

# Particle-arrayed Anisotropic Conductive Film (ACF) ArrayFIX®

Film-type adhesive with uniformly dispersed particles that provide electrical interconnection through the film thickness

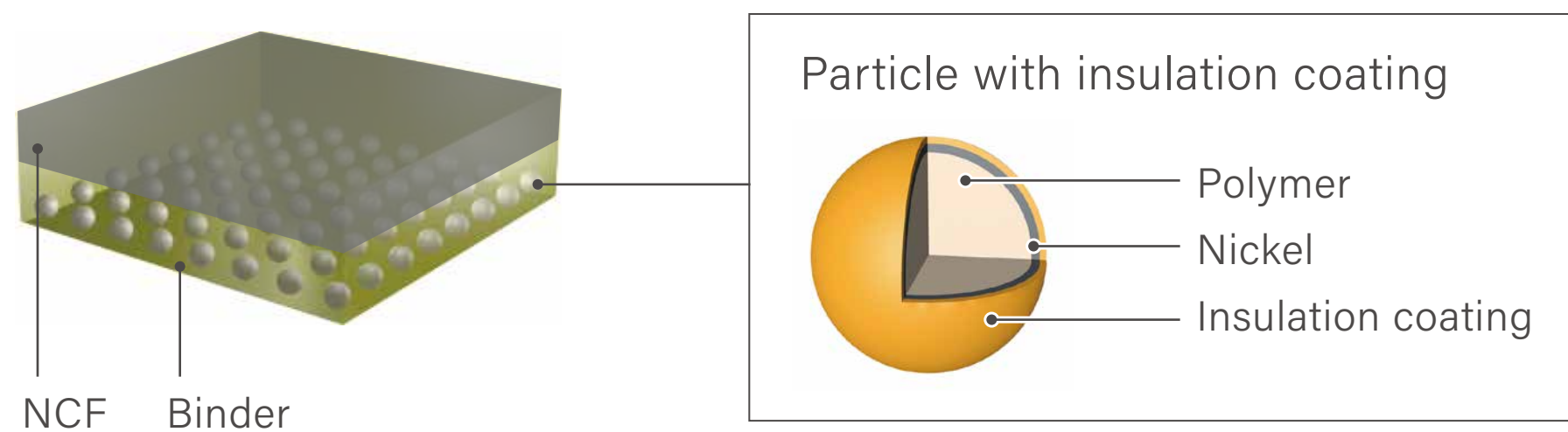
Product Name      PAF300 series      PAF400 series      PAF700 series

