

Silicon Resistivity Reference Wafer NRW Series



Features

NRW series are resistivity reference wafers which proven by Napson's resistivity measurement system.

NRW series use wafers with neutron irradiation, and excellent stability.

Napson's four-probe resistivity measurement system has been calibrated by standard wafers (NIST, VLSI), and conforms to the standards stipulated by the following SEMI standards, Japanese Industrial Standards (JIS) and American Materials Testing Association (ASTM).

Applications

<Material> Silicon

<Production method> FZ

<Wafer finish frontside/backside> Lapped

<Wafer orientation> (1-1-1) ± 1 deg.

<Doping> N-type (Phosphorous)

<Wafer size> Φ100mm(4inch)

<Wafer Thickness> *Depends on NRW wafer type.

Please refer backside of this leaflet.

Compliance standards

[SEMI Standards]

SEMI-MF43-99, SEMI-MF374-02,
SEMI-MF84-02, SEMI-MF1529-02

[American Society for Testing and Materials]

ASTM-F-84-99(SEMI-MF84),
ASTM-F-374-00a,
ASTM-F-390-11, ASTM-F-1529-97

[Japan Industrial Standards]

JIS-H-0602-1995



Wafer Types / Specifications

Types	Resistivity (Ohm.cm)	Thickness (μm)	Sheet resistance (Ohm/sq) *calculated value
NRW-1-28	28.00 ±2.00	559.00 ±25.00	Approx. 500
NRW-2-110	110.00 ±11.00	580.00 ±10.00	Approx. 2000
NRW-3-200	200.00 ±12.00	675.00 ±25.00	Approx. 3000
NRW-4-330	330.00 ±25.00	675.00 ±25.00	Approx. 5000
NRW-5-550	550.00 ±50.00	450.00 ±25.00	Approx. 12000

*Value of sheet resistance[ohm / sq] is a calculated value calculated from the resistivity provided by the manufacturer and the wafer thickness.
Actual sheet resistance varies depending on wafer individual.

Guaranteed accuracy of Resistivity

Guaranteed position	Accuracy
Center area (*φ5mm spot from sample center)	± 3 %

*Napson's evaluation criteria conditions / guarantee accuracy under the environment

<Configurations>

Wafer x 1pc, Wafer case, Document(Certificate of Analysis and Confirmations)

<PRECAUTIONS>

- When measure this wafer with 4-probe method, it is necessary to acquire the measured value with the probe and the wafer in normal contact.

(In the case of contact failure, the standard deviation when measuring the same condition / same position multiple times or the measured voltage is not acquired normally)

- For measurement of this product, please use 4-point probe that conforming to the standards as follows(Tungsten carbide material, Radius of 40 μm, Needle pressure of 200 g) ;

JIS-H-0602-1995, ASTN-F-84-99 (SEMI-MF84).

(Measurement with probes not compliant is out of warranty, and accurate measurement may not be possible due to poor contact etc.)

*Please contact us for more details.

*Specification subject to change without notice.