TO BE KEPT SECRETS FROM OUTSIDERS

10 December 2012

TECHNICAL REPORT

CP6920F3

Anisotropic Conductive Film for Chip on Glass

Products Development Department

Advanced Material Division

Note on the characteristic data given - Data on the characteristics of the products described in this document based on the results of evaluations carried out by the company. This does not guarantee that the characteristics of the product conform with your usage environment. Before use, review the usage conditions based on evaluation data obtained from the equipment and substrates actually used.

Specifications

Items		CP6920F3	*Remarks*
Curing system		Epoxy-Anion	
Structure and thickness	1) Cover film / color	25μm / transparent	1) 2) 3) 4)
	2) ACF-layer	10μm	
	3) NCF-layer	10μm	
	4) Base film / color	38μm / white	
Conductive particles	1) Material	Au/Ni plated resin	1) 2)
	2) Insulator coated	Yes	
	Particle diameter	3μm	
Minimum overlap area of conductors		1300μm^2	**1*
Minimum conductor space		12μm	*Space between neighboring circuits.*
Minimum bump space		10μm	*Space between bumps.*

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

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

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Bonding conditions and Properties

Bonding conditions *1

items		CP6920F3	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		CP6920F3	Remarks
Elastic modulus	at 30℃	2.6GPa	*DMA*
Glass transition temperature (Tg)		146℃	*DMA, tanδ peak*

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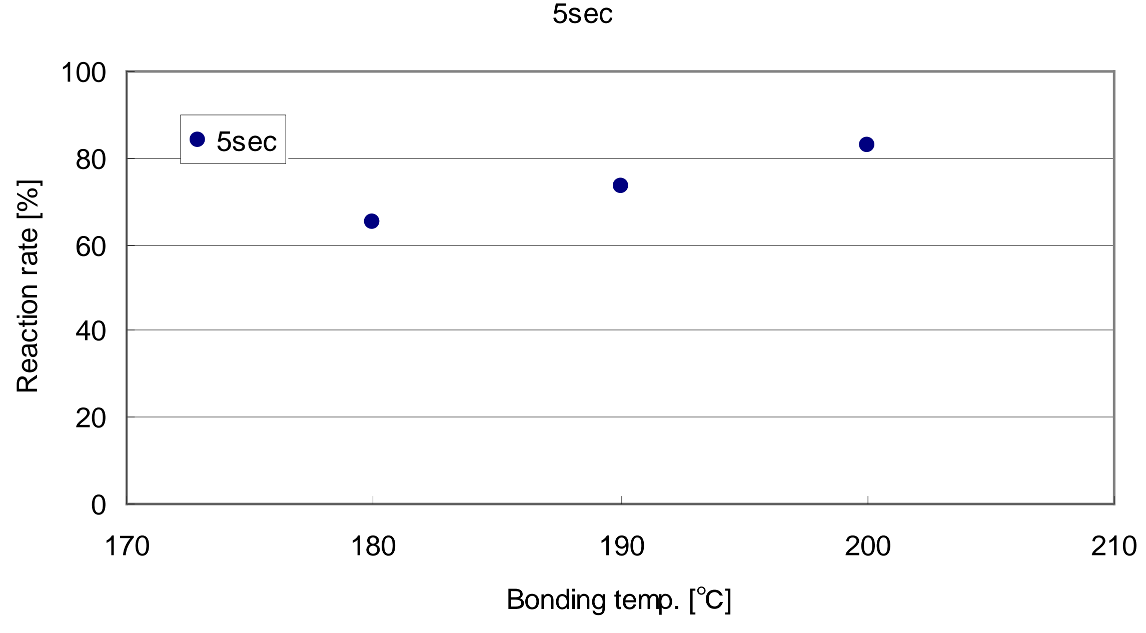
Reaction rate

