High Reliability WLP Technology

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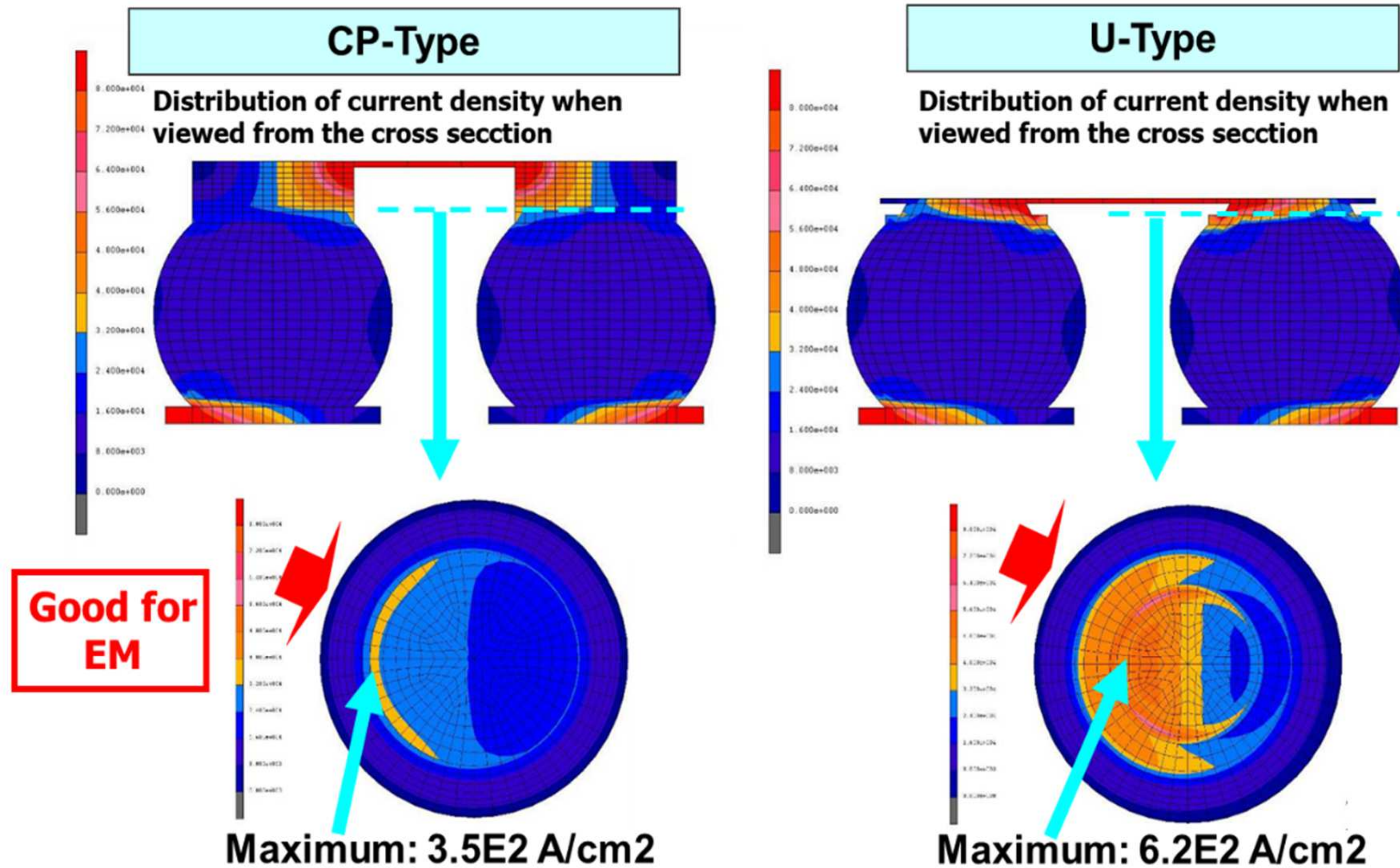
Current density simulation



Current density in the solder interface of CP-Type is 56% of U-Type

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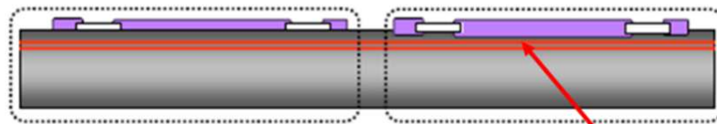
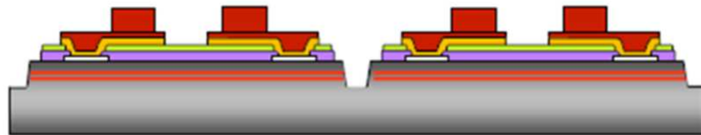
Cross-sectional view when Low-k layer is grooved

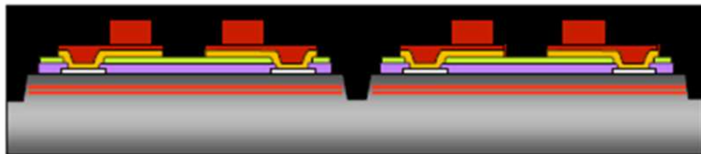


Incoming

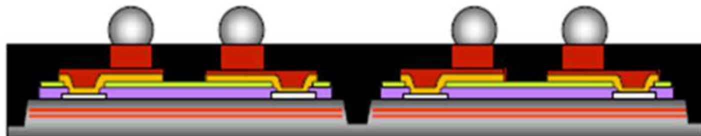
Low-k layer



Laser grooving



Encapsulation Resin
(The side of Low-K is also covered with resin and is highly reliable.)



