

[Processes Available at Japan Display Ishikawa Plant]

Process Category	Available Processes / Treatments		Process Method / Equipment	Remarks (Dimensions, Accuracy, Materials, etc.)	Film Type	Item	Thickness (nm)	Minimum Line Width / Spacing (μm)	Resistivity (μΩ·cm)	Remarks	
■ Substrate Processing	Cleaning		UV/ Chemical / High-Pressure / Ultrasonic / DI Water Cleaning								
	Film Deposition	Metal Film Formation	Sputtering	Ti, Al, MoW, Mo, ITO Please consult us if materials other than those listed are required	Ti	Wiring / Electrode	50~150	2.0		Minimum line width / spacing values are based on standard film thickness	
					Al	Wiring / Electrode	50~800	2.0	<0.3Ω		
					MoW	Wiring / Electrode	50~300	3.0	<0.7Ω		
					Mo	Wiring / Electrode	5~250	2.0			
					ITO	Wiring / Electrode	15~150	2.5	<200Ω		
		Inorganic Insulating Film Formation	P-CVD	TEOS, SiNx, SiOx	SiNx	Insulating Film	100~300				
					SiOx	Insulating Film	100~400				
					TEOS	Insulating Film					
		Organic Insulating Film Formation	Slit Coater	Acrylic-Based	Positive Photoresist	Organic Insulating Film	2000~3000				
					Negative Photoresist			3000~40000			For Photo Spacer
		Functional Film Formation	P-CVD, Sputtering	LTPS, IGZO	LTPS	Functional Film				LTPS is formed by ELA after a-Si deposition	
					IGZO	Functional Film					
	Patterning Photolithography	Photoresist Coating Exposure	Slit Coater	Novolac-Based	Positive Photoresist		800~2500				
			Mask Aligner	Minimum line width: 5.0 μm / Overlay accuracy: ±2.7 μm				5.0/2.7		Line width values are for Line & Space patterns and differ from hole pattern dimensions	
					Stepper (i-line)	Minimum line width: 1.5 μm / Overlay accuracy: ±1.5 μm			1.5/1.5		
					Stepper (g/h-line)	Minimum line width: 3.0 μm / Overlay accuracy: ±1.75 μm			3.0/1.75		
			Development	Developer Processing							
				Etching	Dry Etching	Ti, Al, MoW, Mo, Si, SiNx, SiOx Photoresist	Ti	Wiring	50~150	2.0	
			Al				Wiring	50~800	2.0		Used as a Ti/Al/Ti structure
			MoW				Wiring	50~300	3.0		
			Si				Wiring / Electrode	50~1100	2.5		
			SiNx				Through-Hole Processing	100~300	2.5		
		SiOx	Through-Hole Processing				100~400	2.5			
		Wet Etching		ITO, Mo, Al	Al	Wiring / Electrode	50~800	2.00		Used as a Mo/Al/Mo structure	
					Mo	Wiring / Electrode	5~250	2.00			
					ITO	Pixel electrode	15~150	2.50			
		Resist Stripping	Stripping Solution Processing								
			High-Temperature Annealing (Baking)		Clean Hot-Air Circulating Oven	O ₂ concentration is monitored under N ₂ atmosphere					
		Post-Substrate Processing	Sealant Application		Dispensing	Seal width: approx. 0.5~2.0 mm					
	Processing	One Drop Fill		Dispensing Equipment	Overlay accuracy: ±3 μm						
Material dispensing, substrate alignment, and UV curing		Bonding Equipment UV Curing Equipment									
Thermal Curing of Sealant		Hot-Air Circulating Furnace									
Glass Thinning		Chemical Etching (Outsourced)	Thinning down to 0.2 mm per side is possible; thinner processing may be considered upon request								

(*) The above values represent standard specifications. More advanced manufacturing processes may be available depending on the application. Please consult us for details.
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