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MONOLITHIC CERAMIC CAPACITOR

Abstract of the Disclosure

Disclosed is a monolithic ceramic capacitor comprising dielectric ceramic layers made from a material which comprises an essential component of $(1-\alpha-\beta)\{\text{BaO}\}_m\text{TiO}_2 + \alpha\text{Re}_2\text{O}_3 + \beta(\text{Mn}_{1-x}\text{Ni}_x\text{Co}_x)\text{O}$ ($0.0025 \leq \alpha \leq 0.025$; $0.0025 \leq \beta \leq 0.05$; $\beta/\alpha \leq 4$; $0 \leq x < 1.0$; $0 \leq y < 1.0$; $0 \leq x + y < 1.0$; $1.000 < m \leq 1.035$) and from about 0.1 to 3.0 mols, relative to 100 mols of the essential component, of a side component MgO , and contains from about 0.2 to 3.0 parts by weight, relative to 100 parts by weight of said components, of an oxide of the type of $\text{Li}_2\text{O}-\text{B}_2\text{O}_3-(\text{Si},\text{Ti})\text{O}_2$. The capacitor is low-priced and can be small-sized, while having large-capacity. It has a dielectric constant of 3000 or more, and has a high insulating resistance of 6000 $\text{M}\Omega\mu\text{F}$ or more and 2000 $\text{M}\Omega\mu\text{F}$ or more at 2 KV/mm and at room temperature and 125°C, respectively, and 2000 $\text{M}\Omega\mu\text{F}$ or more and 500 $\text{M}\Omega\mu\text{F}$ or more at 20 KV/mm and at room temperature and 125°C, respectively. It has temperature-dependent capacitance that satisfies the B-level characteristic standard stipulated in the JIS Standard and the X7R-level characteristic standard stipulated in the EIA Standard, and has high reliability irrespective of the presence or absence of plate film covering it.

Fig. 1

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