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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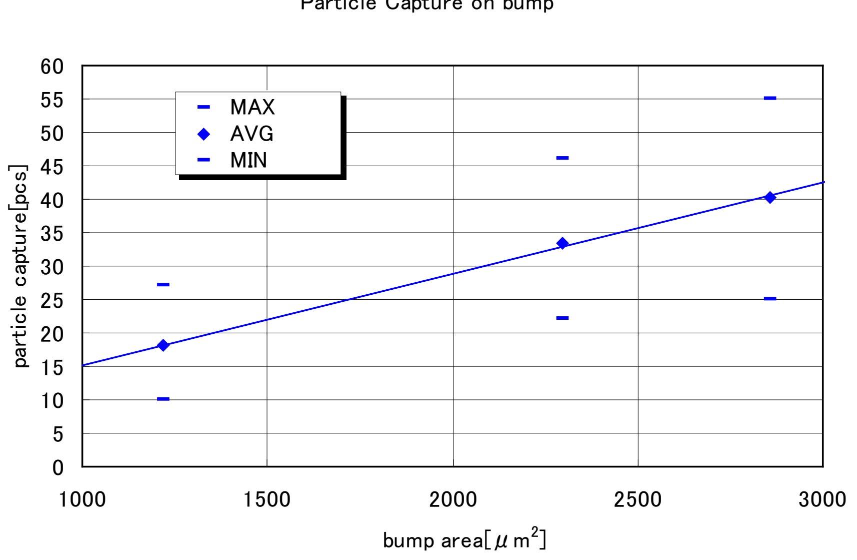
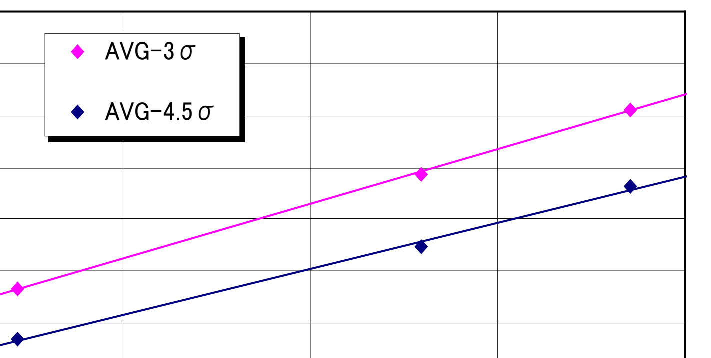
Particle capture

IC : 1.8mm×20mm, t= 0.5mm, Au-plated bump

Pattern ITO : ITO=10Ω/□, t=0.7mm glass





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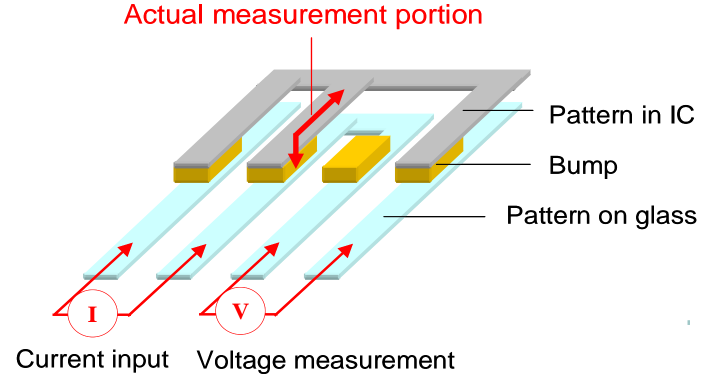
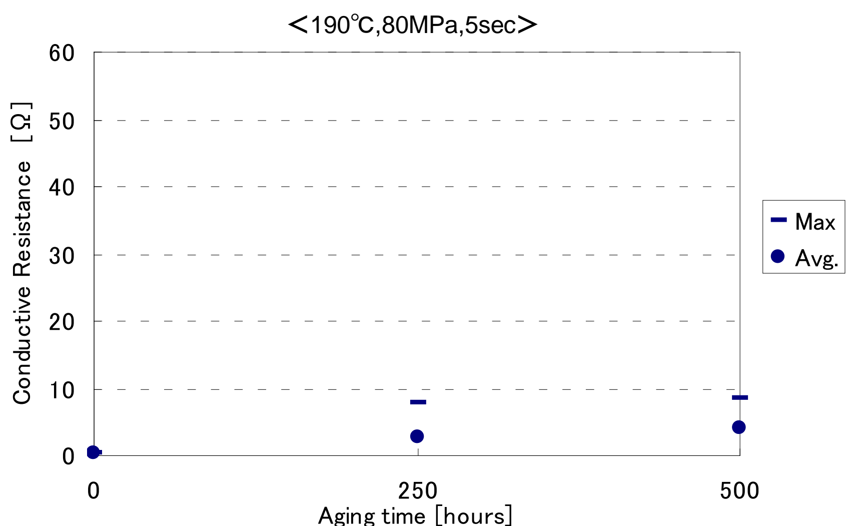
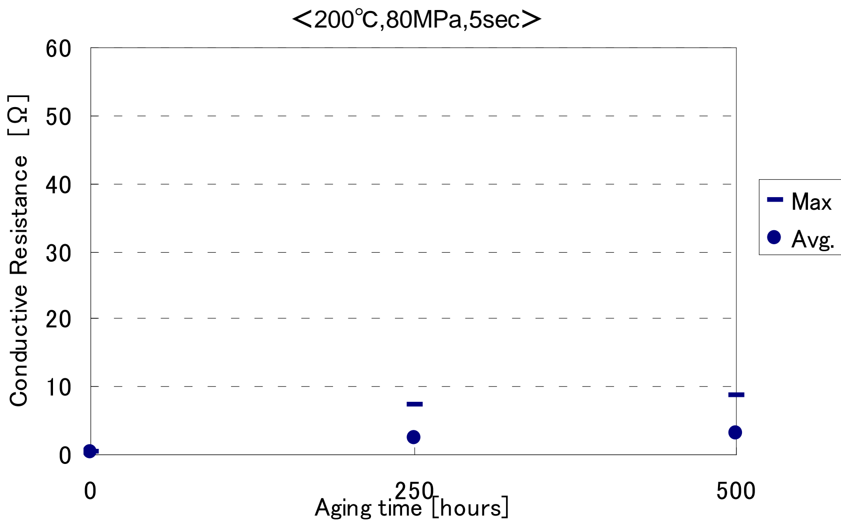
Conductive resistance

