Abstract: In the paper through the measurement of positive and negetive corona charging and TSD current spectra at normal and high temperatures, the outstanding electret features of Teflon PFA are studied and the optimum charging temperature of the positive and negative corona is determined. Also, by use of the initial rise method and the peak-cleaning technique, the activation energy of different energy traps in this material can be estimated. By means of the comparison between open-circuit and short-circuit TSD current spectra,the polarity of PFA LP type material is analyzed preliminarily,and the average transit time of the detrapping carriers on the PFA sample, at high temperature of 150℃ is estimated after the corona is charged at normal temperature, moreover, the geometric distribution of the charges captured in different energy traps along the thickness of the sample is analyzed, and so the bask properties of the materials of Teflon PFA and Teflon FEP electrets are finally compared