## Features



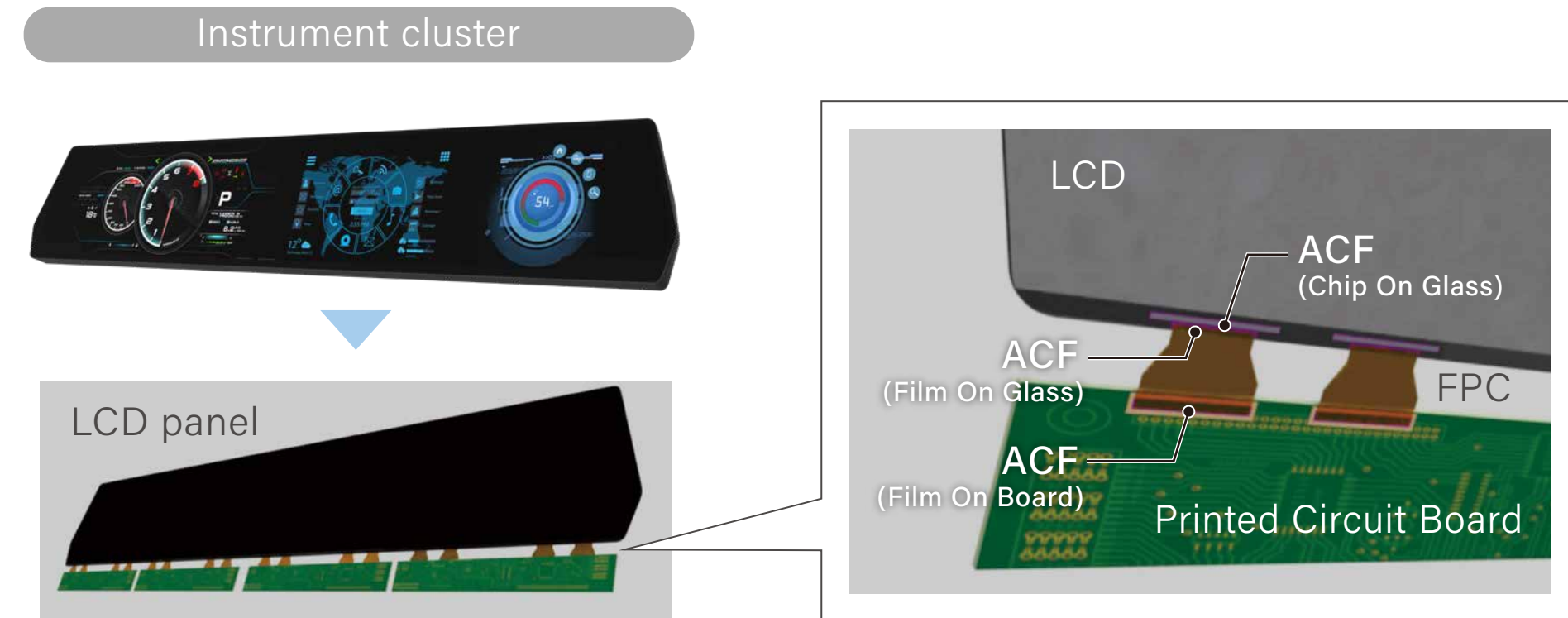
- Conductive particles are arrayed at targeted positions and are immobilized during bonding to obtain stable connectivity with sufficient number of particles.
- Reduced risk of short-circuit for fine-pitch connections due to immobilization and decrease in number of conductive particles
- Provides minimum connection area of 1,000  $\mu\text{m}^2$  and minimum space of 5Mm for interconnection of COF/COG/COP and a panel
- Product width of 0.6 mm is available

## Structure



## Applications

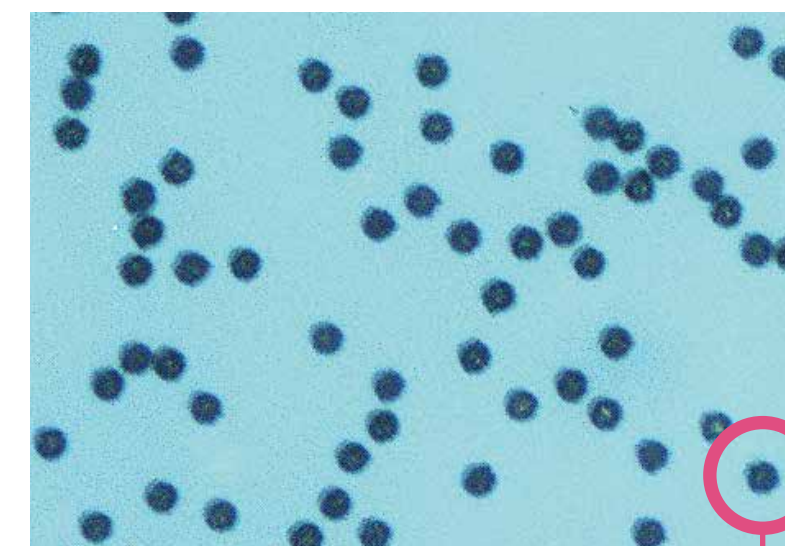
Suitable for flat-panel displays, various types of sensors, sensor boards, organic EL lighting devices



## Dispersion of conductive particles

### Dexerials' conventional ACF

Particle diameter:  $\phi 3.2 \mu\text{m}$   
Area density of particles: 12 kpcs/ $\text{mm}^2$



