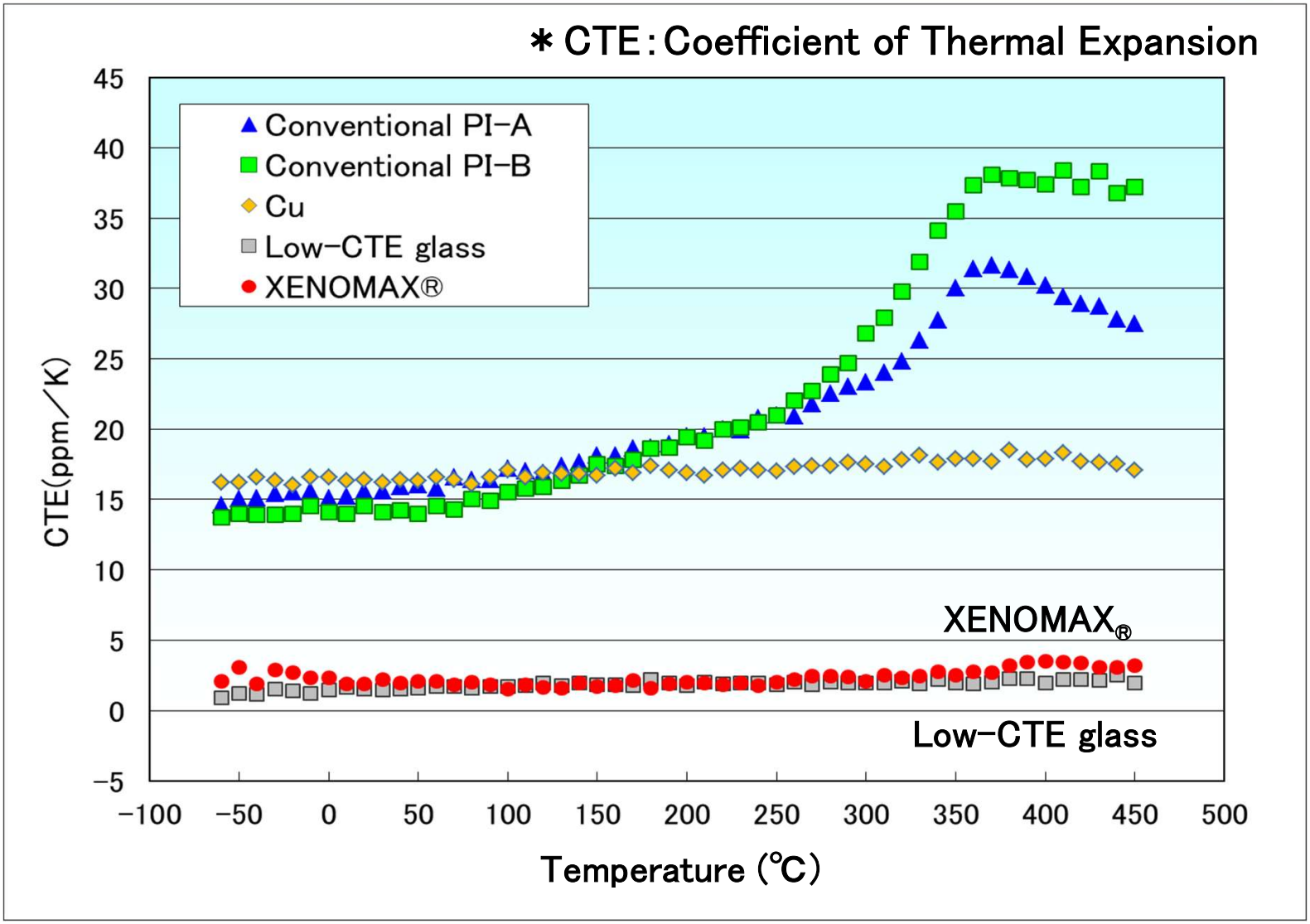
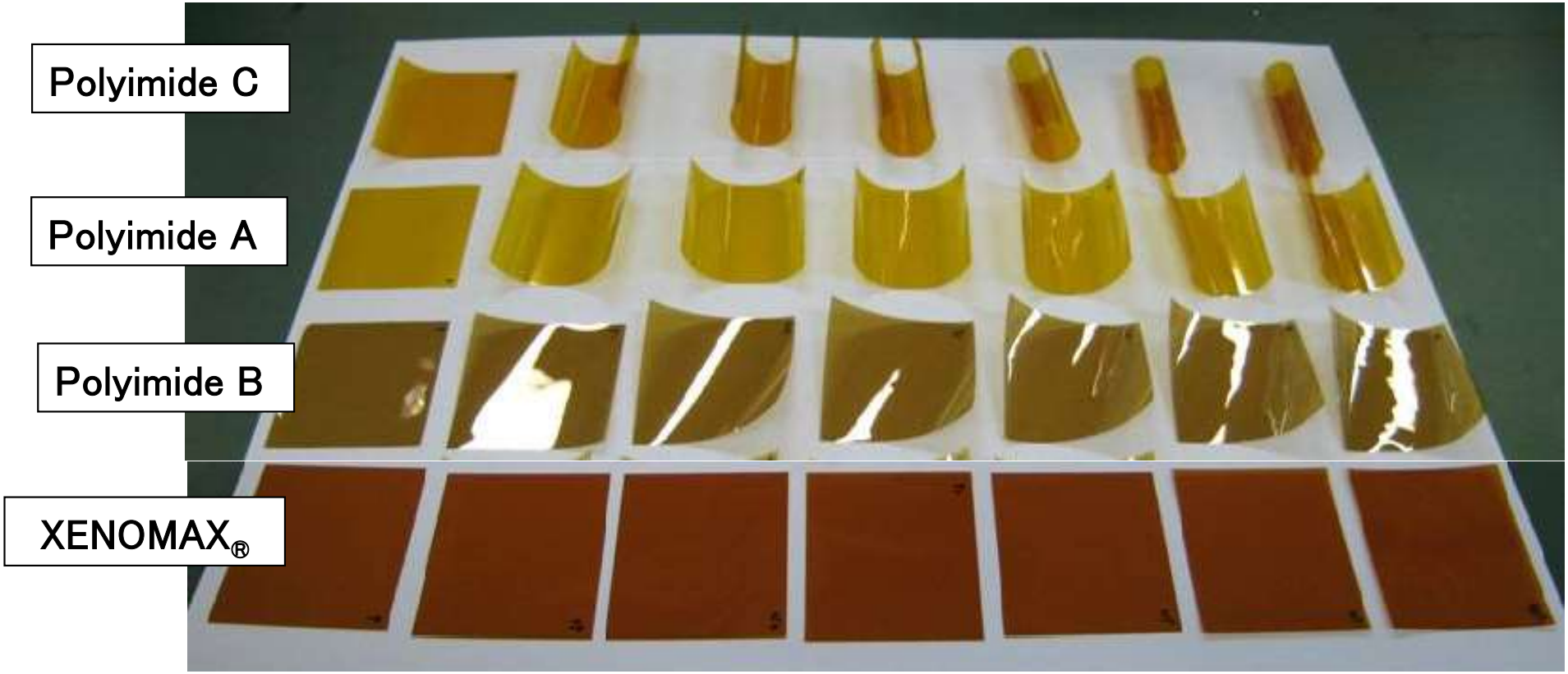
Temperature dependence of CTE



