R&D of the Basic Technology for Creating Advanced Functional Si Devices for Car Electronics

<Program for Fostering Regional Innovation (Global Type) >

Project Team

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Enterprises

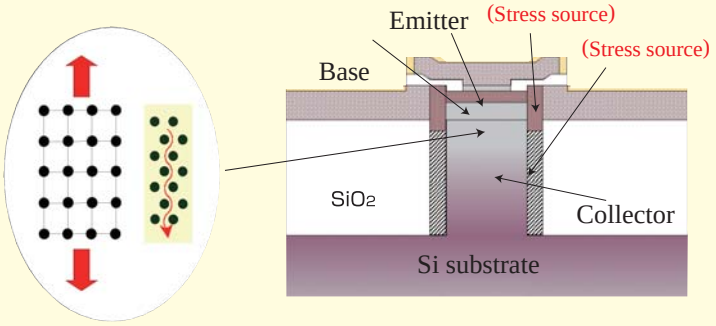
Toshiba Corporation Semiconductor Company

Purpose of the Research

The aim of this research is to establish a strain application and its device technology for BJT, which is achieved by the application of a vertical strain to base and collector regions of BJT, resulting in enhancement of the electron's traveling speed. Through this approach, we are aiming to enhance the functionality of BJT, which is a component device of a RF analog IC.

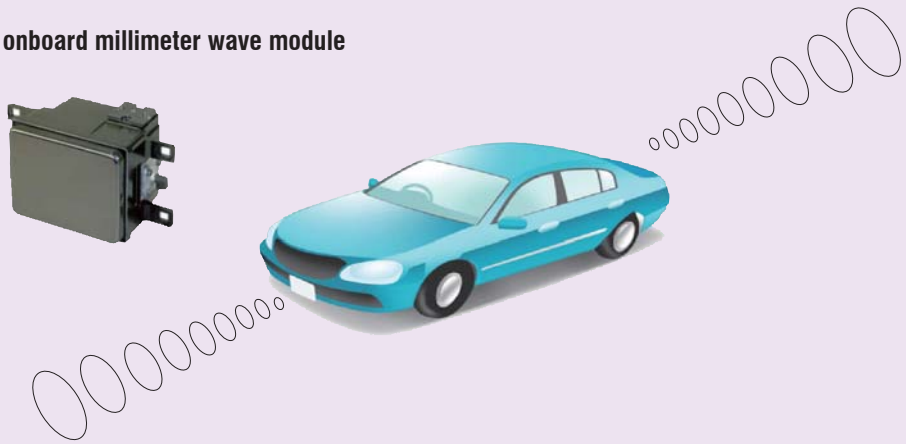
Summary of the Research

It is expected that the onboard millimeter wave radar with 77 GHz band will be one of the target applications in automotive electronics devices. In this research, we are going to establish a new Si technology to replace the currently used GaAs technology, which gives BJT the functions of higher speed and lower power consumption.



Expected Results of the Research

77 GHz onboard millimeter wave module



Prospective Fields of Application

High-speed and low-power consumption device

Example) Onboard millimeter wave radar

ふくおか IST
Information

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