

# Glass Wafer for CSP

Alkali-free and polish-free glass wafer featuring low CTE\* is used as cover glass for WLCSP (Wafer Level Chip Size Package) of CMOS image sensors.

\*CTE: coefficient of thermal expansion

## Features

- Alkali-free and polish-free
- As-free, Sb-free characteristics are eco-friendly.
- Excellent surface quality
- Available in various thin film coatings such as AR and metal.



## Properties

Properties/Glass Code			ABC-1
Coefficient of thermal expansion	30-380°C	$\times 10^{-7}/K$	37
Density		$\times 10^3 \text{kg/m}^3$	2.52
Young's modulus		GPa	78
Poisson's ratio			0.2
Volume resistivity Log $\rho$	350°C	$\Omega \cdot \text{cm}$	13.0
Dielectric constant	1MHz, RT		5.6
$\tan \delta$	1MHz, RT		0.001
Refractive index( $n_d$ )	587.6nm	%	1.53
Light transmittance	$\lambda=550\text{nm}$	%	92

## Configuration Image of Smartphone Camera

