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FROM OUTSIDERS

Dexerials

20 November 2012

TECHNICAL REPORT

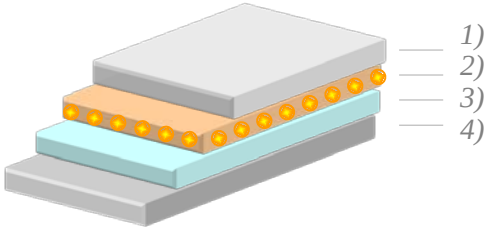
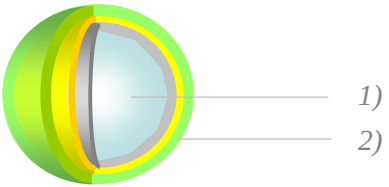
CP6920F

Anisotropic Conductive Film for Chip on Glass

Products Development Department

Advanced Material Division

Specifications

Items		CP6920F	Remarks
Curing system		Epoxy-Anion	
Structure and thickness	1) Cover film / color	25μm / transparent	
	2) ACF-layer	10μm	
	3) NCF-layer	10μm	
	4) Base film / color	38μm / white	
Conductive particles	1) Material	Au/Ni plated resin	
	2) Insulator coated	Yes	
	Particle diameter	4μm	
Minimum overlap area of conductors		1800μm^2	*1
Minimum bump space		15μm	*Space between bumps.*
Minimum conductor space		12μm	*Space between neighboring circuits.*

**1: The contact area needs to trap at least three particles (average -4.5δ) and where the faced conductor overlaps.*

Bonding conditions and Properties

Bonding conditions *1

items		CP6920F	Remarks
ACF laminating conditions	Temperature	60～80℃	*2
	Pressure	0.3～1.0MPa	*3
	Time	1～2sec	*4
Main bonding conditions	Temperature	190℃～	*2
	Pressure	60～80MPa	*5
	Time	5sec	*4

*1: Bonding condition may differ depending on chip size and metal pattern. We recommend this as a starting point to determine your own optimized conditions.
*2: Temperature of ACF lamination and main bonding: It is not equipment temperature, but actual temperature of ACF.
*3: Pressure of ACF lamination: It is calculated based on the area of ACF lamination.
*4: Time of ACF lamination and main bonding: Time from the start of bonding to the point where the temperature reaches the target.
*5: The pressure is calculated based on the total area of bumps.

