

## 고주파대응 고집적 모듈용 저유전율 소재

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### Low k Materials for High Frequency High Integration Modules

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**Abstract :** As a low K material for high frequency high integration modules, glass/ceramic composites were investigated. Glass composition were selected from SiO<sub>2</sub>-B<sub>2</sub>O<sub>3</sub>-Al<sub>2</sub>O<sub>3</sub>-R<sub>2</sub>O-RO system which having very low dielectric constant and cordierite was used as a ceramic filler. These composites were sintered at temperature range from 850° to 950° and XRD, SEM microstructure analysis of sintered bodies were performed for understanding sintering behavior. Any crystallization was not occurred and dense sintered bodies were attained. Dielectric and mechanical properties of these sintered glass/cordierite composites were analysed by network analyzer and UTM. Glass/ceramic composite with 50 wt% cordierite showing a dielectric constant ( $\epsilon_r$ ) of 5.4,  $Q \times f_0$  (Q) of 1600 at 1 GHz and maximum bending strength of 163 MPa was attained.

**Key Words :** LTCC, Low K, Dielectric constant, Glass/ceramic, Cordierite