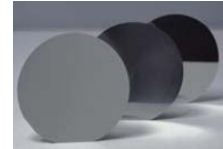




## Silicon Crystal & Compound Semiconductor

### Single Crystal Germanium Wafer

**Single Crystal Germanium Wafer**, grown by Vertical Gradient Freeze (VGF) or Czochralski (CZ) method, has doubled the average optical-electric power transmission ability compared to solar grade silicon cells when applied in photovoltaics industry such as solar cell or CPV system. 2" 3" 4" and 6" is available.



No.	Items	Standard Specifications			
1	Size	2"	3"	4"	6"
2	Diameter mm	50.8	76.2	100	150
3	Growth Method	VGF or CZ	VGF or CZ	VGF or CZ	VGF or CZ
4	Conductivity	P or N	P or N	P or N	P or N
5	Orientation	<100>	<100>	<100>	<100>
6	Thickness $\mu\text{m}$	145 $\pm$ 25	145 $\pm$ 25	175 $\pm$ 25	175 $\pm$ 25
7	Resistivity $\Omega\cdot\text{cm}$ max	0.05	0.05	0.05	0.05
8	Hall Mobility $\text{cm}^2/\text{V}\cdot\text{s}$	>200	>200	>200	>200
9	Carrier Concentration $\text{a}/\text{cm}^3$	$\geq 1\text{E}17$	$\geq 1\text{E}17$	$\geq 1\text{E}17$	$\geq 1\text{E}17$
10	TTV $\mu\text{m}$ max	10	10	10	10
11	Bow $\mu\text{m}$ max	15	15	15	15
12	Warp $\mu\text{m}$ max	15	15	15	15
13	Dislocation $\text{cm}^{-2}$ max	300 or 3000	300 or 3000	300 or 3000	300 or 3000
14	Surface Finish	E/E, P/E or as required			
15	Packing	Single wafer container/cassette inside, carton box outside			

### Zone-refined Germanium Ingot

**Zone-refined Germanium Ingot**, silver grey metallic color trapezoid metal polycrystalline ingot, purity over 99.999%, mainly used for fabrication of single crystal Ge ingot or wafer, Si-Ge alloy and other Ge based materials in semiconductor and infrared optical industries. 2" 3" 4" 6" are available.



No.	Items	Standard Specifications
1	Size	2", 3", 4", 6"
2	Diameter mm	50.8-150
3	Length mm	140-300, or as required
4	Conductivity	N/(As or Sb), P/(Ga or In)
5	Resistivity $\Omega\cdot\text{cm}$	$\geq 50$
6	Carrier Lifetime $\mu\text{s}$	80-500
7	Packing	In plastic bag with carton box outside