



Elephantech

P-Flex® PET Applications



IMPC™

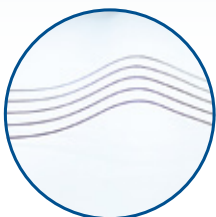
About IMPC™ (In-Mold Printed Circuit)

IMPC™ (In-Mold Printed Circuit) is a type of IME (In-Mold Electronics) technology where an inkjet-printed circuit film is given a three-dimensional form and integrally molded with various plastic resins.

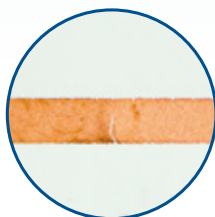
- ✓ By using a PET substrate and making the copper wiring meander (meander wiring), processes such as vacuum forming can be used in achieving a three-dimensional form.
- ✓ By integrating the circuit board in a resin component, IMPC™ eliminates the need for a separate housing.

Straight wiring will be torn when made to be three-dimensional but the problem can be solved by using meander wiring.

straight wiring



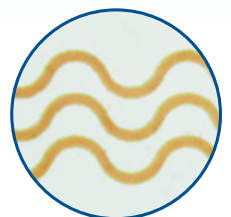
Cracks appear

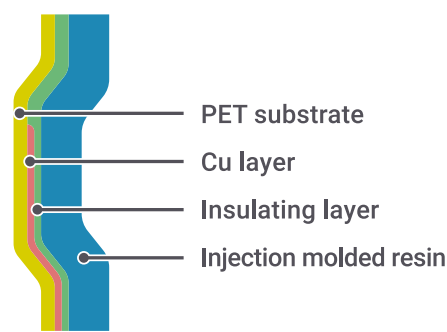
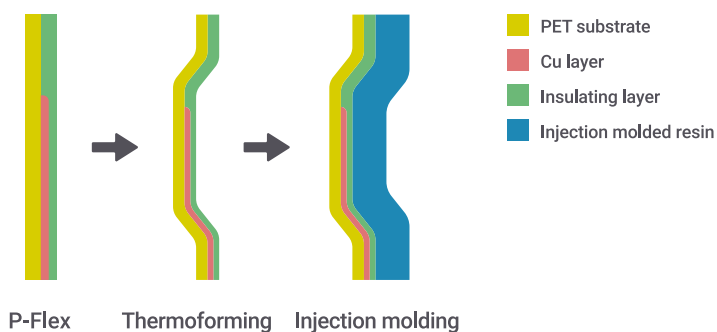


meander wiring



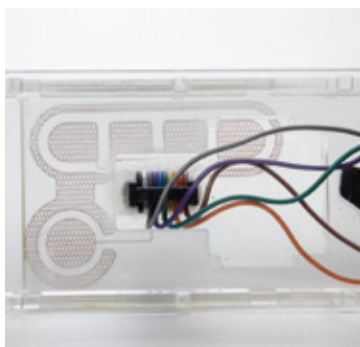
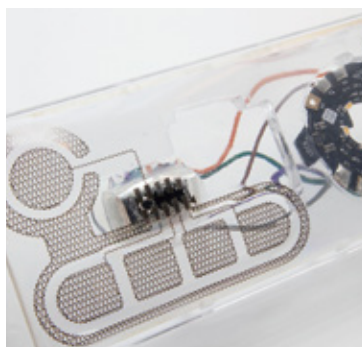
Cracks do not appear





The circuit is made to fit three-dimensional curves and molded in resin as a single-piece.

About IMPC™



Advantages of integration

- ✓ Reduction of total weight
- ✓ Reduced number of components
- ✓ Improvement in designability by supporting curved surfaces
- ✓ Miniaturization compatibility
- ✓ Electronic devices can be soldered onto copper circuits
- ✓ The use of inkjet printing to form the circuit makes design changes easy
- ✓ Wiring stress is lessened by using meander wiring for the three-dimensional parts

Application

- ✓ Thinner, lighter touch sensors and LED lighting
- ✓ Performance improvements from being able to place antennas and sensors on the surface

Industrial field

- Consumer Equipment
- Industrial Equipment

About P-Flex®

About Elephantech's manufacturing method (Pure Additive™ processing)

This manufacturing method consists of inkjet-printing silver nano-ink onto the substrate before electroless copper plating is applied to form the circuit. By reducing the amount of metal, liquid waste and man-hours, we can lessen manufacturing costs and shorten the lead time.

(* Patent No. 6300213 acquired)

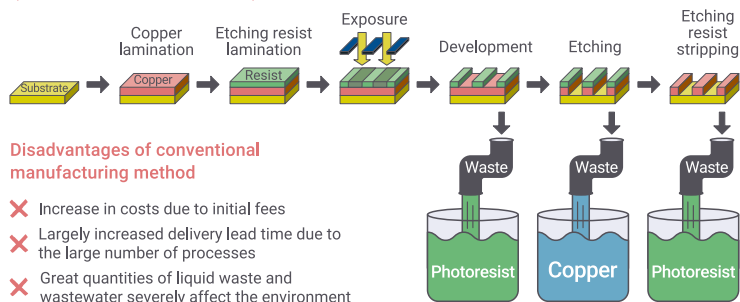
Elephantech's manufacturing method (Pure Additive™ processing)



Advantages of Elephantech's manufacturing method

- ✓ Forming the circuit only where needed allows for a reduction in manufacturing cost and environmental footprint.
- ✓ A simple manufacturing process allowing for a shorter lead time.

Conventional manufacturing method (subtractive method)



Disadvantages of conventional manufacturing method

- ✗ Increase in costs due to initial fees
- ✗ Largely increased delivery lead time due to the large number of processes
- ✗ Great quantities of liquid waste and wastewater severely affect the environment

Company Overview



Elephantech

Elephantech Inc. (Formerly AgIC Inc.*)

Contact QR code



Establishment
 Address
 Capital
 Representative
 Business description

January 2014
 4-3-8 Hatchobori, Chuo-ku, Tokyo 104-0032, Japan
 JPY 310 million
 Shinya Shimizu, CEO
 Development of printed electronics manufacturing technology and provision of related services
<https://www.elephantech.co.jp/en>
<https://www.elephantech.co.jp/en/about/#contact>

Website
 Contact

*Changed corporate name on September 4, 2017