Solder Ball Attach

Dicing

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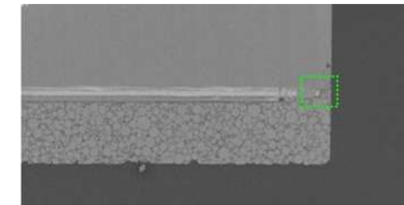
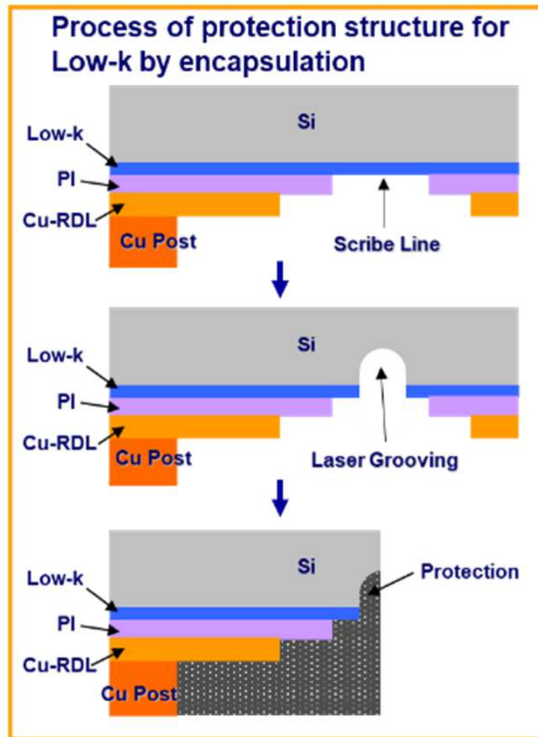
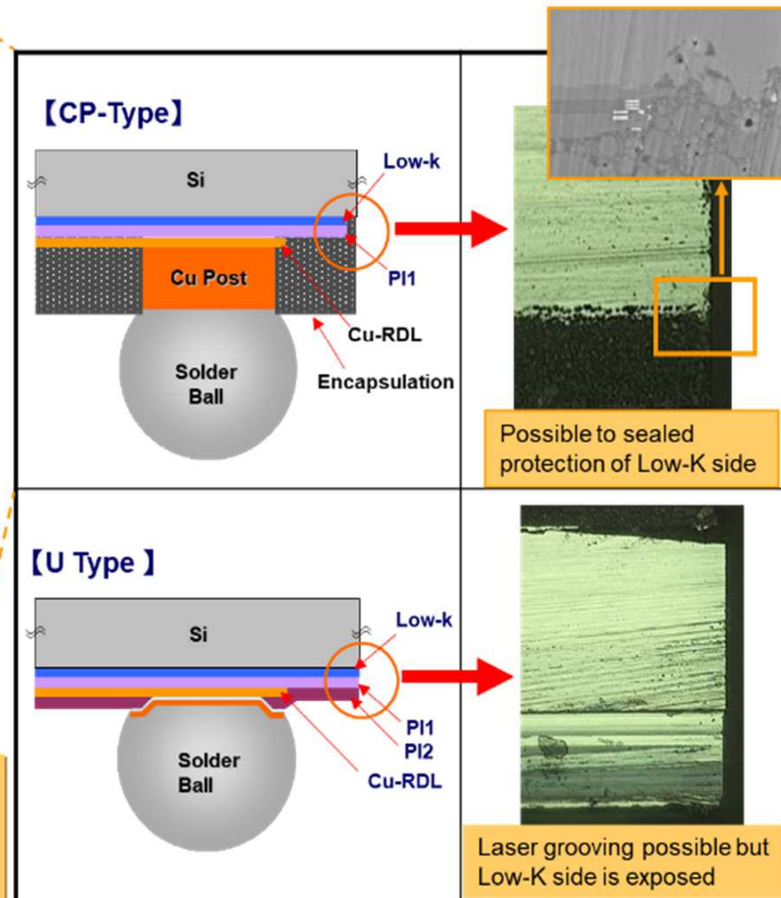
Cross-sectional view
when Low-k layer is grooved







CP-Type is prevent peeling of the Low-k layer by sealing the side walls of fragile Low-k layer by encapsulation.

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Reliability results

Test Items	Test condition	N	Test timing	Result Lot 1	Judgment
Reflow	85℃/85% 168hr⇒ >255℃ 30sec. 10X (JEDEC J-STD-020D Moisture Level1)	45	Initial	0/45	Pass
			After reflow	0/45	
PCT	Pre-condition ⇒ 121℃ 100% 168hr	50	Initial	0/50	Pass
			168hr	0/50	
HTS	Pre-condition ⇒ 150℃、500hr、1000hr	50	Initial	0/50	Pass
			500hr	0/50	
			1000hr	0/50	
TCT	Pre-condition ⇒ -65℃～150℃、500cycle、1000cycle	50	Initial	0/50	Pass
			500cycle	0/50	
			1000cycle	0/50	
THB	Pre-condition ⇒ 85℃ 85%RH、3.5V 168hr,500hr,1000hr	22	Initial	0/22	Pass
			168hr	0/22	
			500hr	0/22	
			1000hr	0/22	

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