

# $\beta$ -Ga<sub>2</sub>O<sub>3</sub> epi-wafer for developing planar SBD

## Epi-layer

Items	Specifications
Dopant	Si+Cl <sup>*1</sup> (n-type)
Doping concentration	The mid to late order of 10 <sup>15</sup> cm <sup>-3</sup>
Thickness	15 μm

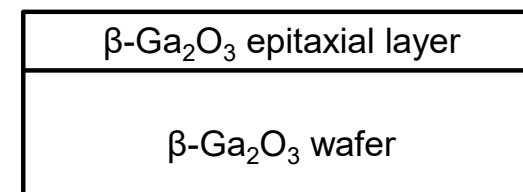
\*1: Unintentionally-doped

## Wafer

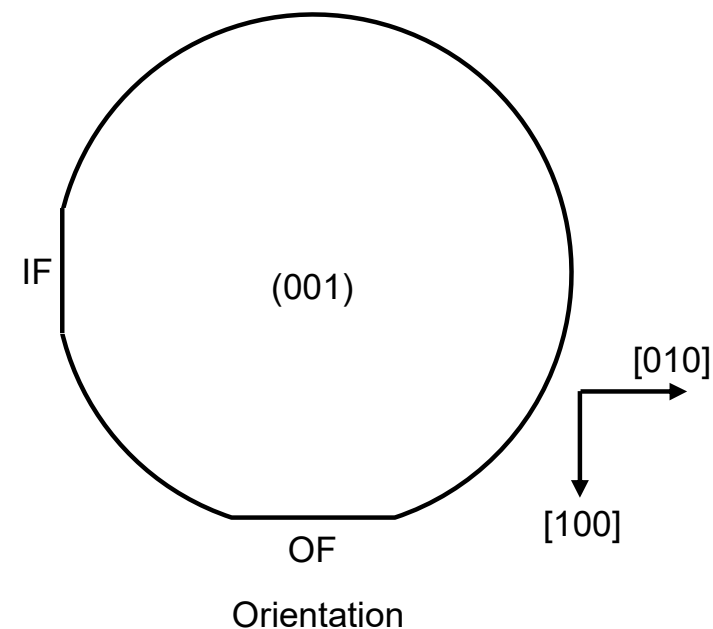
Items	Specifications
Dopant	Sn (n-type)
Resistivity	0.007–0.042 Ω·cm
Orientation	(001)
Size	2 inch, 100 mm
Backside finish	CMP
Thickness	650 μm
XRD FWHM	≤50 arcsec

### Remarks

- 1 There are cases in which the other side of OF is chipped (a maximum of around IF width).
- 2 These products must be used for research and development purposes only.
- 3 The substrates must not be used as a seed crystal.
- 4 The specifications are subject to change without notice.

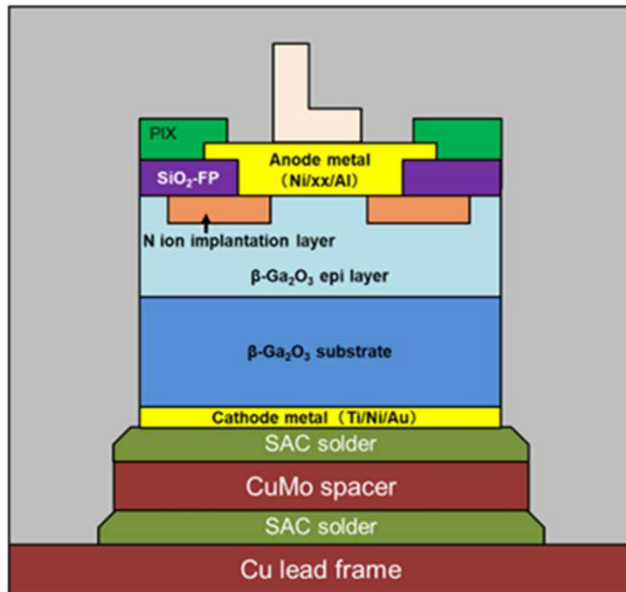


Cross section of  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> epitaxial wafer



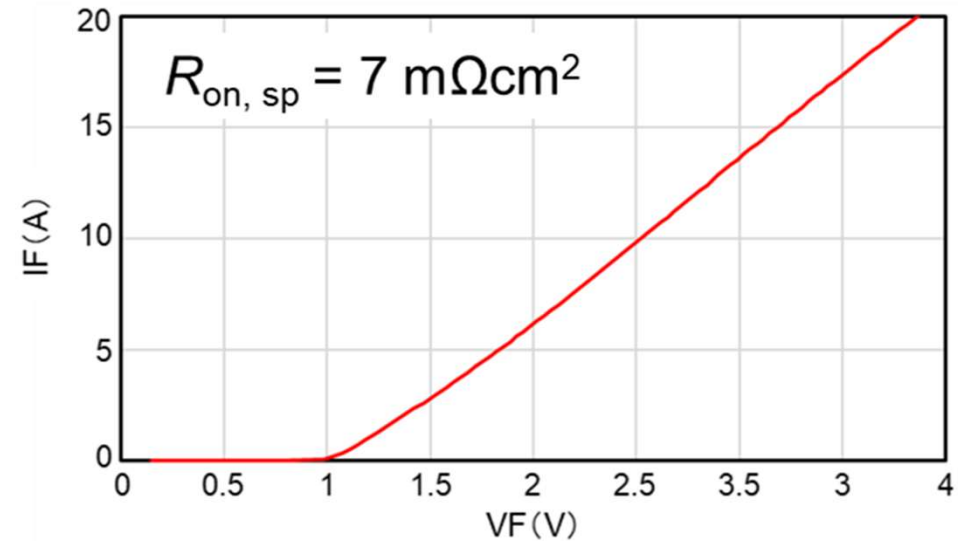
# Example of SBD characteristics using the epi-wafer for developing planar SBD

