

ThinFlex Corporation

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ThinFlex-W22, W-2005ED-N4 Adhesiveless Double Sided Copper Clad Laminate

(Halogen Free)

ThinFlex

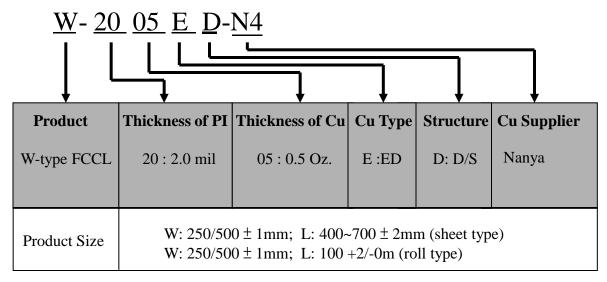
IPC Designation IPC-4204/11

ThinFlex-W22, W-2005ED-N4 is an adhesiveless double-sided (D/S) copper clad laminate, using ThinFlex TPI film and laminated with ED copper foil on both sides. The W-2005ED-N4 adhesiveless D/S composites are designed for a wide variety of flexible circuit applications which require advanced material performance and high reliability.

1. Product Characteristics:

- * Excellent dimensional stability
- * Excellent flexibility
- * Excellen etching capability
- * Excellent flame resistance
- * Excellent chemical resistance
- * Excellent thermal, mechanical, and electrical properties
- * Low moisture absorption

2. Specifications:



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

Technical Data Sheet: 201401





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3. Construction:

Copper foil Polyimide film Copper foil

4. Properties:

IPC Designation IPC-4204/11 **Test item** W-2005ED-N4 Unit **Test Method** Peel Strength As Received Kgf/cm ≥ 0.8 JIS C 6471 Method B ≥ 0.8 Solder Float Kgf/cm JIS C 6471 Method B Kgf/cm ≥ 0.8 JIS C 6471 Method B After Temp. Cycling JIS C 6471 Method B ≥ 0.8 Chemical Resistance Kgf/cm Kg/mm² IPC-TM-650 2.4.19 ≥25 Tensile Strength (Base Film) Elongation (Base Film) % IPC-TM-650 2.4.19 ≥25 Tensile Modulus (Base Film) Kg/mm² ≥600 ASTM D882 Initial Tear Strength (Base Film) ≥800 IPC-TM-650 2.4.16 g Propagation Tear Strength (Base Film) g ≥ 15 IPC-TM-650 2.4.17.1 Flexural Endurance, MIT M.D. Cycles JIS-C 6471, 0.8mmR, 0.5kg NA T.D. Cycles JIS-C 6471, 0.8mmR, 0.5kg NA **Electrical Properties** Surface Resistance Ω $\geq 1.0 \times 10^{11}$ IPC-TM650 2.5.17 Ω-cm IPC-TM650 2.5.17 $\geq 1.0 \times 10^{12}$ Volume Resistance Ω IPC-TM650 2.6.3.2 $\geq 1.0 \times 10^9$ Insulation Resistance Dielectric Strength 5.5 ASTM-D149 kV/mil 3.3 IPC-TM650 2.5.5.3 Dielectric Constant (1GHz) 0.01 IPC-TM650 2.5.5.3 Dissipation factor (1GHz) Physical and Thermal Properties % -0.1~-0.1 IPC-TM650 2.2.4C M.D. **Dimensional Stability** T.D. % -0.1~-0.1 IPC-TM650 2.2.4C CTE ppm/°C 24 ThinFlex 350 **ThinFlex** T_q $^{\circ}$ C IPC-TM650 2.4.13 Solder Float 30sec at 288°C (550°F) Pass IPC-TM650 2.6.2 Moisture Absorption % 1.1 Chemical Resistance Pass IPC-TM650 2.3.2 ThinFlex um 86±10% Thickness tolerance **UL Flame Class** 94V-0 UL

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





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5. Storage:

ThinFlex-W22, W-2005ED-N4 will meet its shelf-life for at least 12 months after arrival at purchaser's factory with original package, stored at temperature of 25°C or less and relative humidity of 70% or less. The product is no need to be kept in the refrigeration.

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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