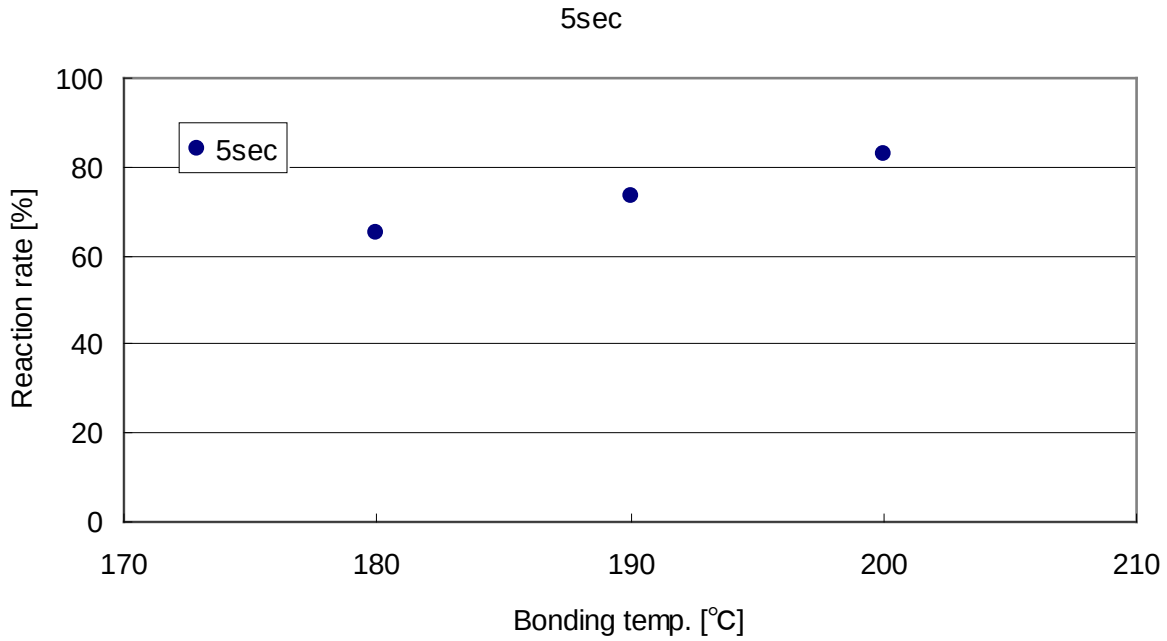
Properties of cured ACF

items		CP6920F	Remarks
Elastic modulus	at 30℃	2.6GPa	DMA
Glass transition temperature (Tg)		146℃	DMA, tanδ peak

Note: This report has been prepared on the basis of our reliable tests, however is not intended to guarantee the performance described hereunder.

Reaction rate

IC	:	1.8mm × 20mm, t= 0.5mm
Pattern ITO	:	ITO=10Ω/□, t= 0.7mm glass
Bonding Condition	:	180℃-200℃,80MPa,5sec
Measurement	:	FT-IR Method



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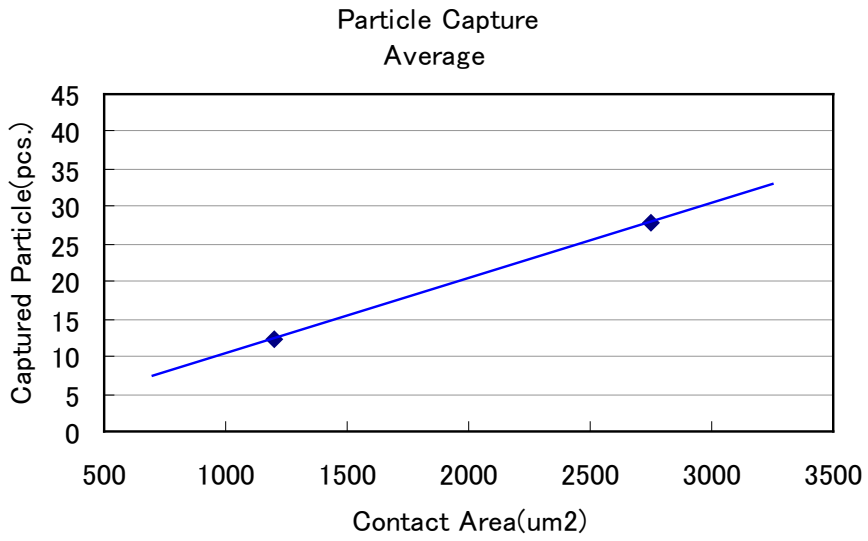
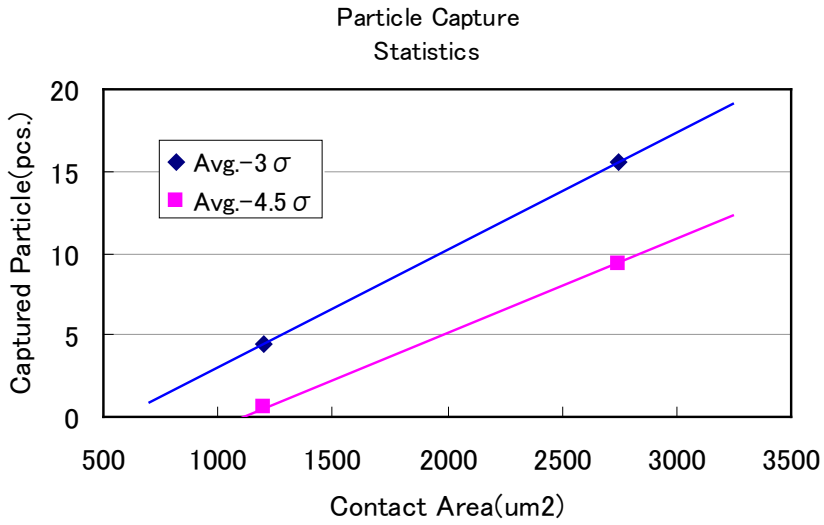
Particle capture

