

ICS 29.045

CCS H83



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 11093-2007

Replacing GB 11093-1989

**Liquid encapsulated czochralski - grown gallium arsenide
single crystals and as-cut slices**

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Foreword

This standard is GB/T 11093-1989 "liquid encapsulated Czochralski GaAs single crystal and cut film" amendments. This standard compared with GB/T 11093-1989, the main changes are as follows:

- Monocrystalline and cutting sheet grades according to GB/T 14844 "semiconductor material grades representation" has been revised;
- Increased by 76.2mm (3in), 100mm, 125mm and 150mm specifications of the product;
- Increasing the incorporation of impurity elements such as carbon products;
- Removed 40mm specifications of the products;
- Canceled by the dislocation density of the product classification. From the date of implementation of this standard, instead of the GB/T 11093-1989. The standard proposed by China Nonferrous Metals Industry Association. This standard by the National Standardization Technical Committee materials and equipment at the Technical Committee of semiconductor material. This standard was drafted. Beijing Nonferrous Metal Research Institute. The main drafters. Zhang Fengyi, Zhengan Sheng. This standard replaces the standards previously issued as follows:
 - GB/T 11093-1989. Liquid encapsulated Czochralski GaAs single crystal and cut sheet

1 Scope

GB/T 11093-2007 is the Chinese national standard on liquid encapsulated czochralski - grown gallium arsenide single crystals and as-cut slices, in the field of electrical engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 11 September 2007 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 February 2008. Classification: ICS 29.045, CCS H83. This page is published from the official record of the standard held by the Chinese standards

administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the liquid encapsulated Czochralski GaAs single crystal and cut sheet requirements, test methods, inspection rules and signs, packaging, transport vessel Memory and so on. This standard applies to liquid seal Czochralski GaAs single crystal prepared by cutting and sheet. Products for the production of microwave devices, integrated circuits, electrical light Member, and an infrared sensor window materials and other components.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 1555 to the measurement method of a semiconductor single crystal

GB/T 2828.1 Sampling procedures for inspection - Part 1. by acceptance quality limit (AQL) retrieval batch inspection sampling plan

GB/T 4326 extrinsic semiconductor single crystals Hall mobility and Hall coefficient measurements

GB/T 8760 GaAs single crystal dislocation density measurement

GB/T 13387 Electronic Materials wafer reference surface length measurement method

GB/T 14264 semiconductor material terms

GB/T 14844 semiconductor material grades that way GJB1927 GaAs single crystal material test methods

3 Requirements

3.1 Categories Products by type conductivity and resistivity type into a semi-insulating (SI type), low resistance conductivity type (n-type and p-type). Grade 3.2

3.2.1 grade is expressed as a single crystal LEC-GaAs- - () - <> GaAs single crystal growth method represents a liquid encapsulated Czochralski GaAs material of the formula Conductivity type, the elements within the brackets is the symbol for the dopant, if there are two or more dopants, Separated by "+" connection crystal orientation represented by Miller indices If not emphasize producing single crystal doped or not, the corresponding grades portion may be omitted. Example. LEC-GaAs-SI- < 100> indicates liquid encapsulated

Czochralski semi-insulating $\langle 100 \rangle$ direction of the GaAs single crystal; LEC-GaAs-n (Te) - $\langle 100 \rangle$ indicates liquid encapsulated Czochralski doped tellurium (Te) n-type $\langle 100 \rangle$ direction of the GaAs single crystal; LEC-GaAs-SI (Cr + O) - $\langle 100 \rangle$ indicates liquid encapsulated Czochralski chromium (Cr) oxygen (O) double-doped semi-insulating $\langle 100 \rangle$ direction of the GaAs single crystal.

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