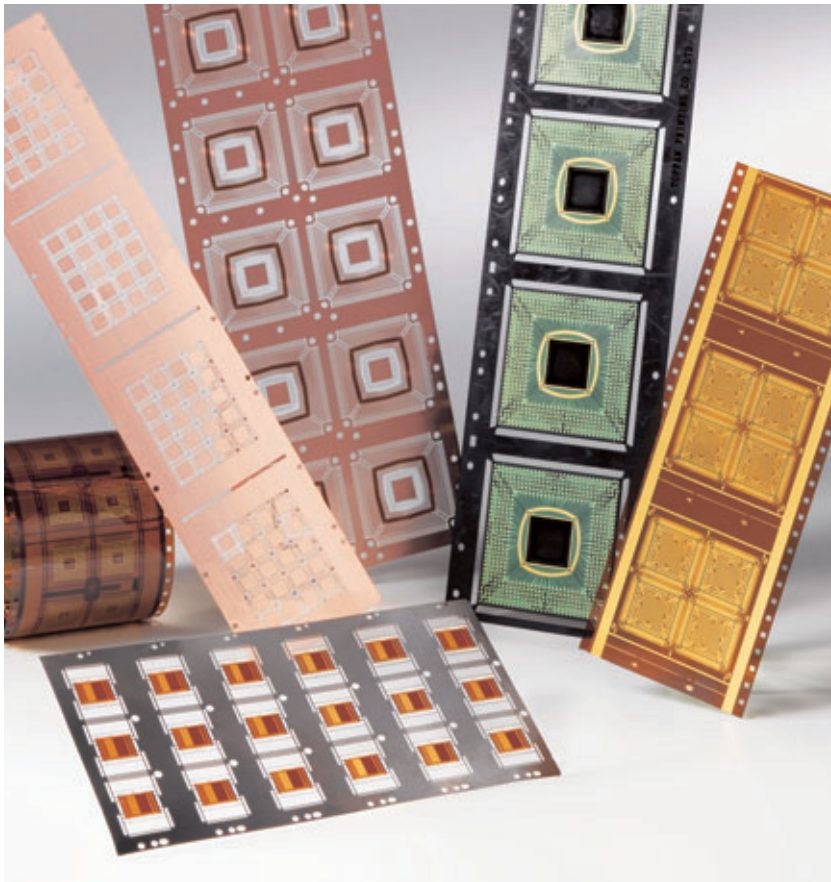


## Semiconductor Package-related Products



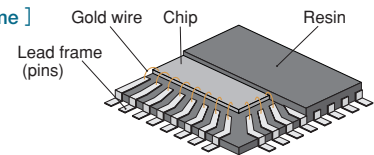
### Providing package-related products corresponding to the needs of advanced semiconductors

Semiconductor package-related products play an important role in effectively bringing out their maximum performance in terms of functions such as protection of delicate IC chips from the surrounding environment, ensuring electrical connection during the mounting of IC chips on printed wiring boards and dissipation of heat from IC chips. Moreover, they are indispensable for the prolonged and stable operation of IC chips.

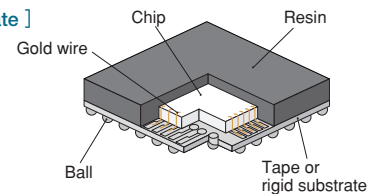
Along with the ongoing trends of smaller electronic devices with more sophisticated functions, demand for semiconductors to be used in digital electric appliances, automobiles and the like has been steadily expanding. At the same time, requirements for semiconductor packages have been increasingly demanding in terms of higher pin count, higher speed and enhanced reliability. In the midst of more diversified and advanced needs in the market, Toppan has been developing and manufacturing various types of leadframes, tape BGA/CSP substrates and FC-BGA substrates, etc. by utilizing the cutting-edge etching technology that we have fostered for a long period.

#### Structure of semiconductor package

##### [ Lead frame ]



##### [ BGA substrate ]



#### Progress of semiconductor packages

Toppan has been providing a variety of products corresponding to the needs of the rapidly changing semiconductor market.

