

DuPont™ Pyralux® AC

All-Polyimide Single-Sided Copper-Clad Laminate

Flexible Circuit Materials



Product Description

DuPont™ Pyralux® AC is a single-sided copper-clad laminate featuring an adhesive-less, all-polyimide dielectric layer. This material is ideal for use in single-side clad applications that require high density circuitry, along with chip-on-flex attachment. Offered with a variety of conductor types, DuPont™ Pyralux® AC provides designers, fabricators, and assemblers a versatile option to develop their flex circuit solution

Key Features and Benefits

- ED or RA Cu foil available with various surface treatments
- Excellent thermal resistance from all-polyimide dielectric
- Reliability during flex/bending enabled by excellent peel strength between dielectric and conductor
- Certified to IPC-4204/25
- Pass UL 94 test, UL File E161336
- RoHS Compliant

Packaging

DuPont™ Pyralux® AC single-sided copper-clad laminate is supplied as 100 linear meter (328 ft) rolls in widths of either 250 mm (9.8 in) or 500 mm (19.7 in). Other sizes are available by special order.

Storage and Warranty

DuPont™ Pyralux® AC single-sided copper-clad laminate should be stored in original packaging at temperatures of 4 - 29 °C (40 - 85 °F) and below 70% relative humidity. The product should not be frozen and should be kept dry, clean, and well-protected. Subject to compliance with the foregoing handling and storage recommendations, DuPont's warranties shall remain in effect for the period provided in the DuPont Standard Conditions of Sale.

Safe Handling

Prior to handling, DuPont recommends referencing the Pyralux® Safe Handling Guide available at pyralux.dupont.com.

Processing

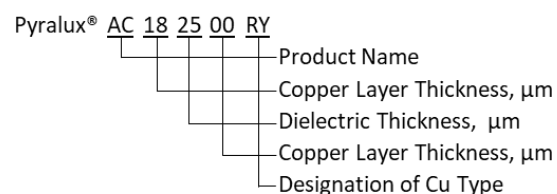
DuPont™ Pyralux® AC single-sided copper-clad laminate is fully compatible with all conventional flexible circuit fabrication processes, including oxide treatment and wet chemical plated-through-hole de-smearing. Fabricated circuits can be cover-coated and laminated together to form multilayers or bonded to heat sinks using polyimide, acrylic, or epoxy adhesives. Pyralux® AC processing guides available from your DuPont sales representative.

Table 1 –Standard Pyralux® AC single-sided copper-clad laminate Offerings

Product Code	Copper Thickness µm (oz/ft²) & Type	Dielectric Thickness µm (mil)
AC091200EN	09 (0.25) ED	12 (0.5)
AC092500EN	09 (0.25) ED	25 (1.0)
AC121200EM	12 (0.33) ED	12 (0.5)
AC121200RY	12 (0.33) RA	12 (0.5)
AC122000EM	12 (0.33) ED	20 (0.8)
AC122500EM	12 (0.33) ED	25 (1.0)
AC122500RY	12 (0.33) RA	25 (1.0)
AC125000RF	12 (0.33) RA	50 (2.0)
AC181200EM	18 (0.50) ED	12 (0.5)
AC181200RY	18 (0.50) RA	12 (0.5)
AC182000EM	18 (0.50) ED	20 (0.8)
AC182000RY	18 (0.50) RA	20 (0.8)
AC182500EM	18 (0.50) ED	25 (1.0)
AC182500RY	18 (0.50) RA	25 (1.0)
AC185000RY	18 (0.50) RA	50 (2.0)
AC185000RF	18 (0.50) RA	50 (2.0)
AC351200RHV	35 (1.00) RA	12 (0.5)
AC352500EY	35 (1.00) ED	25 (1.0)
AC352500RF	35 (1.00) RA	25 (1.0)
AC352500RHV	35 (1.00) RA	25 (1.0)
AC354500EY	35 (1.00) ED	45 (1.8)
AC355000RF	35 (1.00) RA	50 (2.0)
AC702500RF	70 (2.00) RA	25 (1.0)
AC705000RF	70 (2.00) RA	50 (2.0)

*At the end of the product code, "R or RY" designates rolled-annealed copper (e.g., AC182500RY) and "EN or EM" designates electro-deposited copper (e.g., AC182500EM).

Product Code Key



Product Performance

Table 3 - DuPont™ Pyralux® AC single-sided copper-clad laminate properties

Property	AC121200RY Typical Values	Test Method
Adhesion to Copper (Peel Strength)		IPC-TM-650 2.4.9
As Received, N/mm (lb/in)	0.6 (3.4)	Method B
After Solder, N/mm (lb/in)	0.6 (3.4)	Method D
Dimensional Stability (MD/TD)		IPC-TM-650 2.2.4
After Etching, %	±0.05 %	Method B
After Thermal (200 °C for 30 min), %	±0.05 %	Method C
Coefficient of Thermal Expansion		
XY-Axis, ppm/°C	19	IPC-TM-650 2.4.41
Solder Float, 288 °C for 10 s	Pass	IPC-TM-650 2.4.13
Moisture Absorption, %	0.9	IPC-TM-650 2.6.2
Volume Resistivity, Ω·cm	> 10 ¹⁶	IPC-TM-650 2.5.17
Surface Resistance, Ω	> 10 ¹²	IPC-TM-650 2.5.17
Moisture & Insulation Resistance, Ω	> 1x10 ⁸	IPC-TM-650 2.6.3.2
Tensile Modulus, GPa	> 7.5	IPC-TM-650 2.4.19
Tensile Strength, MPa	> 190	IPC-TM-650 2.4.19
Elongation, %	> 19	IPC-TM-650 2.4.19
Flexural Endurance, cycles	> 1600	JIS C6471 (MIT)
Glass Transition Temperature (T _g), °C	280	DuPont Method, TMA
Dielectric Constant (D _k) 1 MHz	3.7	IPC-TM-650 2.5.5.3 ASTM D2520
Loss Tangent (D _f) 1 MHz	0.003	IPC-TM-650 2.5.5.3 ASTM D2520

Data within this table are typical values, not the specification value, for the listed product. About the product specification, please refer to the specification sheet. Product performance can vary depending on sample preparation and test instrument.

Quality and Traceability

DuPont™ Pyralux® AC single-sided copper-clad laminate is manufactured under a certified ISO9001:2015 Quality Management System facility. Complete material and manufacturing records, which include archive samples of finished product, are maintained by DuPont. Each manufactured lot is identified for reference traceability. The packaging label serves as the primary tracking mechanism in the event of customer inquiry and includes the product name, batch number, size, and quantity.



pyralux.dupont.com

For more information on Pyralux® AC single-side copper-clad laminate or other DuPont products, please visit electronics.dupont.com.

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