



HIGH THERMAL STABILITY PEN FILM FOR POWER ELECTRONICS



High Thermal
Stability



Excellent Electrical
Insulation



Low Thermal
Shrinkage



High Mechanical
Strength



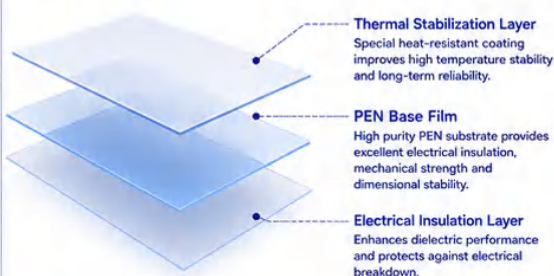
Long Term
Reliability



Chemical
Resistance



01 STRUCTURE



02 THICKNESS OPTIONS

Thickness (μm)	25	38	50	75	100	125	Custom
Tolerance (μm)	±2	±2	±2	±3	±3	±5	±5

03 TYPICAL PROPERTIES

Property	Test Method	Unit	25μm	38μm	50μm	75μm	100μm	125μm
Basis Weight	ASTM D374	g/m ²	34.5	52.5	69.0	103.5	138.0	172.5
Tensile Strength (MD)	ASTM D882	MPa	≥ 180	≥ 180	≥ 180	≥ 180	≥ 180	≥ 180
Tensile Strength (TD)	ASTM D882	MPa	≥ 180	≥ 180	≥ 180	≥ 180	≥ 180	≥ 180
Elongation at Break (MD)	ASTM D882	%	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100
Elongation at Break (TD)	ASTM D882	%	≥ 80	≥ 80	≥ 80	≥ 80	≥ 80	≥ 80
Thermal Shrinkage (150°C, 30min)	ASTM D1204	%	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3
Dielectric Strength	ASTM D149	kV/μm	≥ 200	≥ 200	≥ 200	≥ 200	≥ 200	≥ 200
Volume Resistivity	ASTM D257	Ω·cm	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶	≥ 1.0×10 ¹⁶
Surface Resistivity	ASTM D257	Ω/sq	≥ 1.0×10 ¹⁵	≥ 1.0×10 ¹⁵	≥ 1.0×10 ¹⁵	≥ 1.0×10 ¹⁵	≥ 1.0×10 ¹⁵	≥ 1.0×10 ¹⁵
Dielectric Constant (1kHz)	ASTM D150	—	3.2	3.2	3.2	3.2	3.2	3.2
Dissipation Factor (1kHz)	ASTM D150	—	≤ 0.004	≤ 0.004	≤ 0.004	≤ 0.004	≤ 0.004	≤ 0.004

04 THERMAL PERFORMANCE

Property	Test Method	Unit	Typical Value
Continuous Use Temperature	—	°C	-60 ~ 180
Melting Point (Tm)	DSC	°C	265 ~ 270
Glass Transition Temperature (Tg)	DSC	°C	≈ 120
Heat Distortion Temperature (HDT)	ASTM D648	°C	≥ 180
Low Temperature Flexibility	—	°C	No cracking at -60°C

* Typical values are measured under standard conditions and should not be used for specification purposes.

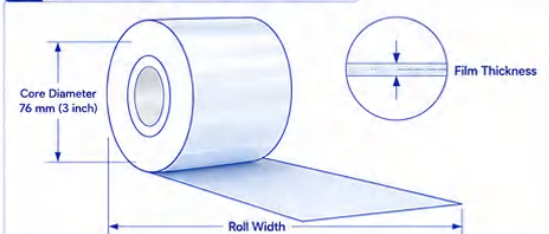
05 ELECTRICAL PROPERTIES

Property	Test Method	Unit	Typical Value
Dielectric Strength	ASTM D149	kV/μm	≥ 200
Breakdown Voltage	ASTM D149	kV	≥ 8
Volume Resistivity	ASTM D257	Ω·cm	≥ 1.0×10 ¹⁶
Surface Resistivity	ASTM D257	Ω/sq	≥ 1.0×10 ¹⁵
Dielectric Constant (1kHz)	ASTM D150	—	3.2
Dissipation Factor (1kHz)	ASTM D150	—	≤ 0.004

06 MECHANICAL PROPERTIES

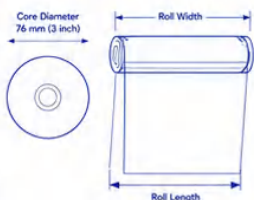
Property	Test Method	Unit	Typical Value
Tensile Strength (MD)	ASTM D882	MPa	≥ 180
Tensile Strength (TD)	ASTM D882	MPa	≥ 180
Elongation at Break (MD)	ASTM D882	%	≥ 100
Elongation at Break (TD)	ASTM D882	%	≥ 80
Young's Modulus (MD)	ASTM D882	MPa	≥ 4500
Young's Modulus (TD)	ASTM D882	MPa	≥ 4500
Puncture Strength	ASTM D5748	N	≥ 80

07 DIMENSIONAL DRAWING (REFERENCE)



08 ROLL SPECIFICATIONS

Standard Width (mm)	300	500	600	1000	Custom
Width Tolerance (mm)	± 2				± 3
Standard Length (m)	100	200	500	1000	Custom
Length Tolerance (m)	± 2				± 5
Core Diameter	76 mm (3 inch)				
Max. Roll Diameter	800 mm				
Slitting Tolerance	± 0.5 mm				
Edge Condition	Clean cut, no burr				
Winding	Tension control, wrinkle free				



09 TYPICAL APPLICATIONS



Custom thickness, width, length and performance parameters are available upon request.