

Fine Pitch Cu Pillar with Bond on Lead (BOL) Assembly Challenges for Low Cost and High Performance Flip Chip Package

N I a , a a a , *K O K
V I
* I K a .
a . a a a .

Abstract

() a a
w f a a w- f a a .
H / (I/O) a f
a a a f a a
a w a - - a (O)
, w f a f a
a a . a a
a a a f w () a a a
f a a a a a . a
a () -
a a a a a a a
f a a a . O a ,
a

package type	body size (mm)	die size (mm)	Si node	bump pitch (um)	# traces between the bumps	bump
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a , a , , wa f f
a . 3 w a a f w
f a a a f a a . a
a a a f w f a a a ,
f a a f .

a l a f DO

(I) -
a a , / a a (U), a
a a w a a a f
a a f a a w f a
a a f I/O w w
a a a. l w f
a a a w O a a
f a . O a a a
a w a a
a - ff f f f w f a a
f f (U) a .

2 w w/ a (f), a
w w/ a ()

l a , a
a w/ O a

Assembly Process

a a a
f a f w a
f f a ff a U
f a . a f a a K
a . I a a w a a
(55 a w 30 a) wa w a
a f a a a . H a a a
a a a ; K a (w
) a a . f a K
a a wa w a a a
a a U . 2
w w w w a a w
a a .
a a a a a
f f / a a . a , a w
a a a 30 a w f
f () wa w a a a a
a w .

a a , f a a ,
f a , f , a a a a ,

f w a a a wa a
 a a . I a a f wa
 f f a a . a f "a
 "U" a wa a f ,
 f f .
 a a a a w
 a a f wa a
 a w a 6 w. a
 a w a f a fa
 a a (I) wa DO . a a
 wa f w I a a a
 a . w f f f f
 (O) f a a w a a
 a a a a a a .
 I a a a a w
 a a a a a a w
 w w a a a , -
 , w a a ,
 a f a wa
 a a a
 . a w
 w a 4.

fa a w
a a a

$\frac{1}{2} \frac{1}{2} \frac{1}{2}$, f w
 $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ a a
a a $\frac{1}{2} \frac{1}{2} \frac{1}{2}$, $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ a
a f a $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ a .

Acknowledgments

a $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ w a &D a f $\frac{1}{2} \frac{1}{2} \frac{1}{2}$
 $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ K $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ a f $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ a
a $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ wa $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ a a a $\frac{1}{2} \frac{1}{2} \frac{1}{2}$
 $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ a a a a a a a a .

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