- Maintains a Low CTE over a wide temperature range

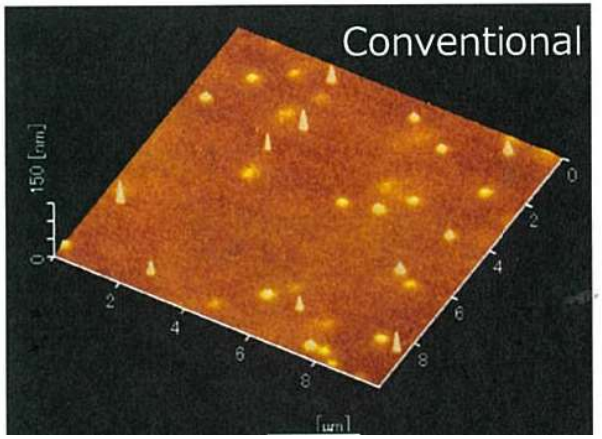
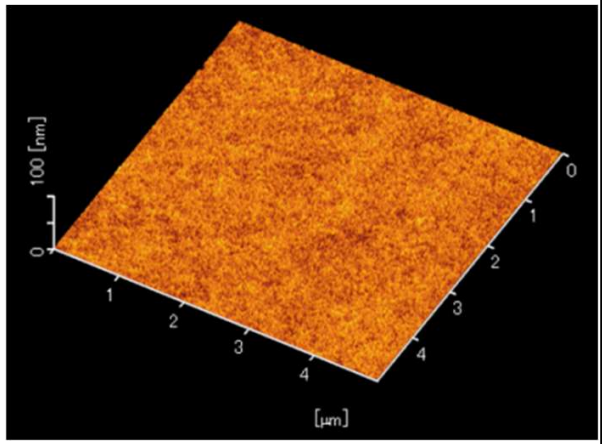
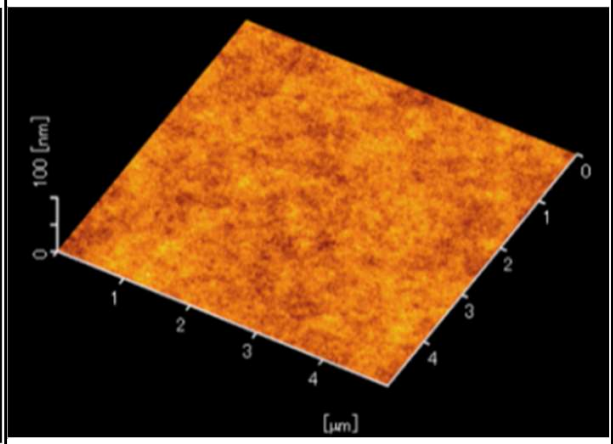
＊ The values shown here are typical values, not guaranteed values.

