

## STRETCHING THE FUTURE OF ELECTRONIC MATERIALS

# BEYOLEX™

## BEYOLEX™ Thermosetting Stretchable Film

This novel polymer substrate is designed for flexible, stretchable, conformable and pliable printed electronics applications. It is a unique material based on a proprietary, thermoset, non-silicone polymer system which provides outstanding performance.

### Features and Benefits

- Good Elongation
- Ultra Low Hysteresis
- High Temperature Resistance
- High Environmental Stability
- Compatible With Wide Variety Of Functional Inks

### Typical Printed Electronic Applications

- Sensors
- Health And Wellness
- Automotive
- Aerospace
- Structural Electronics



## Typical Properties

Properties		Test Method*	Unit	BEYOLEX™
Elongation	Initial	ASTM D822	%	> 200
	Aft. High Temp & High Humid Test **			> 200
	Aft. Heat Cycle ***			> 200
Modulus @ 50% Strain	Initial	ASTM D822	MPa	< 2.5
	Aft. High Temp & High Humid Test **			< 2.5
	Aft. Heat Cycle ***			< 2.5
Hysteresis	Initial	Panasonic Original	%	< 0.1
	Aft. High Temp & High Humid Test **			< 0.1
	Aft. Heat Cycle ***			< 0.1
Heat Resistance		TG/DTA (@Air)/ 5% weight loss	°C	302
Breakdown Voltage		IEC 60243-1	KV/mm	98
Dielectric Property (Dk/Df)		IPC TM650 2.5.5.10	@10GHz	2.8 / 0.052
			@26GHz	3.3 / 0.073
Transparency			%	> 90
Stretch Cycle		50% stretch	cycle	> 10,000

\* Measurements are compliant with the standards other than Panasonic's original test

\*\* Test Condition : 85°C / 85%RH / 1000h

\*\*\* Test Condition : -55°C(5min) → 125°C(5min) / 1000cyc

The values in this document are representative measured properties and not specifications or guarantees of performance

### Disclaimer

This material is provided strictly on an as-is basis. No warranty shall be given by Panasonic with regard to the material, including, but not limited to the quality, safety, fitness for a particular purpose, merchantability, or compatibility with other materials and devices. Panasonic shall have no obligation, liability or responsibility to you or any third parties/individuals for any damage arising out of or incurred in relation to this material.

### Usage Policy

The use of the Panasonic Products for weapons of mass destruction (including missiles, chemical weapons, biological weapons, nuclear weapons) is strictly prohibited. Please contact us firstly if you intend to use the material for any applications of (i) aerospace usage including aircraft and spacecraft; (ii) weapon or other military usage; or (iii) the medical instruments or products that are applied to human body. Panasonic will conduct the preliminary review in accordance with our company policy before we decide to start the supply of the material.

### North America

205 Ravendale Dr,  
Mountain View, CA, 94043  
Tel: +1-408-861-3946  
Contact: Tomohiro Fukao  
[emd@us.panasonic.com](mailto:emd@us.panasonic.com)

### Europe

Caroline-Herschel-Strasse 100, 85521  
Ottobrunn, Germany  
Tel: +49-151-74114697  
Contact: Tsuyoshi Takeda  
[tsuyoshi.takeda@eu.panasonic.com](mailto:tsuyoshi.takeda@eu.panasonic.com)

### Japan

1006 Oaza Kadoma,  
Kadoma, Osaka, 571-8506  
Tel: +81-6-6908-1101  
Contact: Masato Minami  
[minami.masato@jp.panasonic.com](mailto:minami.masato@jp.panasonic.com)