IC : 1.8mm × 20mm, t= 0.5mm, Au-plated bump
Pattern ITO : ITO=10Ω/□, t=0.7mm glass





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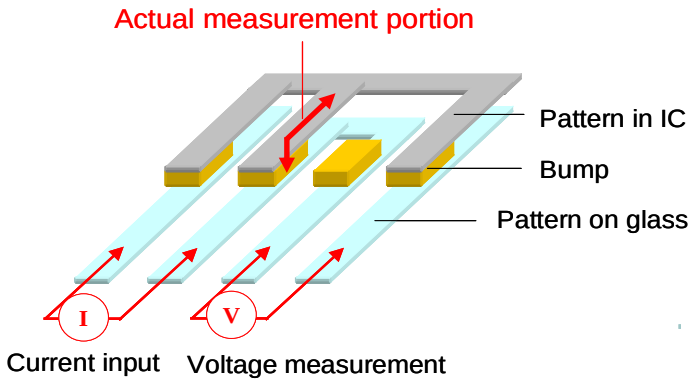
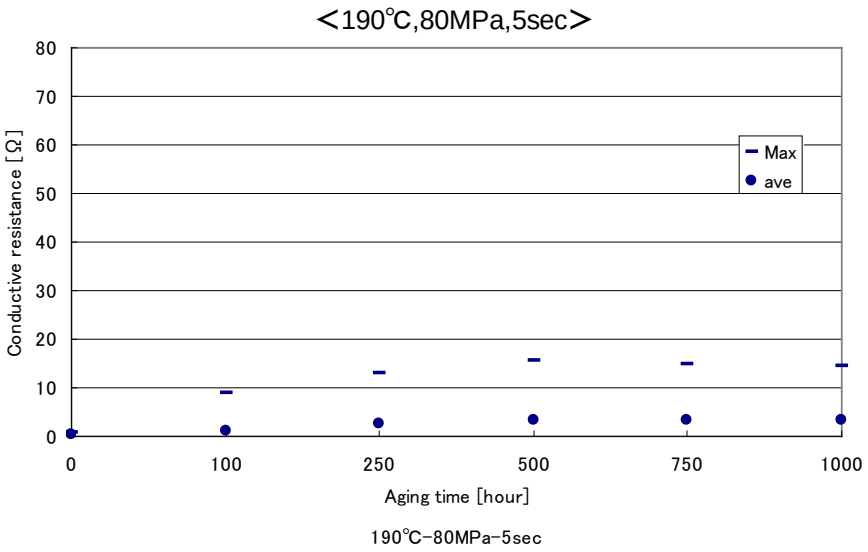
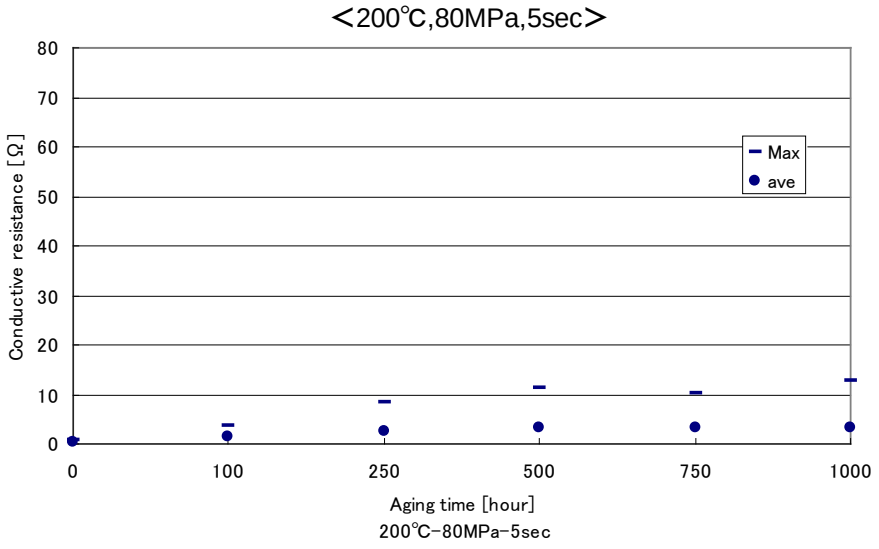
Conductive resistance