### Particle-arrayed type ACF

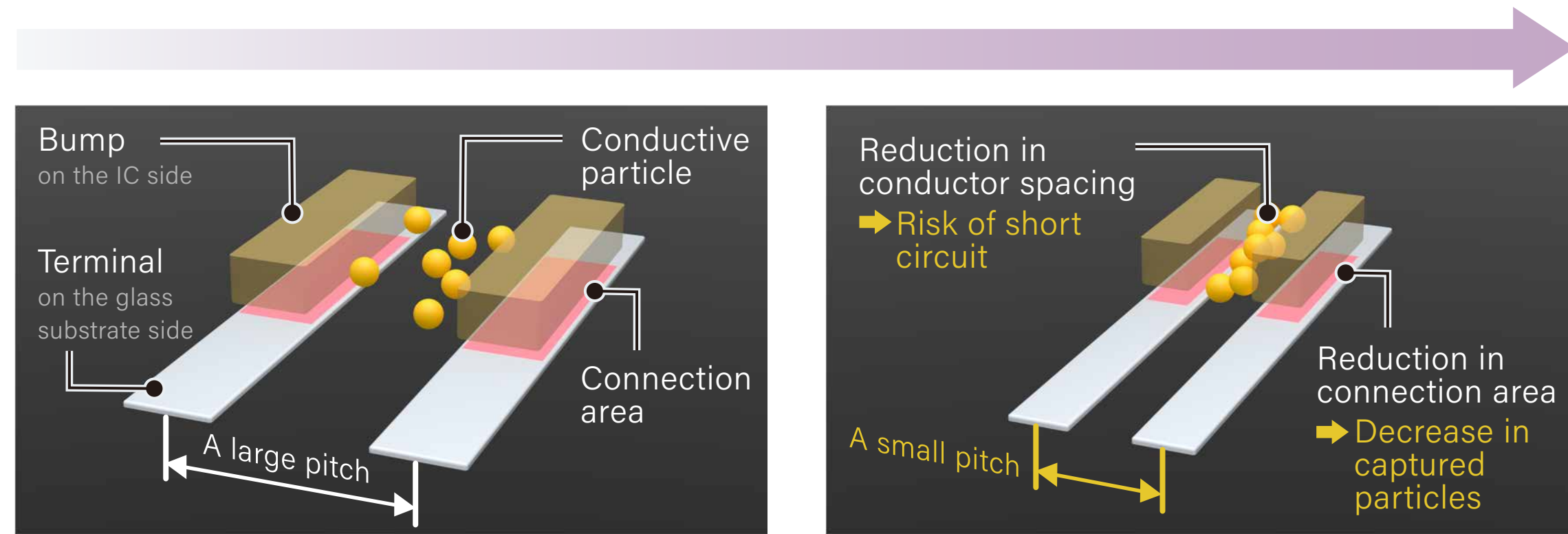
Particle diameter:  $\phi 3.2 \mu\text{m}$   
Area density of particles: 12 kpcs/ $\text{mm}^2$