Novel Crystal Technology, Inc.

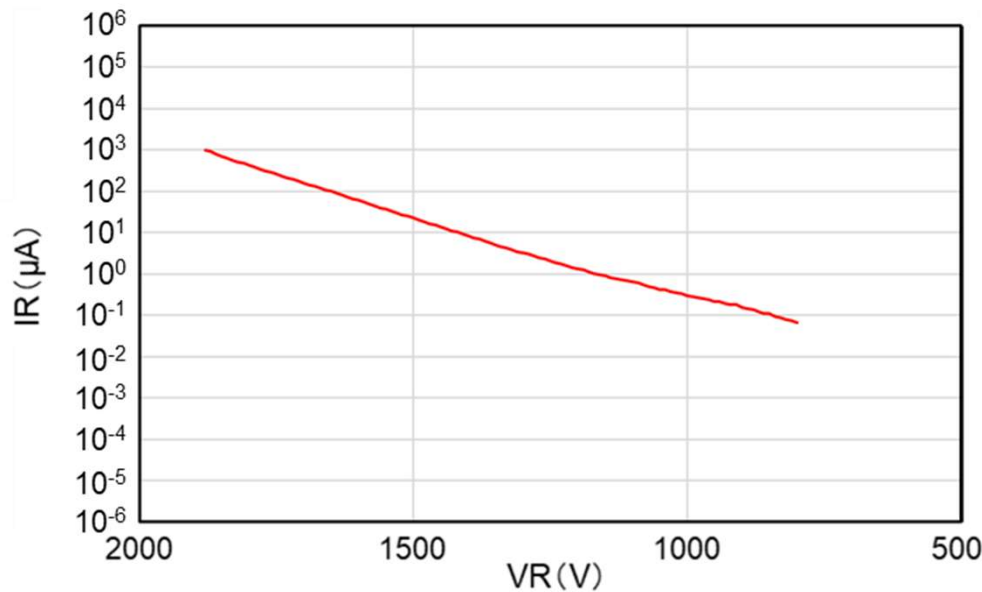


Schematic cross-section

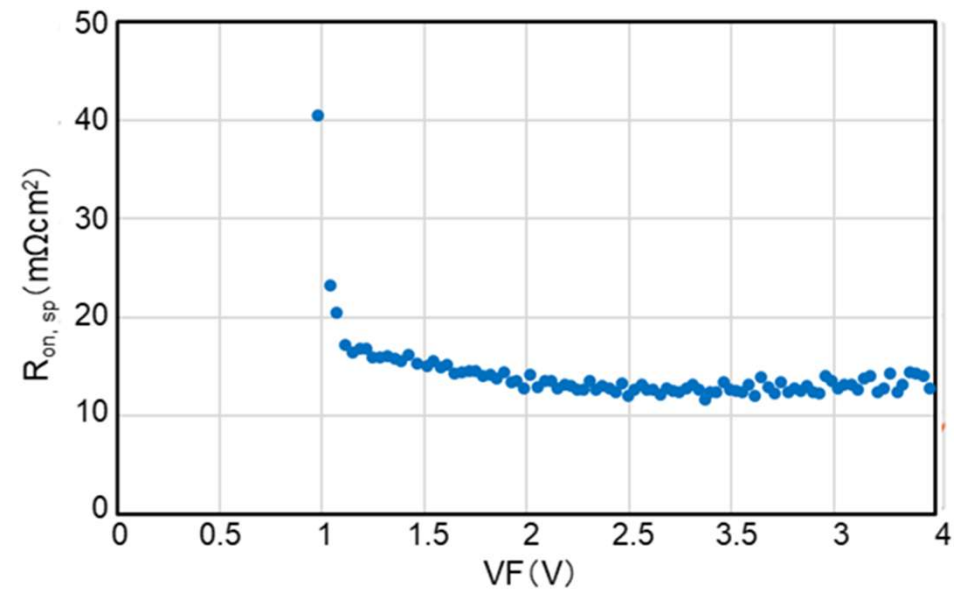
Anode electrode size:  $2.4 \times 2.4 \text{ mm}^2$



Forward characteristics



Reverse characteristics



$R_{on, sp}$  dependence on  $V_F$