanical, and electrical properties
- \* Excellent etching capability
- \* Low moisture absorption
- \* Low dielectric constant and low dissipation factor

## 2. Specifications:

LK - 20 05 R D-J6

Product	Thickness of PI	Thickness of Cu	Cu Type	Structure	Cu Supplier
LK-type FCCL	20 : 2.0 mil	05 : 1/2 Oz.	R :RA	D: D/S	Nippon mining & metals
Product Size	W: 250/500 ± 1mm; L: 400~700 ± 2mm (sheet type) W: 250/500 ± 1mm; L: 100 +2/-0m (roll type)				

\* Other product size is also available on customer's demand.



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### 3. Construction:

Copper foil  
Polyimide film

### 4. Properties:

Copper foil

Test item	Unit	LK-2005RD-J6	Test Method	
<b>Peel Strength</b>				
As Received	Kgf/cm	≥ 0.5	IPC-TM650 2.4.9	
Solder Float	Kgf/cm	≥ 0.5	IPC-TM650 2.4.9	
After Temp. Cycling	Kgf/cm	≥ 0.5	IPC-TM650 2.4.9	
Chemical Resistance	Kgf/cm	≥ 0.5	IPC-TM650 2.3.2	
Tensile Strength (Base Film)	Kg/mm <sup>2</sup>	≥ 20	IPC-TM-650 2.4.19	
Elongation (Base Film)	%	≥ 20	IPC-TM-650 2.4.19	
Tensile Modulus (Base Film)	Kg/mm <sup>2</sup>	≥ 450	ASTM D882	
Initial Tear Strength (Base Film)	g	≥ 750	IPC-TM-650 2.4.16	
Propagation Tear Strength (Base Film)	g	≥ 14	IPC-TM-650 2.4.17.1	
<b>Flexural Endurance, MIT</b>				
M.D.	Cycles	NA	JIS-C 6471, 0.8mmR, 0.5kg	
T.D.	Cycles	NA	JIS-C 6471, 0.8mmR, 0.5kg	
<b>Electrical Properties</b>				
Surface Resistance	Ω	~10 <sup>12</sup>	IPC-TM650 2.5.17	
Volume Resistance	Ω-cm	~10 <sup>15</sup>	IPC-TM650 2.5.17	
Insulation Resistance	Ω	~10 <sup>9</sup>	IPC-TM650 2.6.3.2	
Dielectric Strength	kV/mil	5.0	ASTM-D149	
Dielectric Constant (@10GHz)	-	2.8	IPC-TM650 2.5.5.3	
Dissipation factor (@10GHz)	-	0.005	IPC-TM650 2.5.5.3	
<b>Physical and Thermal Properties</b>				
Dimensional Stability	M.D.	%	-0.2~ 0	IPC-TM650 2.2.4C
	T.D.	%	-0.2~ 0	IPC-TM650 2.2.4C
CTE	ppm/°C	28	ThinFlex	
T <sub>g</sub>	°C	300	ThinFlex	
Solder Float	30sec at 288°C (550°F)	-	Pass	IPC-TM650 2.4.13
Moisture Absorption	%	1.0	IPC-TM650 2.6.2	
Chemical Resistance	-	Pass	IPC-TM650 2.3.2	
Thickness tolerance	um	86±10%	ThinFlex	
UL Flame Class	-	VTM-0	UL94	

\* Above data are typical values, and are not guaranteed values.



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## 5. Storage:

The shelf-life of LK-2005RD-J6 is at least 12 months for keeping at temperature of 25°C or less and relative humidity of 70% or less. By the way, it is no need to keep in the refrigeration and frozen condition.

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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