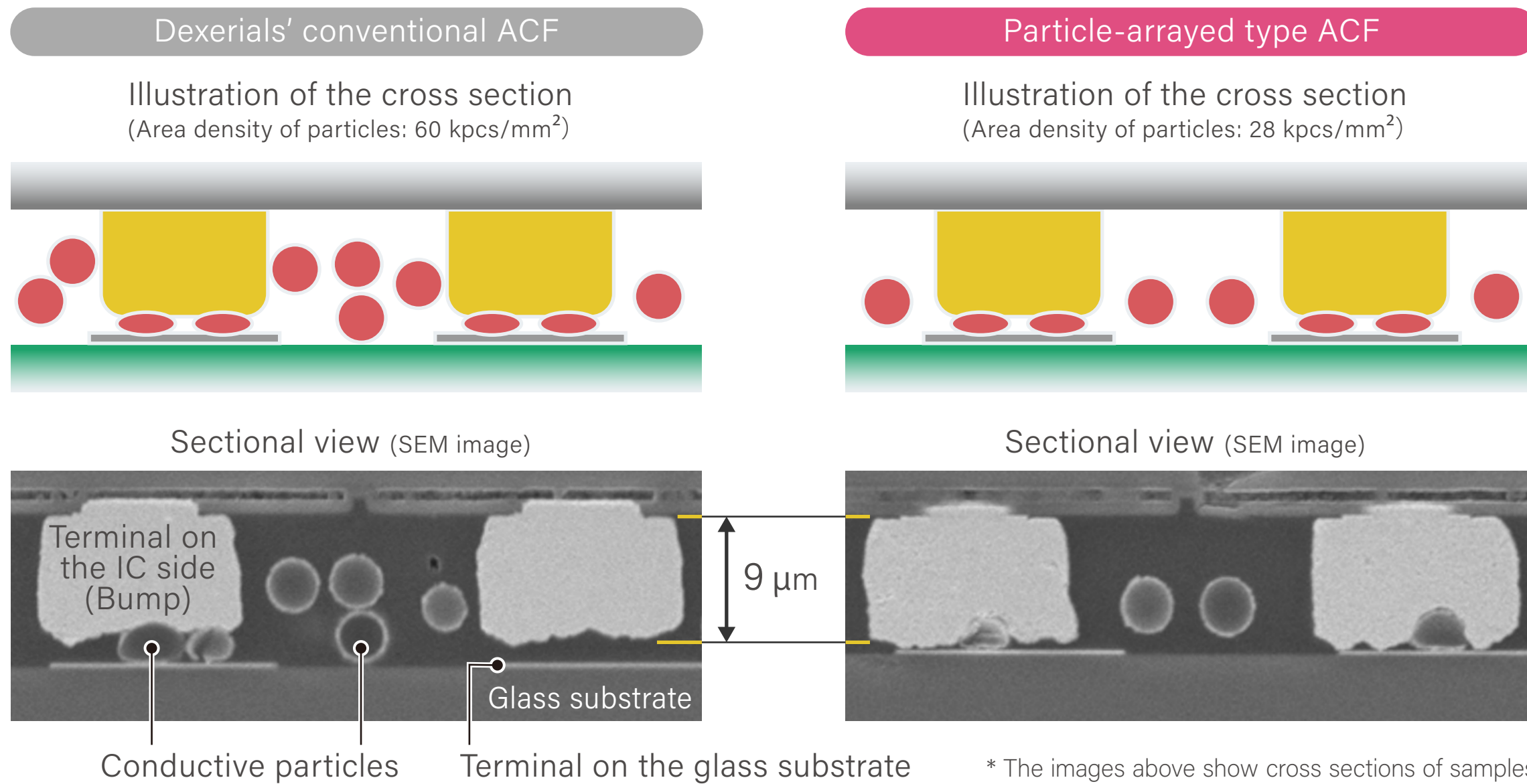
Conductive particles

## Fine pitch

As demand for high-resolution multi-functional displays increases, so has the need for finer wire pitch



