Abstract: The influences of charging parameters (such as charging voltage, charging time and charging temperature, etc.) on piezoelectricity and its thermal stability of cellular polypropylene film electrets were studied by means of contact charging, constant voltage corona charging methods and the thermal stimulated discharge technique. The reasons about the influence were discussed with the material structure and theoretic model of cellular piezoelectric film electrets. The results show that the piezoelectricity and its thermal stability of the polymer cellular film electrets would be improved by optimizing the charging parameters reasonably. The work will be helpful to broaden the application for cellular PP and offer theoretic and technical base for their industrialization.