

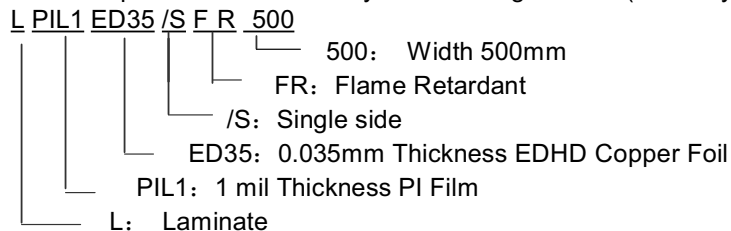
LPIX FR Flame Retardant & RoHS Laminates of Polyimide Copper

1. Description & Designation:

LPIXF R product consists of PI film clad copper by coating adhesive. It includes various types according to different copper and PI film utilized to meet the specific needs of customers.

Materials		Thickness	Supplier
Base film	Polyimide film	0.5, 1.0 and 2.0 mils (0.0125, 0.025, 0.050mm) etc.	China, etc.
Copper	EDHD Copper	1/2, 1.0 and 2.0 Oz/SF (0.012, 0.018, 0.035, 0.070mm) etc.	Mitsui, Fukuda
Adhesive	Modified epoxy adhesive	Translucence, 0.5 0.7 mils (0.0125 0.017mm) etc.	USA, Japan
Laminate structure		Single side (S) , Double sides (D)	

- The ED copper is the type of EDHD and is classified by the treatment surface color: ED as coffee, EDPM as pink;
- Some special types appointed by customers can also be produced besides the common types of PI and copper listed in the above form.
- LPIX FR product is identified by the following method (X is may different letter for the different PI supplier):



2. Features & Applications:

LPIXF R products are widely used in the data communication, avionics, aerospace, defense, personal computer and automotive fields. It possesses following features:

- Meet the RoHS requirement and pass SGS certificate.
- High bond strength, excellent electrical properties and good dimensional stability.
- Excellent solderability, good chemical resistant to process chemicals and solvents.
- Very competitive price under keeping good performance.
- The appearance and dimension stability are not good as the series of LPI FR because the limited PI quality.

3. Package

- Standard roll: 50+0.25 square meters or 500+2.0square feet per roll, maximum 2 splices and minimum 20m distance during two splices.
- Standard width: 500mm width except the customer's special instruction within the maximum width 500mm.
- Inner diameter core: 6 inches (152mm), packed in carton and outside wrapped with PE film.

4. Storage:

- Storage time: 12 months since production date; please use after inspection again passed for the materials over the storage time.
- Recommended storage condition: temperature 68 86? (about room Temp. and cool no needed), maximum relative humidity 75%.
- Excessive exposure to heat and moisture may cause copper oxidation.

**LPIX FR Flame Retardant & RoHS Laminates of Polyimide Copper
Data Sheet of Performance**

Property To Be Tested	Test Method	Typical Product Value LPIL1ED35/S FR	Typical Product Value LPIL1ED18/S FR
Peel strength, minimum, lb./in.w idth As received	IPCT M6 50 2.4.9 Method B	9.0	9.0
After sold float	Method D	9.0	9.0
Tensile strength, minimum lb./in. ²	IPCT M6 50 2.4.19	12,800	12,800
Elongation, minimum percent	IPCT M6 50 2.4.19	80	80
Flexural endurance, minimum cycles	IPCT M6 50 2.4.3	In 2000 Out 1500	In 2000 Out 1500
Adhesive Appearance	By eye	Translucence	Translucence
Adhesive Thickness	Q000463	0.023mm	0.023mm
Dimensional stability, maximum, percentage,	IPCT M6 50 2.2.4 Method B Method C	+/- 0.25 +/- 0.25	+/- 0.25 +/- 0.25
Solder float	IPCT M6 50 2.4.13 Method A Method B	500? 30seconds Pass 550? 30seconds Pass	500? 30seconds Pass 550? 30seconds Pass
Flammability	IPCT M6 50 2.3.8.1	FR, No certificate	FR, No certificate
Chemical resistance, percentage	IPCT M6 50 2.3.2	80	80
Dielectric constant, maximum (at 1 MHz)	IPCT M6 50 2.5.5.3	3.51	3.51
Dissipation factor, maximum (at 1 MHz)	IPCT M6 50 2.5.5.3	0.018	0.018
Volume resistivity, minimum, megohm cm	IPCT M6 50 2.5.17	10 ⁶	10 ⁶
Surface resistance, minimum, megohms	IPCT M6 50 2.5.17	10 ⁵	10 ⁵
Dielectric strength, minimum, volts/mil	ASTM D 149	2500	2500
Insulation resistance, minimum, megohms, at ambient	IPCT M6 50 2.6.3.2	10 ⁵	10 ⁵
Moisture and insulation resistance, minimum, megohms	IPCT M6 50 2.6.3.2	10 ⁵	10 ⁵
Moisture absorption, maximum, percent	IPCT M6 50 2.6.2	4.0	4.0

Mark: Above data sheet are base on the typical products values. The final data for specific products supplied, please check the testing report attached with the shipment. These data are only for user's reference. The user should determine the suitability of JJFlex LPIXF R materials for each application.