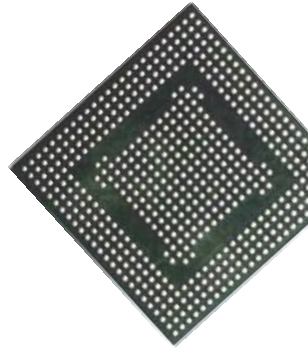


# Hybrid fc-FBGA Over Mold / MUF



## Description

Hybrid fc-FBGA is a package that combines the benefits of traditional packaging and the benefits of stack-die- techniques.

This package is stacked die hybrid with flip chip connectivity on the bottom die and wire bonding on the top die with plastic overmolded encapsulation and an array of fine pitch solder ball terminals.

Hybrid FCFBGA is available with dispensed underfill(DUF) and Molded underfill(MUF) with solder bump.

<b>Package Sizes</b>	8 x 8mm ~ 19 x19mm
<b>I/O Counts</b>	225 ~ 529

## Features

- Eutectic, Hi-Pb, Pb-free & Cu pillar bumps
- Ni-Au, Ni-Pd-Au, SOP (solder on pad), OSP (organic solder preservative)
- Overall package height 1.4mm to 1.2mm
- 150um min bump itch & 0.4mm min. ball pitch
- 110µm minimum bump pitch
- Stacked die hybrid with flip chip on the bottom and wire bonding on the top die
- Dispensed underfill (DUF)
- Molded underfill (MUF)
- Available in Land Grid Array (LGA) format
- Available with multiple components & chip to form a system-in-package version (FCFBGA-SIP)
- Packing : JEDEC tray
- Package configuration : JEDEC standards

## Applications

- Handheld or portable electronic devices
- Wearable devices

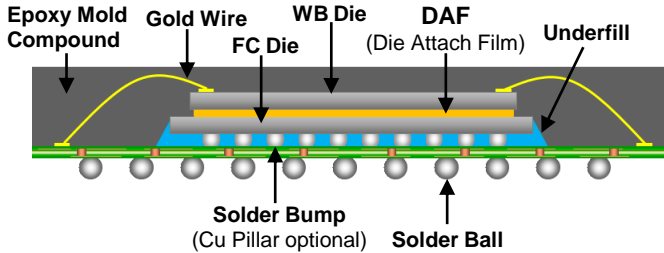
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# Hybrid fc-FBGA

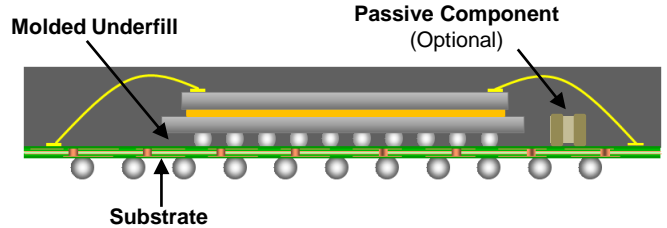
## Over Mold / MUF



### Hybrid FCFBGA with Over mold



### Hybrid FCFBGA with MUF



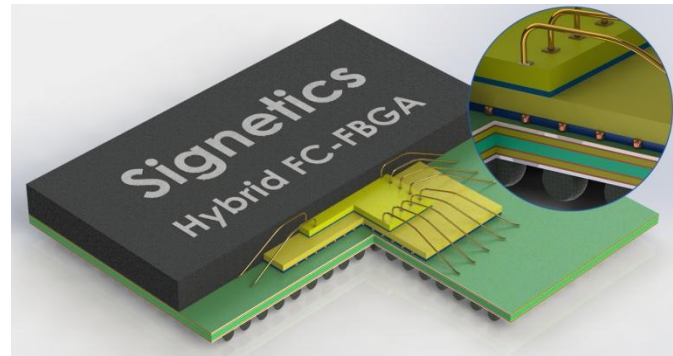
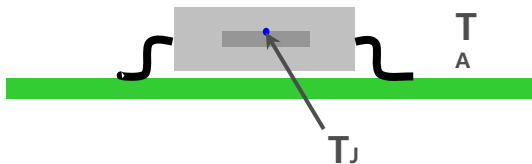
### Reliability

<b>MSL Level</b>	JEDEC Level 3
<b>Temp Cycling</b>	-55°C/125°C, 1000 cycles
<b>Unbiased HAST</b>	130°C/85% RH, 2 atm, 96hrs
<b>High Temp Storage</b>	150°C, 1000hrs

### Thermal Data

BODY SIZE	Ball Count	Theta JA (°c/w)
Hybrid FCFBGA 17X17	513B	30.63

- JEDEC STD 2S2P PCB, Still air

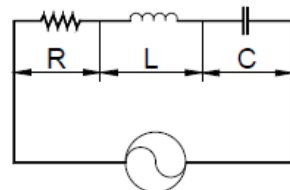


### Electrical Data

- 8X8mm Body, 121B
- Simulation Frequency : 100MHz

<b>Resistance (mΩ)</b>	30~90
<b>Inductance (nH)</b>	0.5~2.0
<b>Capacitance (pF)</b>	0.3~0.8

- Results dependent on body size, die size, and Substrate design etc..



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