

**“Bandpass filter for millimeter-wave applications up to 220 GHz integrated in advanced thin SOI CMOS technology on high resistivity substrate”**

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**Abstract** – This paper deals with the design of bandpass filters in V-frequency band. A comparison between classical shunt-stub filter performances integrated in High Resistivity (HR) Silicon on Insulator technology (SOI), standard CMOS and III-V technology is made. The use of HR SOI demonstrates performances comparable to state of the art III-V technologies up to G-band. These results evidence the impact of HR SOI wafer towards substrate losses reduction. Once the technology has proved its efficiency, implementation of a narrowband coupled-lines bandpass filter with central frequency of 60-GHz was investigated.