

CERAMIC ON METAL CIRCUIT BOARD

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ABSTRACT

Compositions of $\text{MgO-B}_2\text{O}_3\text{-SiO}_2$ system glass-ceramics and compositions of such glass-ceramic and fillers, are suitable for use in the fabrication of multi-layered, co-fired, ceramic-on-metal circuit boards, in which the co-fired, multi-layered ceramic exhibits desirable electrical properties and a temperature coefficient of expansion which closely matches that of its co-fired metal base, although these compositions may have other uses. A method of fabricating a circuit board (10) includes using a glass bonding layer (18) having a coefficient of thermal expansion not greater than that of the metal base (12). The glass bonding layer has a softening point below that of the glass in the multi-layer ceramic (20), so that the glass of the bonding layer flows and bonds to the metal while minimizing the lateral shrinkage of the multi-layered ceramic.

This Sheet Has Been Replaced