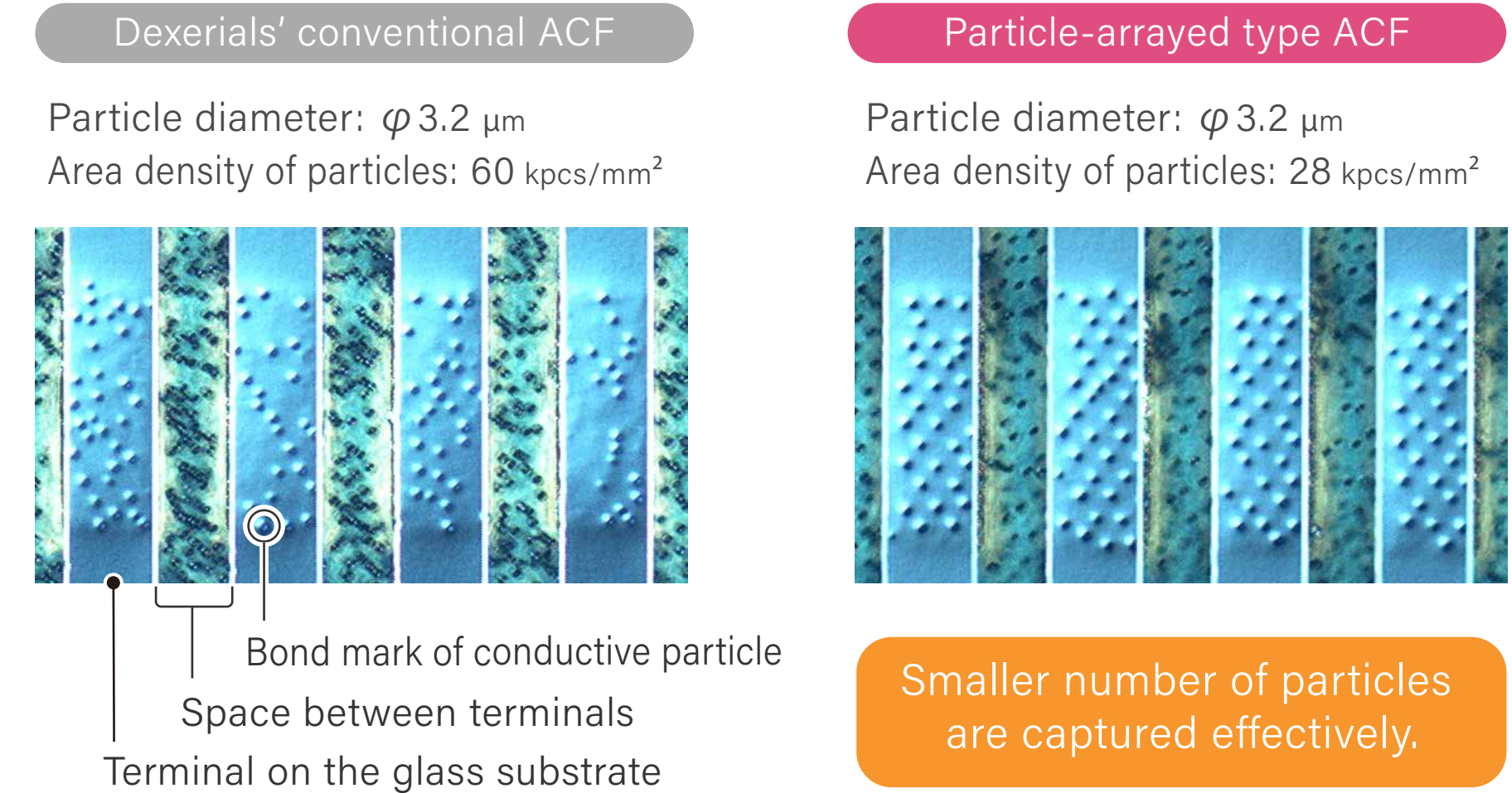
## Particles between terminals (bumps) [comparison for COG connection]



\* The images above show cross sections of samples which were cut to observe particles between terminals.

