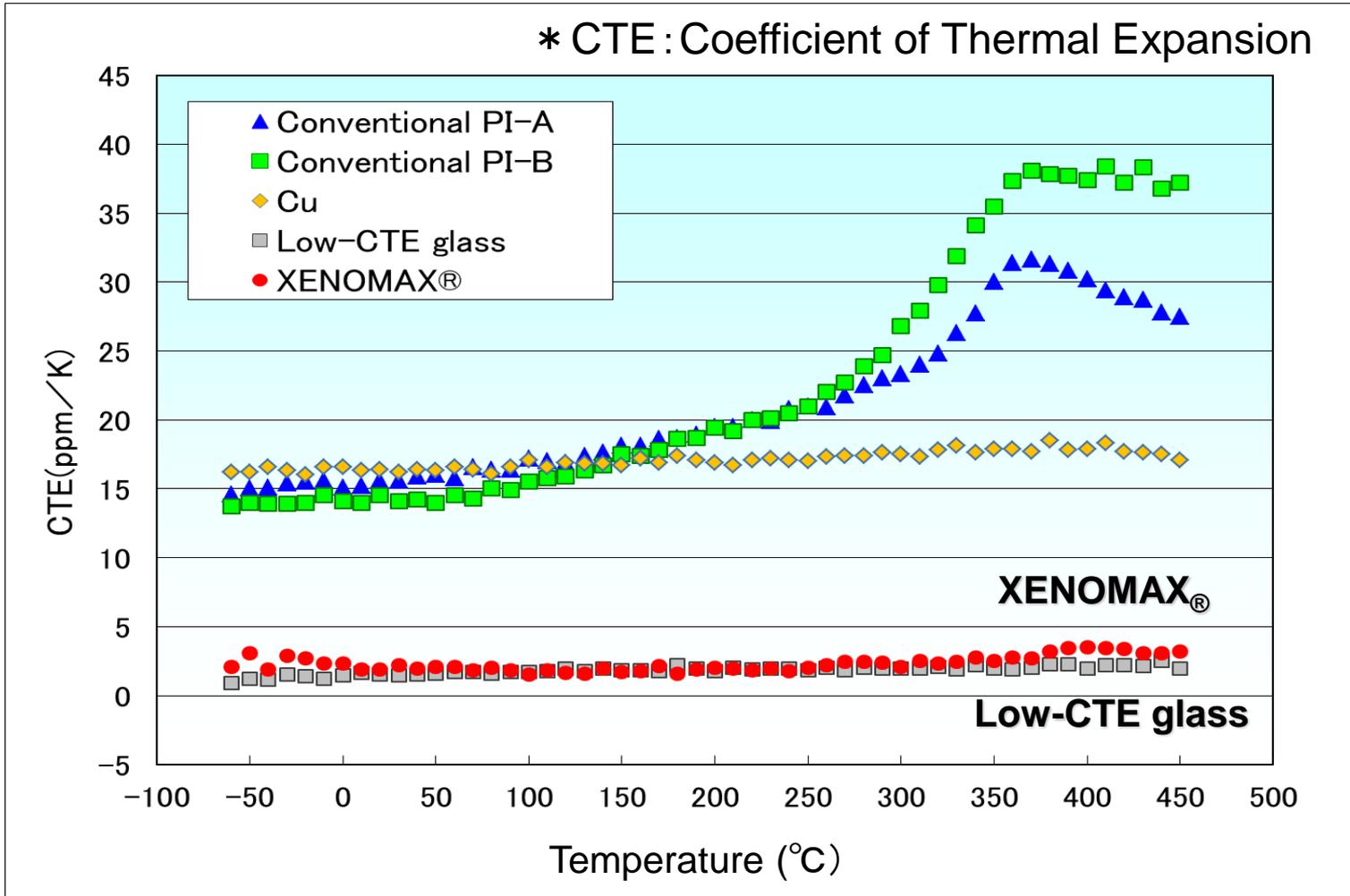


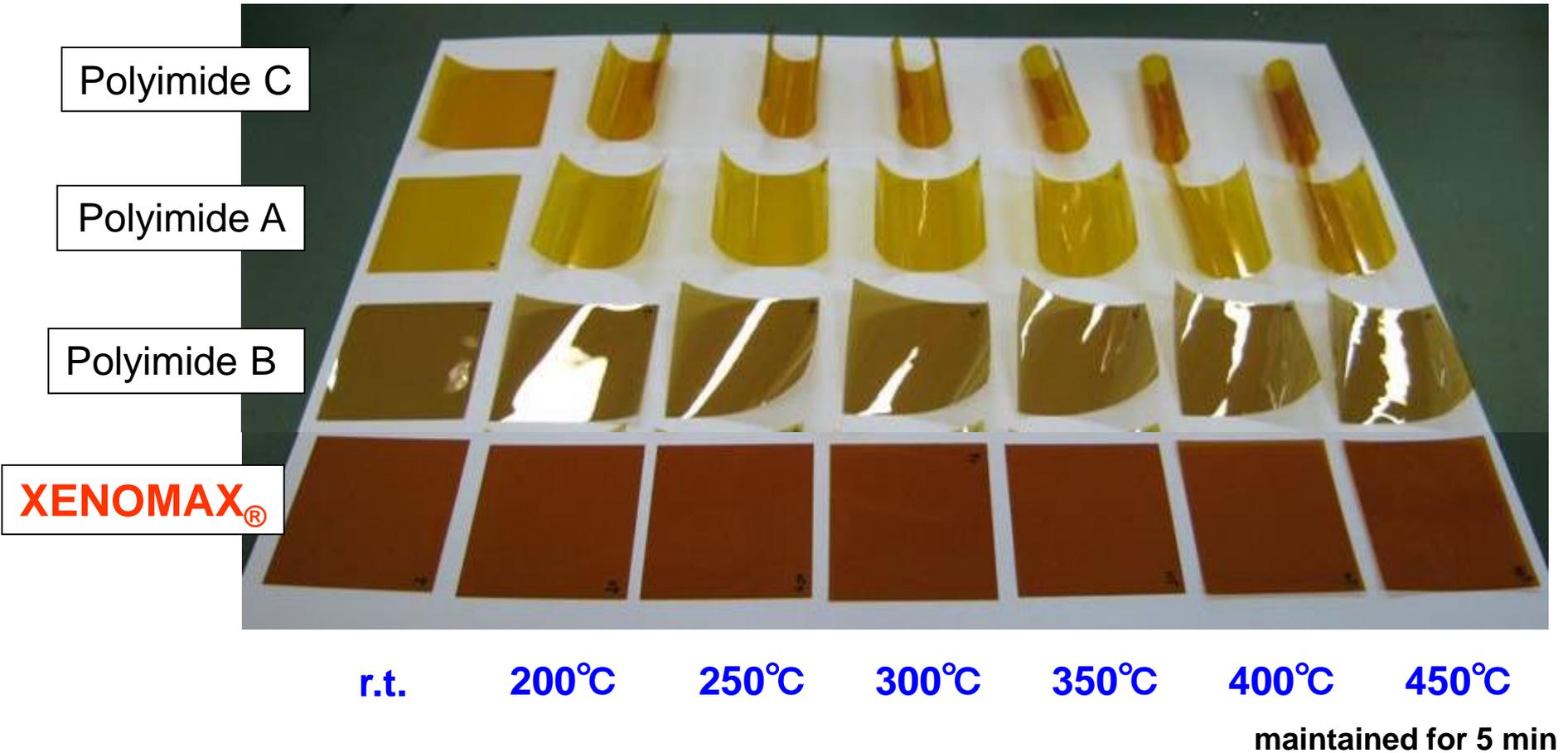
# Temperature dependence of CTE



- Maintains a Low CTE over a wide temperature range

\* The values shown here are typical values, not guaranteed values.

# Thermal Stability – Planarity –



Maintains a planarity over a wide temperature range

# Surface Smoothness



	Conventional PI	<b>XENOMAX®</b>	Glass for TFT
AFM Image			
Surface roughness Ra	3 nm	0.5 nm	0.2 nm

\*AFM : Atomic Force Microscopy  
\*\*Ra : arithmetic average roughness

## Smooth enough surface as TFT substrate

The values shown above are typical values, not guaranteed values.

