

## SiC 버퍼층위 스퍼터링법으로 증착된 극한 환경용 AlN박막의 SAW 특성

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### SAW characteristics of AlN films sputtered on SiC buffer layer for harsh environment applications

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**Abstract :** This paper describes the frequency response of two-port surface acoustic wave (SAW) resonator made of 002-polycrystalline aluminum nitride (AlN) thin film on 111-poly 3C-SiC buffer layer. In there, Polycrystalline AlN thin films were deposited on polycrystalline 3C-SiC buffer layer by pulsed reactive magnetron sputtering system, the polycrystalline 3C-SiC was grown on SiO<sub>2</sub>/Si sample by CVD. The obtained results such as the temperature coefficient of frequency (TCF) of the device is about from 15.9 to 18.5 ppm/<sup>o</sup>C, the change in resonance frequency is approximately linear (30–150<sup>o</sup>C), which resonance frequency of AlN/3C-SiC structure has high temperature stability. The characteristics of AlN thin films grown on 3C-SiC buffer layer are also evaluated by using the XRD, and AFM images.

**Key Words :** SAW, SiC, AlN