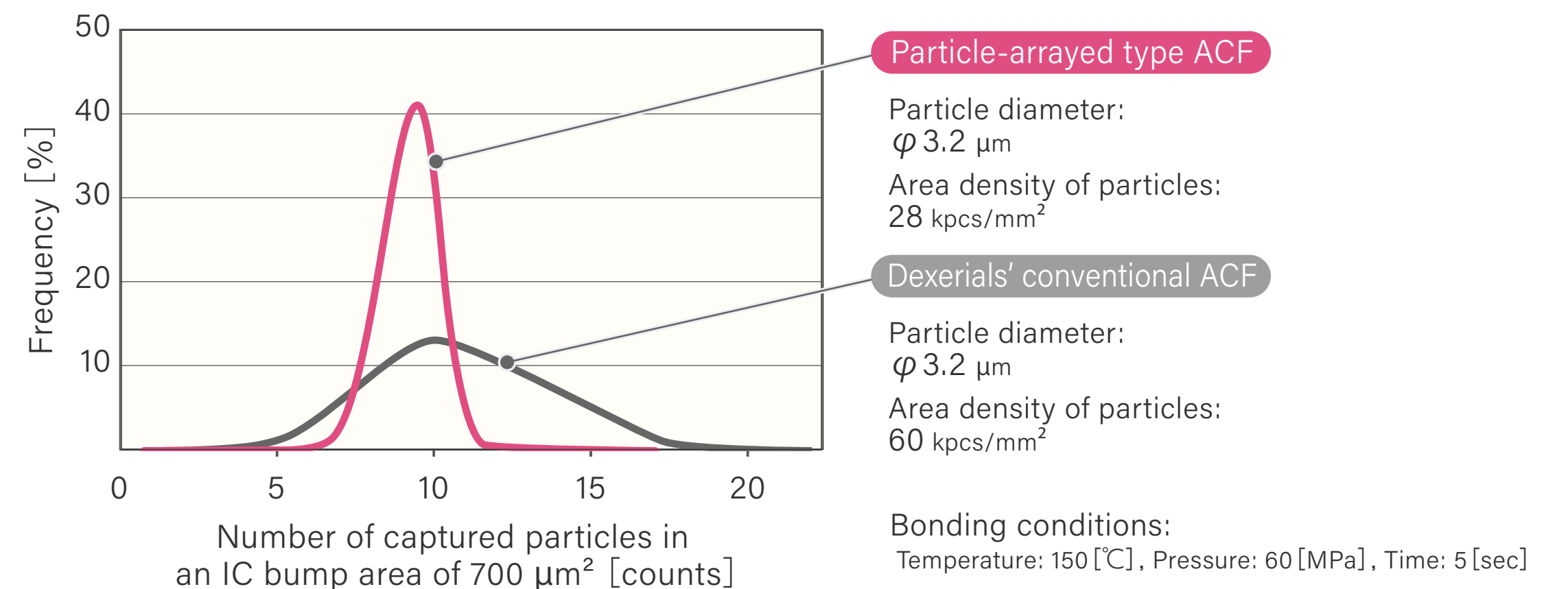
## Captured particles

Automated Optical Inspection (AOI) Results



\* The images above are obtained by observing terminal areas from the backside of a glass substrate (opposite to the circuit side) in order to see captured particles.

Difference in the number of captured particles between Dexerials' conventional ACF and particle-arrayed type ACF



## Specifications

Item series	PAF300 series	PAF400 series	PAF700 series
Panel	LCD	OLED	LCD/OLED
Connection Type	COG	COG/COP	FOG/FOP
Connection material	IC	IC	FPC
Minimum space *1	5 μm	8 μm	5 μm
Minimum connection area *2	400 μm <sup>2</sup>	720 μm <sup>2</sup>	1000 μm <sup>2</sup>
Thickness	16 μm	10 μm	10 μm
Particle Density	20 Kpcs/mm <sup>2</sup>	16 Kpcs/mm <sup>2</sup>	12 Kpcs/mm <sup>2</sup>
Particle Type	Ni plated on a polymer core particle	Ni plated on a polymer core particle	Ni plated on a polymer core particle
Particle Diameter	3.2 μm	3.0 μm	3.2 μm
Insulation coating	Yes	Yes	Yes
Main bonding conditions *3	Temp.	130 to 160	160 to 180
	Time	5	5
	Pressure	40 - 80 MPa	60 - 90 MPa *4

\*1: Minimum space: Space between adjacent circuits.

\*2: Please contact us for information on  $\sigma$  value control of the minimum connective area for each product individually.

\*3: Pressure of main bonding: The pressure for COG bonding is provided for the total bump area. The pressure for FOG, FOB, and FOF bonding is provided for the bonded area. These values vary depending on customers' panels.

\*4: Recommended pressure at COG mounting. Please contact us for information on the pressure at COP mounting.

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The document was created in September 2021.