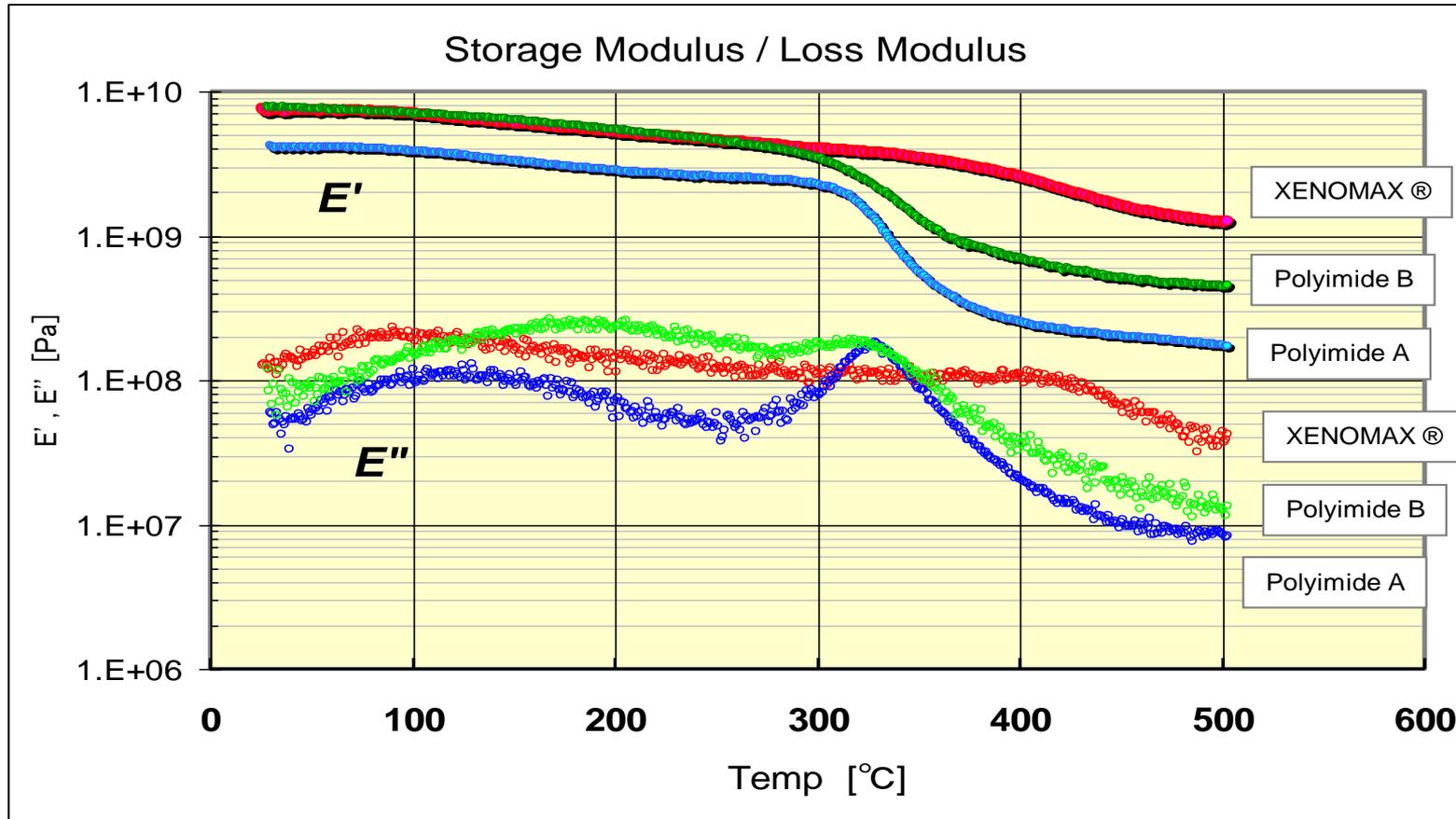


# Mechanical and Electrical Features

Items	Unit	Grade		Measurement Method
		38μm	15μm	
Tensile modulus	GPa	8.8	9.0	ASTM D882
Tensile strength	MPa	450	580	ASTM D882
Elongation	%	40	55	ASTM D882
Density	g/cm <sup>3</sup>	1.50	1.50	density gradient column, 30°C
Surface resistivity	Ω/□	>10 <sup>17</sup>	10 <sup>17</sup>	500V, 23°C
Volume resistance	Ω·cm	>10 <sup>16</sup>	>10 <sup>16</sup>	500V, 23°C
Dielectric constant	-	3.3	3.3	1kHz
Dielectric tangent	-	0.008	0.008	
Breakdown voltage	kV	9.5	6.4	ASTM D149, 50Hz

\* The values shown above are typical values, not guaranteed values.

# Viscoelastic Property



\* The values shown here are typical values, not guaranteed values.

- Less modulus drop over 300°C  
→ applicable to a high temperature process

# UL Certification



Thickness	Flame resistance	HWI	HAI	RTI [°C]		D495	CTI
				Elec.	Str.		
$\mu$ m	UL94	PLC	PLC			PLC	PLC
5	VTM-0	0	4	220	220	4	3
10	VTM-0	0	3	240	240	4	3
25	V-0	0	3	240	240	4	3
50	V-0	0	2	260	240	4	3

**UL FILE No.QMFZ2.E247930**

PLC: Performance Level Categories

HWI: Hot Wire Ignition (PLC:0~5)

HAI: High-current Arc Ignition (PLC:0~4)

RTI: Relative Thermal Index

(Elec: electrical property, Str: strength property)

D495: Arc Resistance (PLC:0~7)

CTI: Comparative Tracking Index (PLC:0~5)