Packages for High-Speed Digital GaAs Integrated Circuits

Fact Sheet

Project Information

Grant agreement ID: 1569

Project closed

Start date
31 January 1986

End date
31 January 1990

Funded under
European programme (EEC) for research and development in information technologies (ESPRIT), 1984-1988

Total cost
No data

EU contribution
No data

Coordinated by
MO VALVE COMPANY LTD
United Kingdom

Objective

The various package design requirements being developed to meet the requirements of the GaAs IC industry were investigated. The objective was the establishment of package standards, together with clearly defined design principles and methods of fabrication.
The project goal was to develop 8, 16, 24 and 40I/O lead packages having the necessary operational characteristics for mounting and hermetically encapsulating GaAs ICs for use in high-speed digital applications. Extensive use was made of sophisticated co mputer-aided design and simulation modelling, the success of which had been already been established in the case of the 8I/O lead package.

The various package design requirements being developed to meet the requirements of the gallium arsenide (GaAs) integrated circuit (IC) industry were investigated. The objective was the establishment of package standards, together with clearly defined design principles and methods of fabrication.

3 technical approaches to package construction were investigated:
the use of direct sealing techniques;
glass joining fired ceramic;
confiring glass ceramic.
Associated topics included materials, metallisation and heat dissipation.

The direct sealing method of package fabrication was established. Valve samples of 8 input/output (I/O) and 16 I/O (original design) fabricated under the fired glass joining structure were supplied for qualification and prototype structuress of green glass ceramic emerged. The redesign of 8 and 16 I/O packages was performed. Three technical approaches to package construction were investigated: the use of directsealing techniques, glass joining fired ceramic, and cofiring glassceramic. Associated topics included materials, metallisation and heat dissipation.
This project was complementary to project 958 as part of the "Advanced Packaging" workprogramme.
During the first year, the direct sealing method of package fabrication, originally used at Thomson, was established at EEV. Valve samples of 8I/O and 16I/O (original design) fabricated under the fired glass joining structure were supplied to Thomson for qualification, and prototype structures of green glass ceramic emerged.
In the second year, the redesign of 8 and 16I/O packages was performed. However, at that time, analysis by the industrial partners showed that the prospects of developing a viable business in competition with other sources had seriously diminished, and c onsequently it was decided to discontinue the project.

Fields of science (EuroSciVoc)

natural sciences > chemical sciences > inorganic chemistry > **post-transition metals**

engineering and technology > **materials engineering**

Programme(s)

FP1-ESPRIT 1 - European programme (EEC) for research and development in information technologies (ESPRIT), 1984-1988

Topic(s)

Data not available

Call for proposal

Data not available

Funding Scheme

Data not available

Coordinator

MO VALVE COMPANY LTD

EU contribution

No data

Total cost

No data

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Participants (1)

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EU contribution

No data

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Total cost

No data

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