Thermal Stability –Planarity–



Maintains a planarity over a wide temperature range

Surface Smoothness

	Conventional PI	XENOMAX®	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

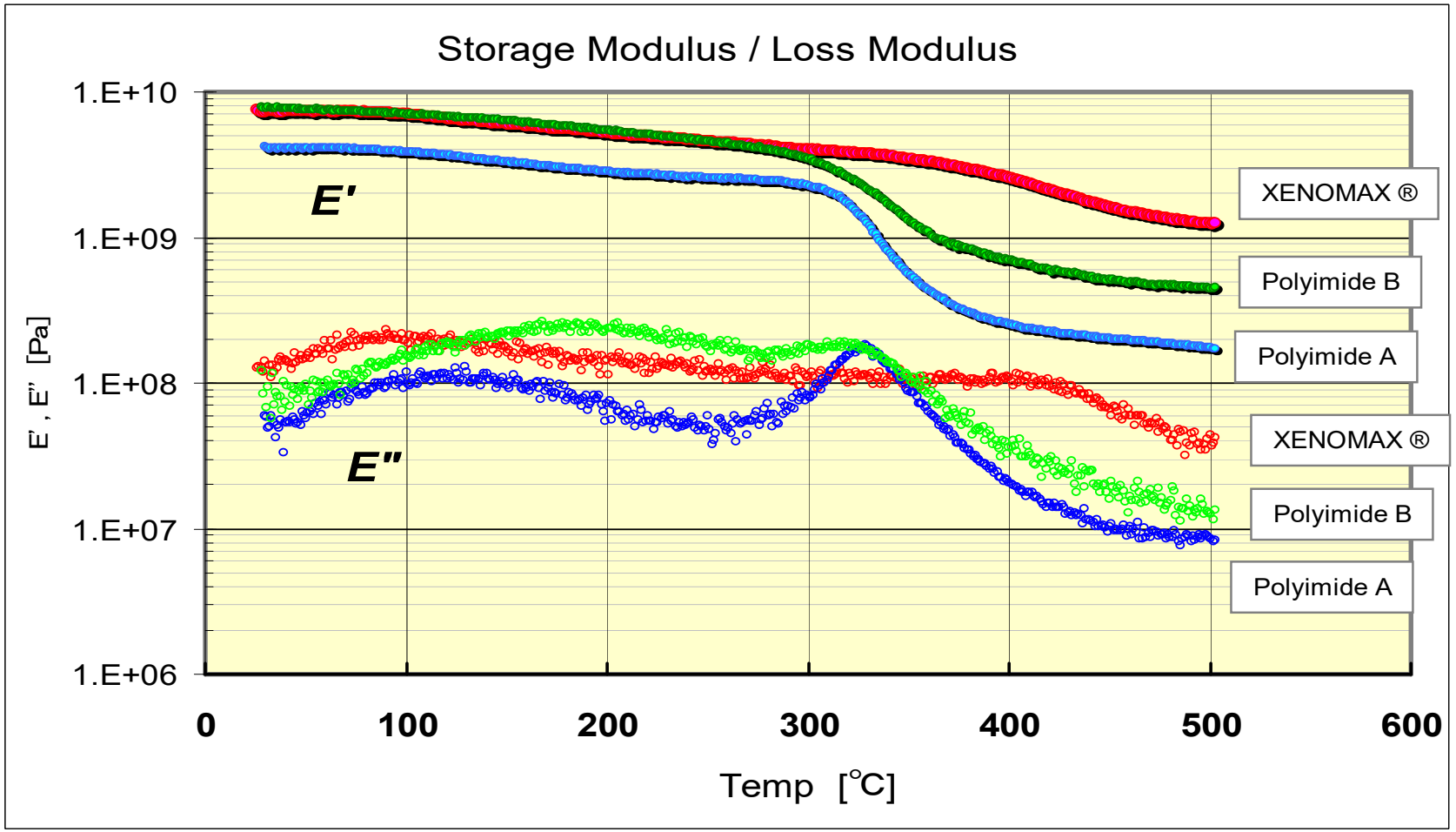
The values shown above are typical values, not guaranteed values.

Mechanical and Electrical Features

Items	Unit	Grade		Measurement Method
		38 μm	15 μm	
Tensile modulus	GPa	9.5	9.3	ASTM D882
Tensile modulus	MPa	480	540	ASTM D882
Elongation	%	40	47	ASTM D882
Density	g/cm^3	1.50	1.50	density gradient column、30℃
Surface resistivity	Ω/□	$>10^{16}$	$>10^{16}$	ASTM D257 23℃、50%RH
Volume resistance	Ω・cm	$>10^{15}$	$>10^{15}$	
Dielectric constant	−	3.7	3.8	Cylindrical cavity resonance method 10GHz、24℃、50%
Dielectric tangent	−	0.012	0.012	
Breakdown voltage	kV	10	4.0	ASTM D149

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℃

  → applicable to a high temperature process

UL Certification

Thickness	Flame resistance	HWI	HAI	RTI [℃]		D495	CTI
μm	UL94	PLC	PLC	Elec.	Str.	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. E508693

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)