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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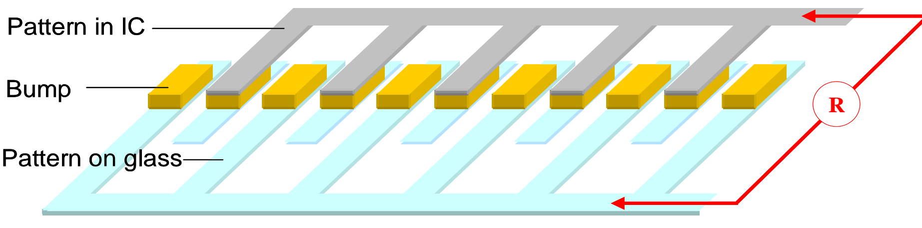
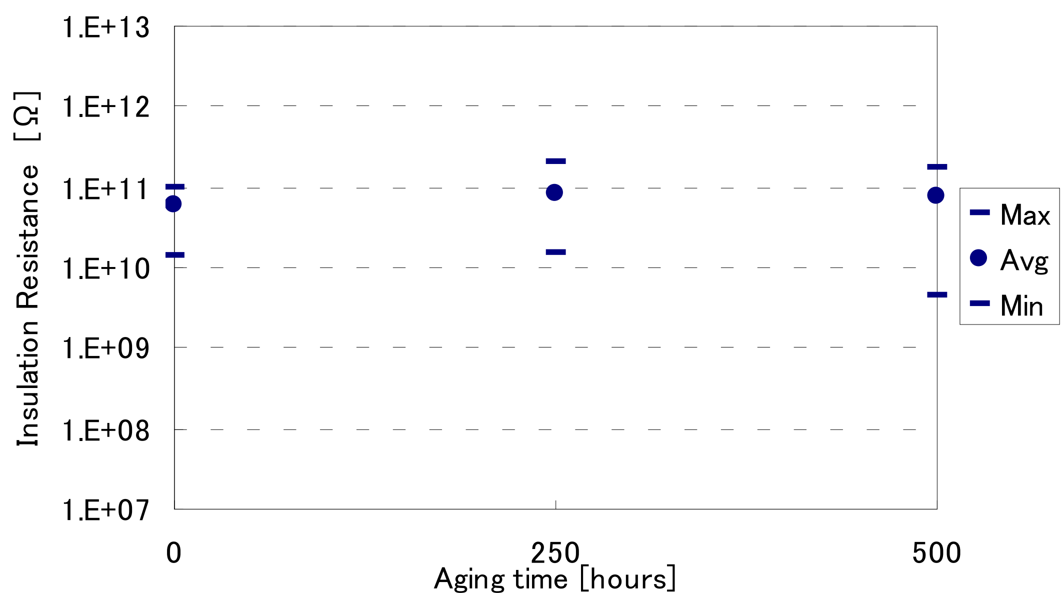
Insulation resistance

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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