THIN-FILM MATERIALS

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Certificate of Analysis (CoA)

Sep. 18, 2025

Product Name: Silicon Sputtering Target (P-Type, Boron-Doped)
Chemical Formula: Si (B-Doped)
Purity: 99.999% (5N)
Dimensions: Ø76.2 mm (3") × 3.18 mm (±0.1 mm)
Backing Plate: Indium bonded to OFHC Copper plate, 3 mm thick
Quantity: 1 Piece
Lot Number: CSXK-25SC-0904TB
Manufactured by: Thin-Film Materials

Physical Description

- Form: Semiconductor sputtering target
- Appearance: Gray, metallic-like surface
- Crystal Structure: Diamond cubic (Si)
- Resistivity: 0.017–0.019 Ω·cm
- Fabrication: High purity zone-refined silicon, B-doped, machined and indium bonded to copper plate

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Theoretical Stoichiometric Composition (%)

Element	Symbol	%
Silicon	Si	~100%
Boron (dopant)	B	trace, ppm level

Balance: Silicon (B-doped)

Chemical Composition (by GDMS / ICP-MS)

Element	Symbol	Max. Content (ppm)
Silicon	Si	Balance (>99.999%)
Boron (dopant)	B	Controlled, ppm-level (per resistivity spec)

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Element	**Symbol**	**Max. Content (ppm)**
Oxygen	O	<20
Carbon	C	<10
Iron	Fe	<5
Aluminum	Al	<5
Calcium	Ca	<5
Sodium	Na	<3
Nickel	Ni	<3
Copper	Cu	<3
Lead	Pb	<1
Other trace elements (each)	–	<5
Total Impurities (excl. B dopant)	–	<50 ppm

Handling & Storage

- Store under cleanroom or inert conditions to prevent surface oxidation.
- Handle with clean gloves to avoid contamination.
- Avoid mechanical shock to prevent cracking or chipping.

Declaration

We certify that the above product has been manufactured and tested in accordance with our quality control system and meets the specifications stated herein.

Authorized Signature:

Inspection Certificate by: **Nancy Liu**

Approver by: **Chen Qiang** Chen Qiang