Muffins are sweet baked products highly appreciated by consumers. They have a particular taste and shape, and their formulation consists in flour, eggs, sugar, butter/margarine, flavors and yeast. The main quality attributes of muffins are surface crust color, crust/crumb ratio, texture, among others. All of them are strongly influenced by baking operative conditions. In this sense, the aim of this work was to study the influence of oven temperature on different quality attributes of muffins. Baking tests were performed in a domestic electrical oven using the heating mode without ventilation. Five oven temperatures were used: 140, 160, 180, 200 and 220 ºC. Final baking time was determined in function of core temperature and surface crust color. Several quality indicators were measured and analyzed in function of oven temperature: muffin height, global density and crust thickness for the whole sample. In addition, crumb moisture content, porosity, crumb density and textural properties allow crumb structure analysis. Finally, the sensory characteristics were evaluated by an untrained panel of 50 consumers using the acceptance test. The results show that the core temperature is strongly influenced by oven temperature, being the heating rate between 0.15 ºC/s to 0.41 ºC/s, from $T_{oven}$ 140 and 220ºC, respectively. Low oven temperatures produce muffins with low height, denser and thicker crust. On the contrary, high oven temperatures lead to a product with higher porosity, lower crumb density and lower firmness. The sensory analysis showed dependence between acceptability and porosity, crumb density and firmness; products more porous and less firm are preferred.