

ABSTRACT

Silicon Nitride Powder Production Method, Silicon Nitride Powder, Silicon Nitride Sintered Body and Circuit Substrate Using Same

An object of the present invention is to provide a silicon nitride sintered body having high mechanical strength and thermal conductivity, and a circuit substrate using the same. A method for producing a silicon nitride powder, including heating an amorphous Si-N(-H)-based compound in which assuming that the specific surface area is RS (m^2/g) and the oxygen content ratio is RO (mass%), RS/RO is 500 or more, at a temperature rising rate of 12 to $100^\circ\text{C}/\text{min}$ in a temperature range from $1,000$ to $1,400^\circ\text{C}$ while flowing the compound by a continuous firing furnace, is provided. Also, a silicon nitride powder wherein assuming that the content ratio of oxygen existing in a region from the particle surface to 3 nm beneath the particle surface is FSO (mass%), the content ratio of oxygen existing in the more inward side than 3 nm beneath the particle surface is FIO (mass%), and the specific surface area is FS (m^2/g), FS/FSO is from 8 to 25 and FS/FIO is 22 or more; a silicon nitride sintered body obtained by sintering the silicon nitride powder; and a circuit substrate using the silicon nitride sintered body, are provided.

No Figure.