IC : 1.8mm × 20mm, t= 0.5mm
Bump 30μm× 85μm, Au-plated bump
Pattern ITO : ITO=10Ω/□, t=0.7mm glass
Bonding Condition : 190℃,200℃-80MPa-5sec
Aging Condition : 85℃85%RH







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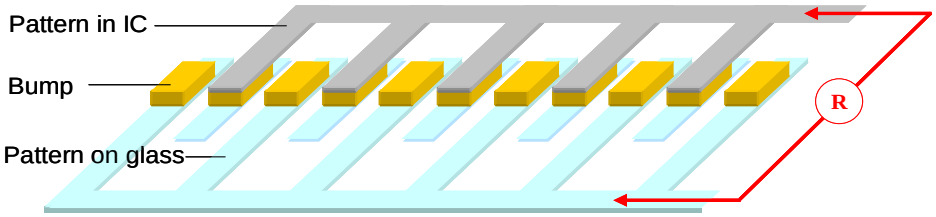
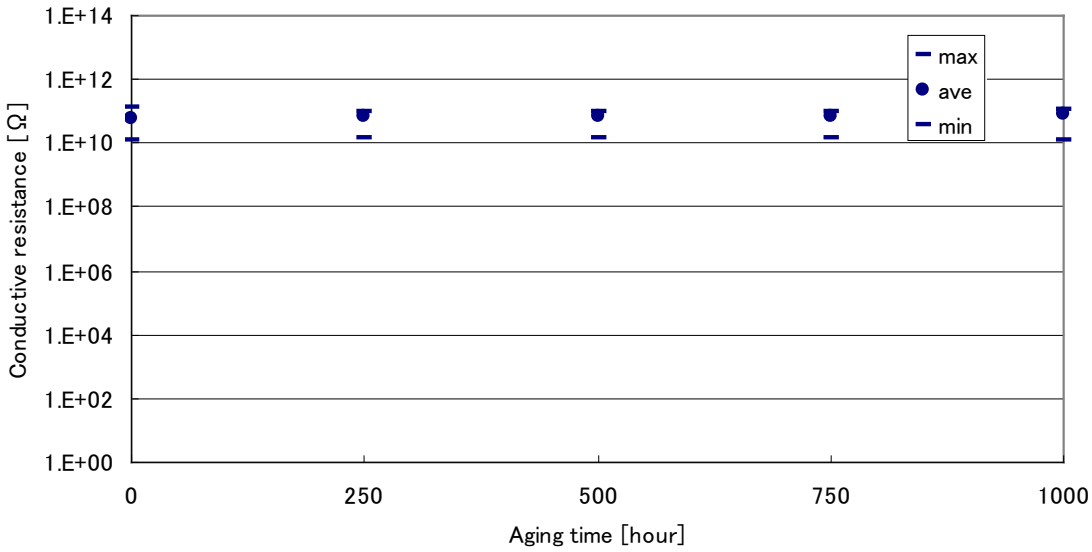
Insulation resistance

IC : 1.5mm×13mm, t= 0.5mm, Au-plated bump
Pattern ITO : ITO=10Ω/□, t=0.7mm glass
Bonding Condition : 190℃-80MPa-5sec
Aging Condition : 85℃85%RH





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