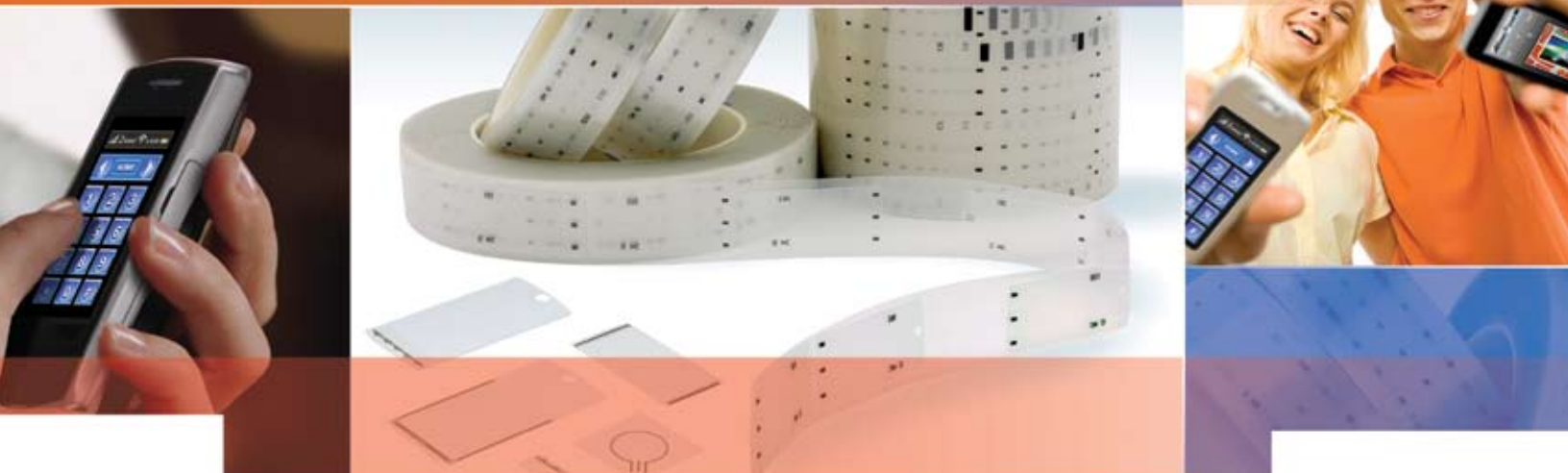


# MicroTouch™ Flex Capacitive Touch Sensor

## Nearly Invisible Patterned ITO for Mobile Handheld Applications



### Product Highlights

- In-house ITO deposition
- Roll-to-roll production process enables quick scale up for volume production
- PET film-based sensor for flexibility in shape designs
- Proprietary index matching technology to minimize ITO pattern appearance
- Laminate either ITO-coated side or unpatterned side to protective lens or bond directly to LCD

### Applications

- Cell Phones
- Personal Digital Assistants (PDAs)
- Personal Navigation Devices (GPS)
- MP3 Players
- Ultra-mobile PCs (UMPC)
- Remote Controls
- Digital Cameras

### Touch Technology and High-Volume Production Expertise

With 20+ years experience in touch technology development and commercialization 3M Touch Systems is uniquely positioned to provide the Mobile Handheld industry with a next-generation projected capacitive touch sensor – the **MicroTouch™ Flex Capacitive Touch Sensor**. While other touch manufacturers rely on third party suppliers for their ITO-coated (Indium Tin Oxide) polyester film, 3M “deposits” ITO via an in-house, roll-to-roll process which eliminates 3rd party supply constraints. 3M’s unique process provides a consistent and quality product from small prototype volume to full scale production.

### Highly Customized to Meet Manufacturer Requirements

Using a non-glass substrate increases the design flexibility of the Flex Capacitive touch sensor since it allows the film to be patterned and die cut to create a touch sensor in any shape imaginable.

Various material thicknesses are available to meet compact design requirements, currently ranging from .050 mm to .125 mm thickness. These ultrathin touch sensors can be optically laminated to a protective lens when increased surface durability is required or bonded directly to the LCD face.

Also, by using 3M’s proprietary index matching technology, the ITO pattern can be made nearly invisible for applications where optical clarity is important.

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## Physical Characteristics

Construction	Single layer
PET Thickness	0.050mm and 0.125mm
Size Range	25.4mm to 114mm
ITO Resistance	60 ohms/sq to 400 ohms/sq (nominal)
Carbon Resistance	100 ohms/sq (nominal)
Silver Resistance	0.05 ohms/sq (nominal)

## Printing Capability

Space width	≤ 0.254mm
Trace width	≤ 0.254mm

## Optical Characteristics<sup>1</sup>

Transmission	≥ 88%
	Nearly invisible ITO from index matching using 3M proprietary technology

## Environmental

Operating Temperature Range	0°C to 70°C
Storage Temperature Range	-40°C to 60°C, 40% RH

## Functionality

Input	Finger
Functions	Discrete button, Slider Bar, and Full X,Y

## Options

Optically clear adhesive on ITO side allows for lamination to protective lens or LCD  
 Optically clear adhesive on PET side allows for lamination to protective lens or LCD  
 Cover laminate available to protect ITO from handling issues  
 Coating available to help shield touch sensor from display noise

<sup>1</sup> Optical characteristics measured using BYK Gardner Haze Guard equipment.  
 Product construction is 0.125mm PET laminated to a glass lens using optically clear adhesive.



Roll-to-roll manufacturing process.



Highly customized touch sensors.



Ultrathin construction.

<sup>1</sup> Optical characteristics measured using BYK Gardner Haze Guard equipment. Product construction is 0.125mm PET laminated to a glass lens using optically clear adhesive.

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